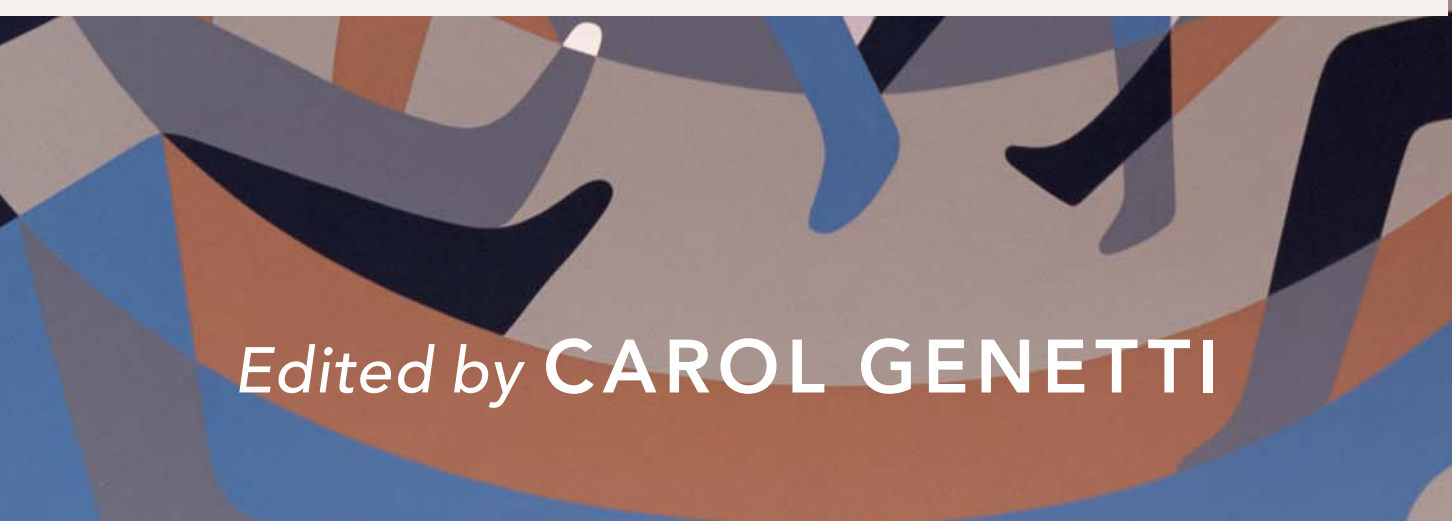
How Languages Work

An Introduction to Language and Linguistics

Second Edition



Edited by CAROL GENETTI

How Languages Work

An Introduction to Language and Linguistics

Language is a sophisticated tool which we use to communicate in a multitude of ways.

Updated and expanded in its second edition, this book introduces language and linguistics – presenting language in all its amazing complexity while systematically guiding you through the basics. You will emerge with an appreciation of the diversity of the world's languages, as well as a deeper understanding of the structure of human language, the ways it is used, and its broader social and cultural context.

Part I is devoted to the nuts and bolts of language study – speech sounds, sound patterns, sentence structure and meaning – and includes chapters dedicated to the functional aspects of language: discourse, prosody, pragmatics, and language contact. The fourteen language profiles included in Part II reveal the world's linguistic variety while expanding on the similarities and differences between languages. Using knowledge gained from Part I, you will explore how language functions when speakers use it in daily interaction.

With a step-by-step approach that is reinforced with well-chosen illustrations, case studies, and study questions you will gain understanding and analytical skills that will only enrich your ongoing study of language and linguistics.

Carol Genetti is a Professor of Linguistics and the Anne and Michael Towbes Graduate Dean at University of California, Santa Barbara.

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An Introduction to Language and Linguistics

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PRIMARY CHAPTERS

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PREFACE

How Languages Work is designed to be the primary text for a university-level introductory course in linguistics. The audience for the book includes:

- undergraduates taking an introductory linguistics course as a general education requirement;
- beginning linguistics students with limited background in the field;
- linguistics graduate students seeking a helpful reference and introductory discussions of a wide range of sub-disciplines and a range of languages;
- students in related disciplines (such as education, anthropology, writing, or communication) that seek grounding in linguistics; and
- general readers with an avid love of languages.

In addition to courses offered within departments of linguistics, the book might be used in departments of anthropology, education, psychology, communication, applied linguistics, English, or other languages. It introduces the field of linguistics through its subfields, and prepares students for more advanced and specialized coursework.

ACKNOWLEDGMENTS

This book has been the work of many hands over many years. My sincere thanks go out to the contributing authors, whose combined experience in linguistics can be counted in centuries and whose deep insights into language enrich every page of this book. They have been extraordinarily patient with me as I've pursued this project simultaneously with many others and have graciously accepted deeper editing than they are typically accustomed to as I've strived to bring unity and a consistent voice to these pages. I have greatly appreciated their wisdom, patience, good humor, and sheer hard work.

This book would never have come into existence without the dedicated energy of numerous graduate students – former and current – in the Department of Linguistics at the University of California, Santa Barbara. First and foremost, it is my pleasure to acknowledge Allison Adelman, whose meticulous attention to detail and love of good writing have served to improve this book greatly. I strongly doubt that I would ever have brought this to completion if I hadn't had her partnership, flexibility, and cheerful persistence to rely on, and for this she will have my unending gratitude. For the website materials, especially the interactive elements, I enthusiastically thank Carlos Nash for visioning and revisioning what might be possible and bringing them to fruition. I'm also grateful for the early partnership of Kobin Kendrick, who helped to shape and creatively transform and extend my initial ideas. Other graduate students who have contributed in ways too numerous to mention include Dibella Caminsky, Onna Nelson, Nicholas Lester, Rebekka Siemens, Kira Griffitt, Veronica Muñoz LedoYañez, Jennifer Garland, and Mara Henderson. UC Santa Barbara undergraduates have also commented, corrected, and test-run these materials; I especially note the careful work of Kristin Dunkinson, Kaveh Vee, and David Prine.

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The first edition of this book was partly written when I was in residence as a Distinguished Visiting Fellow at the Cairns Institute, James Cook University, in Cairns, Australia. My thanks to Sasha Aikhenvald and R. M. W. Dixon for their contributions, friendship, and support. UC Santa Barbara has been the home of this book, both intellectually and in financial support. I am grateful to the Division of Humanities and Fine Arts and the Office

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Finally, I thank Paul, Olivia, and Marcus for their love, support, uncomplaining patience, and constant inspiration.

I dedicate this book to the UC Santa Barbara Linguistics graduate students: past, present, and future.

CAROL GENETTI
Santa Barbara

GLOSSING CONVENTIONS

Convention	Meaning
1	first person
2	second person
3	third person
A	agentive argument of transitive verb
ABL	ablative
ABS	absolutive
ACC	accusative
AD	adessive (“onward”)
ADJ	adjective
ADV	adverbial
ADV.DS	adverbial, different subjects
ADV.SS	adverbial, same subjects
AFFIRM	affirmed evidential knowledge
AGT	agentive
ALL	allative
ALREADY	already
ANT	anterior
APPL	applicative
APUD	next-to locative
ASP	aspect marker
ASSOC	associative plural
AUX	auxiliary
AV	active voice
AWAY.FROM.RIVER	directional affix
BRIEF	brief duration
CAUS	causative
CLF	classifier
CLT	clitic
COM	comitative
COMPAR	comparative
COMPL	completive

COND	conditional
CONJ	conjunctive
CONJECTURE	evidential
CONS	mutual consent
CONT	continuous
COP	copula
DAT	dative
DECL	declarative
DEF	definite
DEM	demonstrative
DESIDERATIVE	desiderative
DET	determiner
DIM	diminutive
DIST	distal
DISTR	distributive
DLOC	dislocative
DM	discourse marker
DS	different subject
DU	dual
DUPLICATIVE	duplicative
DUR	durative
EMPH	emphatic
ERG	ergative
ESS	essive
EVEN	additive
EVENT	event
EVID	evidential
F	feminine
FACTUAL	factual
FOC	focus
FUT	future
FUT1>2	future tense for first-person subject with a second-person object
GEN	genitive
HABITUAL	habitual
HON	honorific
I/II/III/IV	gender classes
IE	informal ending
ILL	illative
IMP	imperative
IMPRS	impersonal
INC	inceptive

INCL	inclusive
IND	indicative
INDF	indefinite
INE	inessive
INF	infinitive
INST	instrumental
INTENSIFIER	intensifier
INTR	intransitive
IO	indirect object
IPFV	imperfective
IRR	irrealis
ITR	iterative
JUST	delimitative
LAT	lative
LINKER	linking morpheme
LOC	locative
M	masculine
MANIP	manipulative
MIDDLE	middle voice
MUTUAL	evidential
N-	non-
NEAR.FUT	near future
NEG	negative, negation
NF	non-Feminine
NMLZ	nominalizer
NOM	nominative
NP	noun phrase
NPST	non past tense
NSG	non singular
NUM.CLF	numeral classifier
OBJ	objective
OBL	oblique
OBLIGATE	obligation
P/O	patientive argument of transitive verb
PASS	passive
PFV	perfective
PL	plural
POSS	possessive
POSSEE	possessee
PREP	preposition
PRF	perfect

PROG	progressive
PROX	proximal
PRS	present
PRT	partitive
PST	past
PST.PTCP	past participle
PTC	particle
PTCP	participle
PURP	purposive
Q	question marker
QUOT	quotative
REC.PST	recent (past)
REDUP	reduplication
REM.PST	remote (past)
REP	repetitive
REPORT	non-personal knowledge
S	intransitive subject
SBJ	subject
SEMBL	semblative
SEQ	sequential
SG	singular
SPEC	specific-indefinite article
SS	same subject marking
STAT	stative
SUB	below locative
SUPER	above locative
TO	directional affix
TOP	topic
TR	transitive
UNW	unwitnessed
UP	up(stream) directional
VERBAL.ADJ	verbal adjective
WIT	witnessed
YET	yet

THE BOOK'S APPROACH

This textbook explores how languages work: the "pieces" of languages and the principles governing their nature and how they fit together; the ways in which language conveys meaning; how humans use language as the substance of everyday interaction; the role of language in society and culture; how languages adapt and change over time; and how they are learned by children and adults. It presents language as a quintessentially human activity, showing how languages are grounded in human physiology and cognition, and are both reflective and creative of human societies and cultures. It emphasizes the dynamic and constantly changing nature of language. Teaching students this broader context allows them to understand the forces that shape language, hence to gain a deeper understanding of linguistic principles and structures.

The book does not introduce any particular "formalist" theoretical paradigm (such as Generative Grammar) but describes grammatical structures from the perspective of linguistic typology. It thus follows a broad international consensus on the nature of linguistic categories and structures. It is an appropriate choice for faculty members who wish to provide their students with a rigorous orientation to language and linguistics without introducing formal models. This book is highly technical and analytical, and requires exacting attention to structural detail. Grammar is presented in significant depth and the material may at times be challenging. However, a major focus of the text is to provide students with explicit direction that will help them acquire analytical skills. In addition, the associated website includes numerous learning aids (such as interactive tutorials) that support this process. The password-protected instructor materials on the website include suggestions for sections to assign (and not assign) for classes with a less technical emphasis.

Importantly, this book is strongly cross-linguistic in its orientation; the focus is not just on ***language*** but also on ***languages***. In exposing readers to languages from across the globe, it serves as an introduction to the world's linguistic diversity. Cross-linguistic comparisons are important not only because they allow us to classify languages but also because they reveal what a language is or might be. Understanding the similarities and differences between languages is essential to the development of empirically justifiable theories about language. In addition, linguistic variety is simply fascinating and fun; it reveals much about humankind, and the thousands of ways that particular communities of speakers have

categorized and represented the world around them. For that reason, this book contains a special feature: a set of ***Language Profiles***, each written by a linguist who has conducted extensive fieldwork in the community that they write about (with the exception of Guy Deutscher, whose profile is on the long-extinct language Akkadian, which is attested on excavated clay tablets). After a brief introduction to the language and the community in which it is spoken, each language profile provides an overview of the basic structures and then goes into depth on one or more topics that tie in with the primary chapters. The profiled languages were selected to represent languages of diverse locations, families, and types. Together, these fourteen short studies serve not only to reinforce and illustrate the main points of the primary chapters but also to expose the reader to the world's linguistic diversity.

The Book's Structure

The book contains fifteen primary chapters and fourteen language profiles. These can be fit into academic programs in a number of ways. The book provides more than sufficient material for a semester-long introductory course. It can also be used in a shorter academic quarter, with instructors selecting the topics they deem the most crucial for students within their programs. It can also be used across multiple courses; for example, the language profiles can be used in subsequent courses on linguistic analysis, morphosyntax, or languages of the world. Chapters not covered in an introductory course can serve as initial readings in more specialized topic-specific courses (such as on language acquisition). The material could also be expanded to a two-quarter or year-long course, although in the latter case some supplementary readings may be desirable. Further discussion on different ways to structure courses and how to incorporate the language profiles are available on the instructor's portion of the website.

The chapters in this book follow the traditional format of tracing linguistic structure, beginning with the smallest units (sounds), building up to successively larger units, and ending with discourse. Chapters on orthogonal topics – such as semantics, language change, and language acquisition – follow the structural chapters. Several chapters are included on a variety of topics that are not typically found in introductory textbooks. These include prosody, discourse, pragmatics, and language contact.

The theoretical perspective and broad coverage of this book allow it to fill a niche in the market that is currently not covered by other texts. The contributing authors are practicing linguists and distinguished leaders in their given fields. The editor and each author, while not losing their individual voice, maintain a consistent chapter structure and level throughout, to ensure a smooth reading experience for the student. The text is contemporary and up to date. Most importantly, it presents language in the full richness of its context, as a complex dynamic tool shaped by generations of speakers through discourse interactions, adaptive to the broader social and cultural context in which it is embedded. Readers will develop a deep appreciation of the beauty, complexity, and sheer genius of language, and of humankind to whom it belongs.

Changes to the Second Edition

The Second Edition contains a number of enrichments and improved features. Most substantively, this edition contains a new language profile on African-American English that is well integrated with Chapter 11: Language in the Social World. The latter has been restructured and updated. In addition, Chapter 2, Phonetics: the Physical Dimensions of Speech Sounds, has been expanded to include a description of British English, and both British and American English are represented in the examples, exercises, and associated sound files. This will make it easier for the text to be used in classrooms in the United Kingdom. It also allows for direct comparison between these two major English dialects.

Other changes include:

- a significant increase in the number of exercises in the primary chapters;
- increased examples from English and other major world languages in the main text and the exercises;
- clarification of the distinction between Textboxes and Sidebars, and the addition of a distinct category of "Stop and Reflect" boxes;
- greater integration of website materials and Language Profiles through increased cross-referencing;
- reduction of highlighted text to better emphasize primary points;
- updated suggestions for further readings;
- overall streamlining of prose.

www.cambridge.org/genetti2

The website materials are important companions to the book. The website contains a range of materials that will help instructors teach the course and help students engage with and master the skills of linguistic analysis.

Online resources for students include:

- sound files associated with particular examples in the text;
- interactive tutorials on problem solving;
- online flashcards;
- "how-to" guides that take students through steps of linguistic analysis;
- explicit instruction in writing for linguistics;
- study guides;
- self-administered online quizzes on vocabulary and key concepts;
- enriched material about the profiled languages, including interesting cultural information and profiles of speakers.

Online resources for instructors include:

- PowerPoint slides for each chapter;
- suggested exam questions;
- sample assignments;
- answer keys;
- suggestions on how to structure courses, depending on class goals;
- guide to the Language Profiles and suggestions on how to incorporate them into classes.

FOR STUDENTS: HOW TO USE THIS BOOK

Linguistics is a highly diverse and interdisciplinary field, encompassing phenomena as varied as the concrete details of physical acoustics, abstract logical argument, concise grammatical structures, and rich observations on culture and society. There are few people for whom all of it comes easily – everyone has their favorite subfields – but it is all essential; every subfield deeply interacts with all others. This book has been designed with students in mind and has many features to facilitate acquisition of the skills necessary to fully appreciate the complexity of language.

It is important in linguistics to engage with the text. Linguistics is not a field where you read quickly and lightly. It is better not to plan to cover too much at one time and not to hurry through it; take adequate time to fully work through a couple of sections, and then take a break. Throughout the primary chapters, you will find that ***key points have been put in bold italics***. Of course, there are many other important points that you will want to note as well.

Be sure to really think about the discussion and make it your own; take time to reflect on your own lifelong experience of language and connect it to what you are learning, and try to become conscious of language use as you are immersed in it daily. This practice will take your understanding to an entirely new level.

Textboxes contain case studies and important related points and should always be read. "Stop and Reflect" boxes give you the opportunity to consider important questions or try your hand at linguistic analysis; taking time to work through these will facilitate your learning. Sidebars provide information on online resources as well as cross-references to related discussions in other parts of the book. Wireless icons () direct you to specific online resources that are relevant at particular points in the text.

You will find that the pages are filled with examples taken from languages throughout the world. Most of these are numbered and set off from the text. It is critical that you spend time looking at these in detail, even if you are tempted to skip over them to continue with the main text. They are as important as the text itself: each informs the other and neither can be fully understood in isolation. You will find that words from other languages are usually broken into their component parts and that translations of the meanings of each part are provided. Often these translations are abbreviated and put in small caps, for example,

SG for singular. Each chapter has a list of the glossing conventions used within it positioned just before the exercises. A full list of all glossing conventions in the book can also be found on pages xviii–xxi.

One of the essential features of this book is its focus on linguistic analysis. This is the process by which you take a linguistic expression (a word, a sentence, a stretch of discourse) and figure out all of its parts and subparts and how they contribute to the whole. This fine-grained analysis then leads us to a broader understanding of how languages work, the underlying principles, and how the design of languages both serves and reflects their functions as tools of human communicative interaction.

There are many methods of linguistic analysis, depending on which aspects of language are being studied. For example, determining which aspects of phonetic articulation are meaningful in a language is a very different (though surprisingly not unrelated) exercise from determining whether two languages are members of the same language family, or whether a language differentiates active voice from passive voice. Learning how to apply these methods is central to learning linguistics. In order to make this as easy as possible, methodologies are presented in step-by-step fashion. "Stop and Reflect" boxes prompt you to apply the methods to further data sets. Each chapter has a set of exercises that allow you to analyze new data. In addition, there are many resources on the companion website that serve as aids for improving your analytical skills. These include interactive tutorials, step-by-step instructions, guides to writing in linguistics, and other chapter-specific resources.

Linguistics has extensive terminology that must be learned to understand the field successfully. The Glossary in the back of the book provides simple definitions and is an important reference tool. All words in the Glossary are presented in **bold** at first mention (as well as later in the book if they haven't been mentioned for a while, as a reminder that a glossary entry is available). Chapter-specific glossaries are available on the website. There are also online flashcards for each chapter to help you memorize terms.

Another important component of the website is the addition of sound files. The majority of instances of language use are spoken, and sound is an integral part of most languages (sign languages being the exception). Throughout this book (and others) you will see speech sounds represented by letters and other two-dimensional symbols, but keep in mind that these are only *representations* of sounds, not sounds themselves. In moving to the abstraction of representation, considerable richness is lost. To partially address this, especially for those chapters that focus on sound (phonetics, phonology, and prosody), many of the examples are accompanied by sound files accessible on the *How Languages Work* website; these are indicated by the wireless icon. Take the time to listen to them carefully. Most of the language profiles also have sound files, typically of recorded texts. These provide a tangible sense of the language and its speakers that cannot be otherwise replicated.

One of the most fascinating aspects of studying linguistics is learning about the tremendous variety – and ingenuity – of human languages. Linguistic diversity is both captivating and fun. In addition, understanding linguistic diversity is critical to understanding the broader principles that underlie languages, i.e., how languages work, and what languages do. The primary chapters in the book are replete with examples taken from languages across the globe. In addition, the book contains fourteen language profiles, which are case studies

in shorter chapters that focus on particular languages. Your instructor may assign these, or you may just want to explore languages of particular regions or particular types on your own. Reading the whole set of language profiles will serve to significantly advance your understanding of linguistics. Not only do they allow the widespread application of linguistic concepts to many different languages, but they also illustrate the diversity of language types, especially as regards their grammatical structures. Textbox 0.1 provides a list of the language profiles in relation to the chapters to which they correspond; it is best to read the relevant chapter first.

TEXTBOX 0.1 **WHEN TO READ WHICH LANGUAGE PROFILES**

After Chapter:	**Read:**
3	Kabardian
6	Goemai, Manange, Nuuchahnulth, Finnish, Quechua, Bardi, Tsez
7	Lowland Chontal
11	African-American English, Indonesian
12	Seneca, Akkadian
13	Manambu

My own experience with linguistics is that the farther I climb, the greater the vistas I behold. I hope that students will find their own vistas by exploring the field far beyond this book. To encourage this, every chapter and language profile contains a list of suggested readings with a brief note about each entry; these can provide some potential next steps toward a deeper understanding of this quintessential aspect of our humanity.

PART I

PRIMARY CHAPTERS

1 Introduction

Language, Languages, and Linguistics

KEY TERMS

- Linguistics
- Linguist
- Linguistic structure
- The functional nature of language
- Language versus dialect
- Language change
- Linguistic analysis
- Language endangerment
- Language documentation and conservation
- The fields of linguistics

CHAPTER PREVIEW

Language plays a crucial role in our lives as a functional system of human communication. It is central to our cultures and societies, and has played a significant role in Western intellectual history of the study of philosophy, mind, ancient history, and culture. Linguistics is the scientific study of language. This chapter provides an orientation both to language and to the field of linguistics. It introduces the languages of the world, their distribution and demographics, the important issue of language endangerment and death, and the worldwide effort to document and conserve the world's languages. It then provides an orientation to the field of linguistics and an overview of the major subfields of the discipline.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **articulate the importance of language to human lives and society;**
- **discuss the ways in which language is a functional system of human communication;**
- **take an objective, descriptive approach to discussion of language-related issues;**
- **begin to identify fine details of linguistic structure;**
- **state basic demographic facts about the world's languages, including issues of language vitality and endangerment;**
- **state in what ways linguistics is scientific and objective;**
- **provide a brief overview of the major subfields of linguistics.**

1.1 Language

1.1.1 Language and You; Language and Us

Language *is an essential and ubiquitous component of our lives.* To see that this statement is true for yourself, take a moment to think about your day. Cast your mind back to when you first awoke. What were your thoughts and how were they expressed? Trace the day in your mind and try to count how many people you spoke with, even if it was just a quick "hi" or "thank you." Did you listen to a lecture? Watch television? Talk on the phone? Make an appointment? Sing a song? All of these activities centrally involve language. Now think about what you read today. Perhaps a newspaper, pages on the Internet, email, advertisements, labels, signs, homework assignments? Now move on to thought itself. What thoughts and ideas have passed through your mind? Have you made explicit plans, imagined conversations, debated with yourself? If you are like most people, this brief exercise has revealed that language is both within and around you, a constant part of your internal and external existence. Language is the primary medium which you use to interact with people and institutions in our society. Your particular use of language is also a reflection of who you are as an individual; all of us use language as a means to build and portray our identities in the world around us. We also use language to shape and interpret the great and small experiences of our lives.

SIDEBAR 1.1

You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website: www.cambridge.org/genetti2; the Glossary is located under "Tools"). Check your mastery of the vocabulary with the online vocabulary quizzes: one tests you from term to definition and the other from definition to term.

These vocabulary resources are available for every chapter in the book. The website also provides a study guide for each chapter, as well as chapter-specific materials, such as audio and video clips, how-to guides, and other useful tools. References to these resources and other useful websites will be indicated with a wireless icon: 

Think about the broader world in which we live. Language is the principal means by which societies are constructed and cultures are developed. Think of the size of our society's great libraries, and how the majority of the volumes in those vast collections (14.6 million volumes in the Harvard University Library alone) are language in its written form. The intellectual achievements of humankind are essentially embodied in language. Not only is this true of the written works that formally encapsulate our knowledge, but it is also true of the huge body of indigenous knowledge held by the speakers of thousands of languages across the globe, from the Brazilian Amazon to the Mongolian steppes. Some may argue that music and art are non-linguistic, but note that they often incorporate language, as with lyrics. Even works that do not contain language are interpreted and understood through verbal thought, discussion, and critical analysis. Similarly, mathematics could be argued to be non-linguistic, but again language is used to teach, understand, and interpret it.

Beyond the modern world, consider that language has been used by humans for at least 30,000 years, by thousands of groups across the globe, wherever humans have ventured. Speakers of each generation endow their language with their own unique mark, their own contribution, changing it in myriad subtle ways. As language passes from

generation to generation, it shifts and adapts to the ever-changing world in which it is embedded.

The preceding paragraphs emphasized that ***language is a pervasive and essential part both of your own life and of who we are as humankind***. The goal of this book is to begin to address the question: *How does language work?* It is a simple question, and one that most people never think to ask. Language is so automatic – almost like breathing – that most people don't realize the complexity that underlies it and the subtle and effortless skill with which they wield it.

The question *How does language work?* may itself be simple, but the answer is highly complex. It can be broken down into many smaller questions. To begin with, one must ask: *How do individual languages work?* We really can't understand the nature of language in its broad sense if we don't understand the mechanisms underlying particular languages, preferably of many and diverse kinds. Other key questions include: What are all the pieces of a language? How do the pieces combine and work together to allow for communication to occur? How are languages learned and transmitted? How do languages influence each other? How do languages change over time? These are but a small number of the many questions that define the field of **linguistics**, the scientific study of language. But before discussing the field in more detail, it is important to continue with our exploration of the nature of language.

1.1.2 Language Is Human and All That Implies

Language is a defining trait of humankind. Language is tied up with our thought processes, our ability to reason, to self-reflect, and to develop advanced civilizations. Other animal species have developed communication systems, but they pale in comparison to human language. A simple illustration of this is the fact that no system of animal communication appears to be able to communicate events that occurred in the past or events that are imaginary. Neither are there animal communication systems that have adverbs or other devices that allow for detailed descriptions of actions. Animals have nothing comparable in scale, complexity, subtlety, or adaptability to human language.

The fact that language is human has a number of important implications for the nature of language. Language is embedded into our physiology, our cognition, and our thought processes. Many of the details of linguistic structure are directly dependent on this. For example, the fact that no language makes sounds by curling the tip of the tongue back to touch the uvula (the small appendage hanging down in the middle of the back of the mouth) is directly explainable by the details of human anatomy. Less trivially, anatomical facts are also responsible for a number of features of sound systems, such as the common trend to pronounce a sequence of *t* and *y* as "ch" (e.g., *gotcha* from *got you*). More importantly, language processes are largely resident in the brain and so language shares characteristics with other cognitive functions; for example, language is both learnable and adaptable.

Humans use language for a wide variety of purposes. We communicate everything from urgent warnings to random thoughts, proposals of marriage to complaints. We use it to cajole, threaten, placate, inform, entertain, and command. In other words, language is

functional; it is a tool of human communication. The fact that language is used for a wide variety of tasks has direct implications for how it is structured. Linguistic structures are flexible and adaptable, able to express all that humans convey to each other in the course of a conversation, a day, a lifetime, a civilization.

Language is also human in that language is a form of human social behavior. It can be used to build or break social bonds. It serves as a social cue to the formality or informality of a situation, and to the degree of social intimacy or distance among the people speaking. When children acquire language, they do so by using it as a tool of social interaction within particular social settings. The social component of human language is also reflected in how language is used and structured.

Humans use language to interact, and using language is an inherently interactional task. Not only are we listening to our conversational partner and picking up on the many subtleties of word choice, sentence structure, rate of speech, and intonation, we are also constantly assessing when and how to take a turn, and how to communicate our message so that the person to whom we are speaking (the **addressee**) will correctly interpret what we are saying. To take a simple example, I wouldn't say *He is coming for dinner tonight* if I didn't think that the addressee had in mind the person I refer to as *he*. Otherwise, I could use a proper name like *Mike* or a more elaborate phrase like *the guy from across the hall*. I could also start off with an introduction, such as *You know that guy I was telling you about that owns the cocker spaniels?* All three of these strategies accomplish a similar end of introducing the idea of the person I wish to discuss into the mind of the addressee. Once I am confident that the addressee can identify the correct individual, I can communicate the primary message *He's coming to dinner tonight*. Thus, we see that the interactional component of language is both deep and subtle. The structures of human language reflect our interactional needs.

Humans are creative and language is structured to take advantage of human creativity. All languages are constructed in a way that allows for the creation of novel utterances; any language can produce an infinite number of sentences. Therefore we cannot describe a language by simply making a list of all the possible sentences it contains. Instead, our task is to describe the design principles underlying language that make that infinite number of sentences possible. Obvious instances of human creativity with language include word games, puns, and puzzles. Humans also use language creatively when they innovate new expressions or use one or more words in a new way. For example, the English word *way* has been used for some time to intensify the meaning of certain types of quantifiers (*way too much, way more than necessary*) or prepositions (*way up, way over*). Younger speakers of some English dialects can now use this intensifier with adjectives; e.g., *way cool*. The use of *way* with adjectives can have specific affective (emotional) implications, e.g., *way unfair*. We don't know who first used *way* to intensify an adjective, but in doing so that person was performing a creative act, using the word in a new grammatical environment. People do this every day. Most of the time grammatical innovations are not repeated, but sometimes particular innovations catch on. Other speakers hear the innovation and use it themselves, spreading it wave-like across a significant portion of the **speech community**, a group of people who share a common language or dialect and cultural practices. If an innovation continues to spread, it could become a regular feature of the language and constitute a

language change. Many instances of language change are direct reflections of human creativity.

To summarize, just as language is deeply a part of humankind, the human element is deeply a part of language. The structures of language take the form they do because language is instantiated by the human body, as a tool of human communication, and is embedded in human interaction within societies and cultures. Language is at the core of what it is to be human, and humanity is at the core of language.

1.1.3 Language Is Dynamic and Adaptable

Language is in a constant process of change. The language you speak with your friends today is somewhat different from the way your grandparents spoke to their friends when they were your age. Chances are good that your own grandchildren will probably think that your speech sounds a little old-fashioned. While the difference between grandparents and grandchildren may not be dramatic, over a longer time span, for example, that between oneself and one's grandchildren's grandchildren's grandchildren, the cumulative effect of those generations becomes more noticeable. We can see this in the history of English. Consider the following passage, written by William Shakespeare just over three hundred years ago, and taken from the play *King Henry V*:

> Now, fie upon my false French! By mine honour in true English, I love thee, Kate: by which honour I dare not swear thou lovest me; yet my blood begins to flatter me that thou dost, notwithstanding the poor and untempering effect of my visage.

While educated English speakers will be able to understand this passage, children and adults with less formal education will find it difficult. It is easy to identify the linguistic features that mark this as archaic: the use of the old second-person familiar pronouns, *thee* and *thou*; the inflected verb forms *lovest* and *dost*; and the use of now antiquated words and expressions, such as *fie upon* and *visage*. When we look further back, for example at *The Canterbury Tales*, written by Geoffrey Chaucer more than six hundred years ago, the language becomes even harder to decipher. Consider these lines from "The Wife of Bath's Tale":

SIDEBAR 1.2

There are a number of websites that provide translations of Shakespeare into Modern English, including *No Sweat Shakespeare* (www.nosweatshakespeare.com). If you want to look up this passage, it is in Act V, Scene II.

> And if thou kanst nat tellen it anon
> Yet shal I yeve thee leve for to gon
> A twelf-month and a day to seche and leere
> An answere suffisant in this mateere;
> And suretee wol I han, er that thou pace,
> Thy body for to yelden in this place.

While some of it seems familiar and suggestive of meaning, much is unclear to the eye of the untrained modern English speaker. The passage is easier to decipher if one learns that *yeve* means 'give,' *seche and leere* means 'search and learn,' *suretee* means 'certainty,' and *yelden* means 'surrender.'

STOP AND REFLECT 1.1 **TRANSLATING OLD ENGLISH TO MODERN**

Try providing a modern English translation of the lines from "The Wife of Bath's Tale," and compare it with that given in Textbox 1.1.

TEXTBOX 1.1 **MODERN ENGLISH TRANSLATIONS OF *THE CANTERBURY TALES***

Here is one translation of the excerpt from "The Wife of Bath's Tale," provided by the online bookshop *Librarius* (www.librarius.com/canttran/wftltrfs.htm):

> And if you cannot tell it me anon, then will I give you license to be gone a twelvemonth and a day, to search and learn sufficient answer in this grave concern. And your knight's word I'll have, before forth you pace, to yield your body to me in this place.

Of course, you would never speak this way to someone in a conversation today. A more colloquial current translation might be "And if you can't tell me soon, then I'll give you permission to be gone for a year and a day, to find the right answer to this important question. I'll have you promise as a knight, before you leave, that you will give me your life in this place."

All aspects of language can undergo change. Sounds can enter a language or fall out of use. Sentence structures can shift in interesting ways. Words can develop into prefixes, suffixes, or other small linguistic units. Word meanings can be broadened, narrowed, or otherwise shifted. The social implications of using particular words and phrases can change over time, as can larger patterns, such as how we structure and present information.

Language adapts to the world around it. Think of all the vocabulary you use in daily life that your grandparents did not use when they were your age. The words *email, nanotechnology, cell phone*, and *internet* are just a few of the terms that reflect the technological changes that swept over us in the late twentieth century. In the meantime, words like *hogshead* (a large cask or barrel) and *demijohn* (a narrow-necked bottle enclosed in wicker) are not part of the vocabulary of most people living today (although they might persist in certain subgroups of the population). Changes in vocabulary can reflect social changes as well. The English word *spinster*, meaning an unmarried woman past the age of marrying, has vanished from everyday vocabulary in most of modern society, together with the idea that there is an age of marrying and that marriage and family are the primary goals of a woman's life.

While changes in vocabulary reflecting innovations or social change are probably the most obvious examples of the adaptability of language, languages also undergo adaptations under the influence of **language contact**. When speakers of two distinct languages interact with each other in large numbers over a period of time, one or both languages generally undergo change. An example of a language affected by language contact is English, which adopted huge numbers of words from French after the Norman invasion. Indeed, in the sentence you just read, the words *example, adopt, huge, number, French, Norman*, and *invasion* all came into English from French!

Language contact can have a much greater effect than simply adding new vocabulary. Sounds, word structures, and sentence structures can also take on qualities of adjacent

languages. For example, in the Tibeto-Burman language family (comprising over three hundred related languages distributed over Southeast Asia, Tibet, and the Himalayan region), the majority of languages place the verb at the end of the sentence. A simplified and translated version of a sentence with this word order might be, for example, *John apple ate*. However, there is one group of Tibeto-Burman languages, the Karenic group, which places the verb in the middle of the sentence. Thus, they would say *John ate apple*. Interestingly, speakers of the Karenic languages have been interacting for centuries with the Thai and the Chinese, and both groups speak languages that put the verb in the middle. It is clear that over the centuries, **bilingual** Karenic speakers matched their sentence structures to those of their neighboring languages. Thus, a significant change to Karenic grammar resulted from language contact through the medium of bilingualism. We see that languages adapt not only to the changing technological world but also to the broader social environments in which they are embedded.

1.1.4 Language Is Structured and Systematic

When one begins to look closely at language, one is immediately struck by the fact that ***regular and recurring patterns form the basis of linguistic structure***. To begin to explore this aspect of language, take a moment to work through the following small exercise on English grammar:

Regular Patterning of the English Past-Tense Suffix

In English most verbs have a predictable past-tense form. It is written as *-ed* but has different pronunciations. You can discover this in your own speech very easily. Pronounce the following lists of words and listen closely to the sound at the end of each word:

List A: *baked, blessed, heaped, puffed, crashed*
List B: *rubbed, waved, lagged, billed, hummed*
List C: *waited, faded, booted, coded, righted*

If you are a native English speaker and have a sensitive ear, you will have noticed that the words in List A end in <t>, the words in List B end in <d>, and the words in List C end in <ed>. We can now refer to these as the T-List, the D-List, and the ED-List.

Now try pronouncing the following three nonsense words, again listening carefully to how the suffix is pronounced in each word:

Word 1: *smipped*
Word 2: *croomed*
Word 3: *pluted*

Notice that you don't have to think for an instant which sound to put at the end, but that you automatically end Word 1 with <t>, Word 2 with <d>, and Word 3 with <ed>, even though these are nonsense words which you are unlikely to have ever heard or pronounced before.

Take a minute to examine the consonants that directly precede the suffix (i.e., the "pre-suffixal" consonants) in the T-List words. Now compare the pre-suffixal consonants in the D- and ED-List words. Notice that the lists are distinct; you don't find any of the T-List

pre-suffixal consonants in D-List words, etc. Now determine which lists Words 1–3 fall into, based on their pre-suffixal consonants.

You will see that Word 1 has a T-List consonant (p) and the suffix is pronounced as <t>, Word 2 has a D-List consonant (m) and the suffix is pronounced as <d>, and Word 3 has an ED-List consonant (t) and the suffix is pronounced as <ed>. You have discovered a systematic fact of English: the pronunciation of the past-tense suffix depends upon the pre-suffixal consonant. Even though Words 1–3 are nonsense words, they still follow the systematic patterns of pronunciation that form a significant part of the English language. We can state this pattern as follows:

(1) In English, the past tense *-ed* will be pronounced: as <t> following the consonants <k, s, p, f, sh>, as <d> following <b, v, d, l, m>, and as <ed> following <t> or <d>.

STOP AND REFLECT 1.2 **ALTERNATE PRONUNCIATIONS OF THE ENGLISH PAST-TENSE SUFFIX**

The statement in (1) is only part of the pattern, as not all possible consonants are exemplified. The lists for two of the groups are actually much larger than shown here. Can you determine which two groups these are?

This is a statement of a pattern or systematic fact of English (sometimes referred to as a rule). One can predict how the past tense *-ed* will be pronounced on any English verb as long as one knows the pre-suffixal consonant.

Once we have observed a regular pattern in language, we ask the question: *Why should this pattern occur?* This question is critical, because it takes us from recognition and description of a pattern to a search for an explanation of the observed facts. In this case, the explanation is physiological, based on how we produce sounds in our vocal tracts. Since this is a topic covered in the next chapter, we will not go into detail here. The important point is that ***patterns in language can be explained by the function of language as a system of human communication***. In this case, the explanation comes from the embedding of language in our human physiologies; in other cases, other aspects of the functional role of language explain linguistic patterns.

Regular patterns such as this occur in every language many times and at many levels. Some patterns are concerned exclusively with sounds, other patterns are found at other levels, such as word structure or sentence structure. One of the fascinating aspects of language is the interaction of these patterns, which at times can be quite complex. All the patterns in a language that explicitly involve sounds make up the "sound system" or **phonology** of a language; the patterns which involve word structure make up the **morphology**, while the patterns which involve sentence structure make up the **syntax**. Each of these subsystems of language is independent, but each is also interwoven with the others. In the example above, both the phonology (in this case, which sound is pronounced where) and the morphology (the past-tense suffix *-ed*) are involved. The morphology and syntax of a language are together referred to as the language's **grammar**. For further discussion of the sub-areas examined in linguistic analysis, see Textbox 1.2.

TEXTBOX 1.2 **LINGUISTIC ANALYSIS**

Many examples of systematicity in language will be presented throughout the following chapters. One of the goals of this book is to teach you how to recognize and analyze systematic patterns in a wide variety of languages, that is, how to perform **linguistic analysis**. This requires learning the common – and sometimes the rare – linguistic categories that are found in the languages of the world, the terminology that accompanies those categories, and the theories underlying them. Linguistic analysis requires logical thought, a clear understanding of linguistic concepts, and concise description and argumentation.

Once linguistic structures are accurately described, the analysis is completed by explanation. The critical question is: *What motivates the linguistic structures to be formed in precisely that way?* This question goes to the very core of linguistic theory. The answer will depend crucially upon the particular structure being explained. There are a number of distinct domains that may contribute to it, including meaning (**semantics**), how the structure is used in context (**function**), factors related to history (**language change**), the physical properties of sound (**phonetics**), and the structure of the human brain and how we learn and process knowledge (**neurology**, **cognition**).

On the other hand, no language is perfectly systematic. Although there are sometimes patterns within patterns within patterns, there are often pieces that don't fit into any regular pattern, but which have idiosyncratic, or irregular, behavior. This is in large part due to language change. The irregularities are leftovers from older patterns that have been obliterated, as new structures emerge and spread through the language.

As an example, consider the English verb *shine*. This verb is a bit irregular as it has two forms of the past tense, *shined* and *shone*. The form *shined* is constructed by adding the regular past-tense suffix to the verb stem and following the rule of past-tense formation we just discovered (*shine* ends in a D-List consonant). The form *shone* is a reflection of an old pattern where past tense was indicated by changing the vowel in a verb's root. This pattern was inherited from an earlier stage in the language. It has largely died out, but traces of it remain in a handful of verbs, especially those that are used frequently and are therefore resistant to change (for example, *take/took, drive/drove*). In the development of English, the marking of past tense by *-ed* gradually spread through the vocabulary, supplanting the older forms. This process has not been completed with the verb *shine*, and both past-tense forms coexist in the modern tongue. Thus, this irregularity of the language has a historical explanation. Irregularities in language usually result from language change.

1.2 Languages

1.2.1 Languages of the World Today

Languages are spoken – and signed (see Textbox 1.3) – across the globe. People are spread over the earth from the tip of Tierra del Fuego to the Arctic North, and wherever there are people, there are languages. Think for a minute about each of the continents and their communities. How many languages do you think there are in the world?

TEXTBOX 1.3 **SIGN LANGUAGES**

Sign languages are natural languages that have arisen wherever deaf people have come together to form a community. *Ethnologue* (2016) lists 138 sign languages in the world. Like spoken languages, sign languages are structured, systematic, change over time, and can be used to communicate all the complex concepts that people convey to one another over the course of a lifetime. Like spoken languages, many sign languages are endangered and need people to document them.

The question is more difficult than it first appears. The truthful answer is that we don't have an exact count, although we are able to make an educated guess. There are two primary reasons why counting up languages is tricky. One is that linguists haven't identified all the languages of the world yet. There are still speech (and sign-language) communities that follow their traditional ways of life and who have had little interaction with larger population groups or researchers. The languages of these groups are still undescribed. However, there is also a more fundamental problem in counting up languages, which is that it is difficult to decide which speech varieties should be counted as languages and which should be counted as dialects of a single language.

Let's consider possible criteria for distinguishing languages from dialects. One obvious place to start is **mutual intelligibility**: Can the speakers of the two language varieties understand each other? The criterion of mutual intelligibility, taken to its logical conclusion, suggests that if they can understand each other, the two varieties are to be considered dialects of a single language; if they cannot understand each other, the varieties are to be considered distinct languages. One problem with this criterion is that there are often multiple varieties of a language, and while speakers of adjacent varieties can understand each other, speakers of geographically separated varieties have a much harder time. This situation is schematized in Figure 1.1:

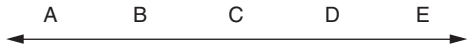


Figure 1.1 Schematization of language varieties

In Figure 1.1, each letter represents speakers of different varieties and the arrow represents geographic distance. While speakers of A might easily understand speakers of B and C, it might take effort to understand speakers of D, and it might be quite difficult to converse with speakers of E. Similarly, speakers of E might have no problem speaking with those of D and C but might have more difficulty with speakers of A. So, are A and E different languages? If so, where does one draw the dividing line? This situation is known as a **dialect continuum**, and it represents a common situation throughout the world.

SIDEBAR 1.3
For an example of a dialect continuum, see the Seneca Language Profile, Section LP13.1.

Of course, Figure 1.1 is highly idealized. Communities aren't usually ranged along a straight road with distinct boundaries, and there is often movement and intermarriage

between the various groups. However, the problem remains of whether mutually unintelligible A and E should be counted as one or two languages. We can see that the question itself is overly simplistic and obscures the more complex reality of the dispersion of language varieties and their speakers.

Another problem with the criterion of mutual intelligibility is the word "mutual." This implies that speakers of both speech communities are equally at ease or equally perplexed when hearing the speech of the other. However, there are many cases of unidirectional intelligibility, that is, speakers of Group A can understand the speech of Group B, but not the other way around. This situation especially occurs when the Group A variety is spoken by a minority group and the Group B variety is a **standard language**, taught in schools and used in print and broadcast media. In this situation, the Group A speakers have repeated exposure to the B variety and so can understand it. The Group B speakers, on the other hand, may never have heard the speech of Group A, so they find it surprising and difficult. It is not always clear whether these varieties are different dialects or different languages.

Another reason for the difficulty in counting up languages is that there is a complex relationship between language and ethnic identity. Consider the case of the Newars, an ethnic group which traditionally ruled the Kathmandu Valley in Nepal. While the largest concentration of Newars is in the Kathmandu Valley itself, there are other Newar communities scattered throughout the country. One variety of Newar is spoken in a village called Dolakha, quite a distance to the east. The Dolakha and Kathmandu speech varieties are truly mutually unintelligible. People from these two Newar communities cannot speak to each other in Newar but must use the national language Nepali to converse. If the question of language versus dialect were to be based solely on mutual intelligibility, then these two varieties would count as separate languages. However, the Dolakha Newars are ethnically Newars in every sense of the word. They have the same customs, social structures, festivals, and traditions, and they intermarry with Newars from other parts of Nepal. Crucially, their language, even though mutually unintelligible with the other varieties, still serves to distinguish the group ethnically from non-Newars, so it is a marker of Newar ethnic identity. The language is thus Newar in a very real and relevant sense to the speakers of the language itself. The function of the language as a marker of ethnic identity would suggest that the Dolakha variety is a Newar dialect, not an independent language. The criteria of mutual intelligibility and ethnic identity thus lead us to different conclusions on the question of language versus dialect.

The opposite situation can be found with Swedish and Norwegian, two of the Scandinavian "languages." These two speech varieties are easily mutually intelligible. However, a national boundary and ethnic identity divide the two groups; hence, they are considered to speak distinct languages rather than dialects of a single language. Such circumstances motivated the famous quip by the Yiddish linguist Max Weinreich: "A language is a dialect with an army and a navy." Sociopolitical and ethnic considerations clearly have significant weight in the language/dialect debate.

SIDEBAR 1.4
For more discussion of the terms **dialect** and **language**, see Section 11.2.2.

While acknowledging that there are inherent difficulties in counting up the languages of the world, we still want to know roughly how many there are. The most current compilation

Figure 1.2 Newars at the temple complex in Patan, Nepal

TABLE 1.1 Distribution of languages across continents

Area	Number	Percentage
Africa	2139	30.1
The Americas	1062	15.0
Europe	287	4.0
The Pacific	1313	18.5
Asia	2296	32.4
Total	7097	100.0

of statistics on the world's languages is found in *Ethnologue: Languages of the World* (available online at www.ethnologue.com). My source for the statistics in the following discussion is the internet version of the nineteenth edition (Lewis et al. 2016), which puts ***the total number of known languages at 7,097***. How close was that to your own estimate?

The distribution of languages across continents is given in Table 1.1 (note that "the Americas" include North, South, and Central America, and "the Pacific" includes Australia,

TABLE 1.2 Number of languages by size of speech community

Number of speakers	Number of languages	Percentage
100 million to 1 billion or more	8	0.1
10 million to 100 million	84	1.2
1 million to 10 million	306	4.3
100,000 to 1 million	944	13.3
10,000 to 100,000	1808	25.5
1,000 to 10,000	1979	27.9
100 to 1,000	1070	15.1
10 to 99	337	4.7
1 to 9	132	1.9
0	220	3.1
Unknown	209	2.9

New Zealand, and the Pacific Islands). Table 1.1 shows the number and percentage of the world's languages spoken or signed on each continent.

Note that the languages of Europe account for only 4 percent of the total number of languages of the world, while Asia and Africa have more than 30 percent each.

Table 1.2 presents statistics on the world's languages in relation to the size of the speech communities of native speakers.

Table 1.2 shows that there are very few languages with very large numbers of speakers; only 5.6% of the world's languages have more than a million speakers. On the other hand, 53% of the world's languages have fewer than 10,000 speakers. When we combine these numbers with population statistics, the results are quite striking. ***Roughly 94% of the world's population speaks only 6% of its languages. The remaining 94% of the languages are spread over only 6% of the population.*** Thus, we have a handful of languages with enormous speech communities and a very large number of languages with quite small speech communities.

1.2.2 Languages of the World Tomorrow

While there are around 7,000 languages spoken or signed on the globe today, not all languages are equally robust. Over time patterns of language use in multilingual communities can shift so that a socially dominant language comes to be used more frequently and less-dominant languages are used in fewer social contexts and among fewer people. Such languages are described as **endangered**, at risk of ceasing to be spoken in the absence of conscious efforts to keep them vital. According to *Ethnologue*, ***about 35 percent of the***

world's languages can be classified as losing speakers or being further along the endangerment process.

The endpoint of the language endangerment process is **language death**, which occurs when a language ceases to have speakers and no longer serves as a symbolic marker of identity for the community. Normally the process of endangerment occurs gradually, over three or more generations. It involves a cessation in **language transmission**, the passing on of a language from one generation to the next. When children don't learn the language, the only remaining speakers are adults. That population naturally ages and declines until only a handful of speakers remains. In the absence of community efforts to reverse the trend, the language can cease to be spoken. If it ceases to be a cultural resource for the community, it is classified as extinct. (For a discussion on what is lost when a language ceases to be spoken, see Textbox 1.4.)

TEXTBOX 1.4 **WHAT IS LOST WHEN WE LOSE A LANGUAGE?**

Does language death matter? Linguists and members of many speech communities answer with a resounding "yes." Each language is a testament to the ways in which a unique group of people has understood and interacted with their environment and has come to terms with the human condition. Each is a unique inheritance from countless generations of forebears, the encapsulation of their wisdom and knowledge. Each language reflects and instantiates the culture of the speakers. Each contains knowledge, traditions, and history. Each represents what a language can be and so enriches our understanding of this central aspect of our humanity.

"Surely, just as the extinction of any animal species diminishes our world, so does the extinction of any language. Surely we linguists know, and the general public can sense, that any language is a supreme achievement of a uniquely human collective genius, as divine and endless a mystery as a living organism. Should we mourn the loss of Eyak or Ubyky any less than the loss of the panda or California condor?"

(Professor Michael Krauss, Alaska Native Languages Center)

There are a number of reasons why languages become extinct. Sometimes the process of language death has been brought about by explicit government policies designed to keep children from learning their native language. However, language extinction is not limited to communities targeted by such policies. Language endangerment and death appear to be primarily fueled by the broader process of globalization, including a shift from agrarian to urban lifestyles, and the increasing dominance of a small number of languages for the purposes of commerce, education, and the media. These include both the truly widely spoken languages, like Mandarin Chinese, English, Spanish, Hindi-Urdu, and Arabic, and smaller national languages, like Nepali, Greek, Georgian, and Thai. Often acquisition of such languages is necessary for anyone wanting to pursue an advanced education or a career in modern society. Thus, parents are under pressure to have their children educated in these languages and therefore choose to transmit these languages as opposed to those of the heritage communities.

Another element that can contribute to the loss of a language is the loss of the coherence and vitality of the speech community. If the members of a small speech community become

Figure 1.3 Members of the Gusii community in Kenya record traditional songs and dances as a component of their documentation of the Ekegusii language and Gusii culture (photo by Kennedy Bosire)

absorbed into a larger group through intermarriage, the community can become dispersed. Where there is no viable speech community, there is little reason to pass the language on to the children; neither will the children hear the language spoken with sufficient frequency to acquire it.

The recognition of the scope of the problem of language endangerment has led to significant work by members of endangered-language speech communities and linguists to record, preserve, and revitalize languages. **Language documentation**, the creation of an extensive record of a language and its community, is an important part of this process. **Language conservation** is also being undertaken in many communities, which are developing materials to be used in the education of children and to promote language use in the speech community. **Language revitalization** is undertaken by speech communities whose language has been entirely lost or significantly reduced. Such projects can do much more than simply teach the language; they can play significant roles in strengthening communities and in promoting the preservation of traditional knowledge, practices, cultural values, and institutions.

1.3 Linguistics

1.3.1 The Scientific Study of Language

Now that we have learned a bit about language and about the world's languages, we turn at last to the topic of linguistics. ***Linguistics is the scientific study of language***. By

"scientific," we mean that the study is both **empirical** (based on observable data) and **objective**. Empirical data is critical for any scientific discipline, as it ensures that others can verify or replicate the findings. The term **linguist** refers to a person who examines the structures and principles underlying languages. Note that this is different from a **polyglot**, a person who speaks many languages. For more on this distinction, see Textbox 1.5.

TEXTBOX 1.5 **LINGUIST VERSUS POLYGLOT**

The longer you study linguistics, the more likely it is that someone will ask you the question: "How many languages do you speak?" This question illustrates the commonly held misconception that linguists are polyglots. It is important to distinguish between the two. A linguist is a person who examines the structures of languages and the principles underlying those structures. A polyglot is a person who speaks many languages. Many linguists are, indeed, polyglots, but you don't have to be a polyglot to study linguistics. A nice analogy can be made to pilots and airplane mechanics. A pilot knows how to fly an airplane, based both on training and on an instinctive sense of flight and how a plane responds to a particular manipulation of the controls. An airplane mechanic looks inside a plane and knows how each part contributes to the workings of the whole. One doesn't need to be an airplane mechanic to be a pilot. Neither does one need to be able to fly a plane in order to be a mechanic. A linguist is like a mechanic, looking inside to see how the parts of the language fit together so that the language can function in human communication. The speaker is the pilot, able to use the language efficiently and effectively, but without necessarily knowing how it works.

Probably the best airplane mechanics are also pilots, and in the same way, the most insightful analysis of the language will come from someone who speaks it, but a linguist can make a tremendous amount of headway on the analysis of a language without speaking it.

In linguistics, empirical data are recordings of spoken or written language, collected into a corpus. The nature of the recordings and how they are collected will depend on the goals of the study. For example, if one wishes to study the physical properties of sounds, the best recordings might be those produced in the isolation of a sound booth. If one wishes to study sentence structures and how they are used, the best recordings are likely to be natural conversations or narratives, supplemented by the comments of native speakers that reflect their intuitions about the structures and their meanings in that particular context. If one is studying language and society, one might choose to make video recordings of authentic interactions. In any case, recorded data, preferably of speech or writing produced in a natural setting, and not constructed by or for a linguist, are the most highly empirical and can be verified by subsequent researchers. This is not to say that this is the only type of useful data in linguistics. Speakers' intuitions about their language, particularly regarding subtle distinctions in meaning, add a depth to our understanding that we could not possibly obtain otherwise.

SIDEBAR 1.5
Not all languages have writing systems; see the brief discussion of the status of unwritten languages in the Seneca Language Profile, Section LP13.2.

When we say that a science is objective, we mean that our analysis is not biased by any preconceived notions, or judgments of "good" and "bad." Human beings are prone to prejudice, and this can be directed at speakers of languages just as it is directed at ethnicities,

religions, sexualities, styles of dress, or any other characteristic by which people are subgrouped. It is not uncommon to find languages described as "primitive," "corrupt," "illogical," "ugly," or just plain "bad." By contrast, other languages can be described as "perfect," "logical," or "beautiful." To take an example from the United States, some speakers of American English believe that the dialect of English spoken in certain African-American communities (referred to as African-American English, or AAE) is "corrupt" or "ungrammatical." People with this view cite AAE sentences like *She sick* and *She be sick*, and claim that they are "incorrect," since they differ from the Standard American English sentence *She is sick*. In actuality, AAE is making a grammatical distinction in these two sentences that is not marked in the grammar of Standard American English. The sentence *She sick* refers to a present situation; it simply states that the person is sick now. This sentence could be used, for example, to explain why someone is unexpectedly absent. The sentence *She be sick* means that she is often sick or has a long-term illness. The implication is that the illness is ongoing and lasts for an extended period of time. This meaning distinction between a present state and an ongoing state is systematically made by the grammar of AAE (as well as by many other languages in the world). Of course, speakers of Standard American English can still signal this meaning if they want to, for example, by using an adverb such as *always*, but its use is not grammatically required. This doesn't mean that AAE is any "better" than Standard American English; the two dialects are just different. ***Every language or dialect is unique in the types of distinctions it makes. Every language is equally able to convey all of the complex meanings that humans communicate to each other in the course of a lifetime***. Languages differ in which distinctions they grammatically require their speakers to make, and in which meanings can be expressed by other, non-grammatical, means.

SIDEBAR 1.6
See the African-American English Language Profile (LP11) for an extensive discussion of this dialect.

An important distinction can be made between prescriptive and descriptive approaches to language. A **prescriptive** approach to language is one that teaches people the "proper way" to speak or write. Many children are exposed to prescriptive grammar in school, where they are taught, for example, not to split infinitives (e.g., *to boldly go*) or to end a noun phrase with a preposition (e.g., *the man I saw you with*). Prescriptive grammarians choose a set of forms that they enjoin others to adhere to. These forms represent a (slightly) older stage of the language when the rules were regular, so the establishment of prescriptive rules reflects a resistance to the natural forces of change. In actuality the set of forms chosen for prescription are ultimately arbitrary; there is no logical reason why one should not split an infinitive or end a sentence with a preposition. Prescriptive rules may still have social ramifications, however, and there are environments (such as academic writing) where ignoring these conventions can have negative social consequences (such as lower grades).

A **descriptive** approach to language is one that describes how people actually use language. Descriptivists are not interested in telling people what is right or wrong, but in observing, describing, and explaining actual linguistic behavior. In line with the objective nature of linguistic science, linguistics is a descriptive enterprise.

1.3.2 Fields of Linguistics

The field of linguistics is as broad and multifaceted as language itself. The following paragraphs provide a very brief orientation to the primary subfields of the discipline. As in the rest of this book, this presentation will take the traditional hierarchical approach to language, beginning with the smallest units and working up to larger and larger levels.

We will begin with the study of speech sounds. The physical properties of sounds – how they are articulated and perceived, and the acoustic signatures of the sounds themselves – are the subject of study in the field of **phonetics**. We will then examine the systematic use of speech sounds in language, or **phonology**.

STOP AND REFLECT 1.3 **VOWEL-LENGTH DIFFERENCES**

Try saying the English words *lack* and *lag*. If you pay attention to your mouth and listen carefully, you will notice that the vowels in these words are produced with the same tongue position, but that the vowel in *lack* is a bit shorter than that in *lag*. This is a phonetic observation, which could be verified by measuring the vowel durations in an acoustic display on a computer screen. Now say *lake/leg, pick/pig*, and *lock/log*; you will find that the vowel is always shorter before /k/ and longer before /g/. The same pattern is found before /p/ and /b/ (*lap/lab*) and /t/ and /d/ (*fat/fad*). We see that these sounds pattern in a systematic way. Such systems of sounds form the phonology of a language.

From the study of sounds we move to the study of words themselves. The ways in which words are structured and created are the purview of the field of **morphology**. Morphologists look at all the pieces of words (roots, prefixes, suffixes, etc.), their sounds and meanings, and the principles of their combination. The study of how words combine into phrases, clauses, and sentences is the study of **syntax**. Morphology and syntax are tightly integrated and are often referred to as **morphosyntax** or (in some uses) **grammar**.

STOP AND REFLECT 1.4 **MARKERS OF NEGATION**

Languages differ in how they mark negation. In some languages, markers of negation are independent words (English *not*, Italian *non*), while in others they are prefixes (Dolakha Newar *ma-na* 'didn't eat'), suffixes (English *didn't*), or a combination (French *n'est pas*). Think of another language that you are familiar with. Is negation marked by an independent word or an affix?

Languages also differ in the number of negation markers they have. Wayampi, a language of northern Brazil, has four markers of negation. The study of the forms, meanings, and uses of these markers falls under the field of morphology.

A critical aspect of language that interacts with all of these levels is **semantics**, meaning in language. The study of semantics includes the study of word meanings (**lexical semantics**) and the study of how meanings combine in clauses and sentences (**propositional semantics**).

When we look at how speakers use linguistic structures in larger stretches of speech, we are studying **discourse**. This field takes into account the interactional nature of language, for example, how speakers need to present their ideas in a way that allows hearers to understand them. With the help of computers, linguists can now look at statistically significant

patterns over very large sets, or **corpora**, of discourse data; this methodology is referred to as **corpus linguistics**. The role of the broader context in interpreting linguistic form and meaning is examined in the field of **pragmatics**. A large part of the context of speech comes from its embedding in the society and culture of its speakers. This field of study is **sociocultural linguistics**.

STOP AND REFLECT 1.5 **CONVEYING AND INTERPRETING SOCIAL MEANINGS**

You are studying in the library. Two people come in talking loudly. They sit at the table next to you and continue to talk loudly about the party they went to. They ignore your glares and those of other people in the room. Finally you say, *"Hey, could you speak up? I missed that last part."* How is it that the people can interpret this as a request to be quiet? The answer lies in the field of pragmatics.

The field of **historical linguistics** examines how languages change over time. This historical perspective can be applied to all levels of language: sounds, words, structures, and meanings. Historical linguists are also interested in determining which languages are related and how they have descended from a mother language, which was spoken in the distant past (see Textbox 1.6 for one such example). But languages don't evolve in isolation. Instead, they often influence each other as their speakers interact over time. The study of such **language contact** is a subfield of historical linguistics.

TEXTBOX 1.6 **HISTORICAL LINGUISTICS SHEDS LIGHT ON PREHISTORIC MIGRATIONS**

Historical linguistics can tell us much about human prehistory. In many cases, we can trace how populations have migrated across the globe. For example, most of the languages of the Athabascan family are spoken by native communities located between the Yukon region of Alaska down the Pacific coast of North America to northern California. However one branch of the family, which consists of Apache and Navajo, is spoken in the southwest of the United States. Linguists were able to use principles of historical linguistics to discover that the Apachean languages are, indeed, members of the Athabascan family, and to therefore deduce that speakers migrated from the Pacific Northwest to the American Southwest in a prehistoric time period.

Our linguistic capabilities are critically embedded in our neurology and our ability to think. The field of **language and the brain** examines the physical and neurological basis of language, while **cognitive linguistics** looks at how language is instantiated by our broader cognitive processes. A related field is **language acquisition**, which studies how language is learned by children (**first language acquisition)** and by adults (**second language acquisition**).

Computational linguistics is a field at the intersection of linguistics and computer science that deals with the statistical or rule-based modeling of natural language. It is concerned with applying methods from artificial intelligence and machine learning to problems involving language. The recent acceleration of our technological abilities has led to a greater application of computational methods to a wide range of linguistic questions, such as how languages are learned.

TEXTBOX 1.7 ORDERINGS OF SUBJECTS, VERBS, AND OBJECTS ACROSS THE GLOBE

When we look at sentence structures across languages, we notice that languages differ in the relative ordering of the subject (*Chris* in *Chris ate the apple*), the object (*the apple*), and the verb (*ate*). There are six logically possible orderings of these three categories:

Subject-Object-Verb
Object-Subject-Verb
Verb-Subject-Object
Subject-Verb-Object
Object-Verb-Subject
Verb-Object-Subject

However, all six orderings are not equally instantiated in the world's languages. A famous study of these orderings found that languages which put the subject first are very common, those that put the verb first are much less common, and those that put the object first are very few indeed. Why this should be, and the theoretical implications of this fact, is a question addressed in linguistic typology.

We find languages throughout the world. The field of **linguistic typology** looks at how the world's languages are similar and different. See Textbox 1.7 for an example of this. Typologists are interested in developing a classification of languages based on how they are structured, and in looking for relationships between certain structural language types.

There are many applications of linguistics to situations in the world around us. The field of **applied linguistics** includes a number of subfields, including language teaching and **forensic linguistics**. Recently, there has been a strong move toward **language documentation**, the creation of a record of a language that can be used by speech communities and others in the face of possible endangerment or language death. Of course, linguistics is also a key part of the field of **speech pathology** and **speech and hearing sciences**. Thus, the study of linguistics can lead to a wide range of careers, as discussed in Textbox 1.8.

This list of subfields of linguistics is fairly representative but is certainly not exhaustive. While we will not be able to touch on all of these fields in this book, we will cover most of them. The fields are diverse enough that there is usually something to interest everyone, and some readers will find that they are interested in everything.

TEXTBOX 1.8 LINGUISTICS AS A GATEWAY TO CAREERS

Because language is a pervasive aspect of human life, a degree in linguistics can lead to a wide variety of careers. Linguistics majors develop important professional skills that would be valued by any employer: data analysis, reasoning, argumentation, communication, writing, cultural sensitivity, and an appreciation of diversity. Many linguistics students also gain experience in teamwork, collaboration, and leadership, and many speak multiple languages.

A background in linguistics is especially well suited for speech pathology (which trains speech therapists to work with children or adults with speech disorders), language teaching, and speech technologies. Linguistics students also go on to careers in translation, education, law, government, journalism, publishing, lexicography, and a wide variety of industries, including marketing and data analytics. Many students also go on to doctoral study in linguistics, anthropology, psychology, or related fields, which opens the door to research and teaching at the college and university level, in addition to the careers listed above.

CHAPTER SUMMARY

Human languages are complex, structured, and dynamic systems of human communication, which change over time under a variety of influences. While it is impossible to exactly count the number of languages of the world, our current estimate is in the range of 7,000. However, these are not evenly distributed, as most of the world's population speaks one or more of a small number of dominant languages, while a small percentage of the population speak one of many languages with comparatively few speakers, many of which are endangered.

Linguistics is the scientific study of language. It is empirical and objective. Linguists seek to describe succinctly the structural properties of languages, and to understand their interactions, how they change, and how they serve the broader functions of language as a tool of communication that is embedded in human physiology, cognition, interaction, society, and culture. Explaining how individual languages work and how language works more broadly constitutes the aim of linguistic theory.

SUGGESTIONS FOR FURTHER READING

Baker, **Anne**, **Beppie van den Bogaerde**, **Roland Pfau**, and **Trude Schermer** (eds.). 2016. *The linguistics of sign languages: An introduction*. Amsterdam and Philadelphia: John Benjamins.

This is an introductory textbook that introduces the linguistics of the sign languages of the world. It provides a comprehensive overview, from phonetics and phonology through syntax, discourse, psycholinguistics, language change, and bilingualism.

Deutscher, **Guy**. 2005. *The unfolding of language*. New York: Metropolitan.

This book is an entertaining exploration of how languages change and evolve through the forces that shape human language.

Evans, **Nicholas**. 2010. *Dying words: Endangered languages and what they have to tell us*. Chichester, West Sussex: Wiley-Blackwell.

This book illustrates the richness of knowledge inherent in human languages, the implications of diverse linguistic systems for our understanding of the mind, and what is lost when a language becomes extinct.

Lewis, **M. Paul**, **Gary Simons**, and **Charles D. Fennig** (eds.). 2016. *Ethnologue: Languages of the world*, 19th edn. Dallas, TX: SIL International. (Online version: www.ethnologue.com)

An excellent reference tool, this is a comprehensive catalog of the known languages of the world, their geographic distribution, demographics, vitality, and status.

Sapir, **Edward**. 1921. *Language: An introduction to the study of speech*. New York: Harcourt, Brace and Company.

A classic and accessible introduction to the study of language by one of the great linguists of the twentieth century.

EXERCISES

1. For each of the following statements, determine whether the facts stated are diachronic (indicating how language has changed over time) or strictly synchronic (true of a language now).

   a. To negate a sentence in English, the word *not* is used.
   b. Many words in English were borrowed from French, then adapted to the English sound system.
   c. Chinese differentiates words by changing the pitch.
   d. In Mexican Spanish, the word *pollo* 'chicken' has a "y" sound represented by the letters ll; this developed from an "ly" sound that is still present in other dialects.
   e. The word *silly* in the twelfth century had a meaning of 'happy,' 'blessed,' 'pious,' and 'innocent,' which over time was extended to 'pitiable,' 'weak,' and its current meaning.
   f. The word *fie* is rarely used in contemporary English.

2. Provide an example of each of the following:

   a. arbitrariness in language
   b. mutually intelligible dialects
   c. an endangered language
   d. a factor which might contribute to language endangerment
   e. an example of language change
   f. a systematic fact of English that is not discussed in Chapter 1

3. Which of the following statements are descriptive and which are prescriptive?

   a. The sentence *Who did you give it to?* is incorrect since it ends with a preposition.
   b. The sentence *Who did you give it to?* ends with a preposition.
   c. Always say *John and I*, never *John and me*.
   d. In English, numerals are never placed between an adjective and a noun, so *black three dogs* is ungrammatical.
   e. *Ain't* is used in a variety of English dialects.

4. Go to the website *International Dialects of English Archive* (www.dialectsarchive.com) and click on the global map. Each of the pointers indicates a profile of a speaker of English; click on the pointer to bring up a box with metadata on the profile: title, speaker age, location, etc. Click on the title in this box (e.g., "Russia 13") to bring up the full profile page. Each profile includes a sound file, beginning with the speaker reading a short passage and then transitioning to talking informally about themselves.

   Explore the site and choose six profiles, one from each of the following countries: Canada, the United Kingdom, China, Jamaica, Mexico, and Zimbabwe. For each profile, list the following: the title of the profile and the gender, age, birthplace, and educational background of the speaker. Listen to each sound file in full and record any observations you can make on the sounds, words, or grammatical features.

5. Go to the website of the *UNESCO Atlas of the World's Languages in Danger*. (www.unesco.org/languages-atlas) The top left box of the search tools allows you to select a country or area. The number of endangered languages in each country or area is given in parentheses. When you choose one and click on "Search Languages," a map of the country will be displayed with the location of the endangered languages indicated by markers. The color of the marker indicates the endangerment status of the language, as indicated by the key to the right above the map. The particular languages are given in alphabetical order to the right of the map.

   a. Using the dropdown menu, provide the number of endangered languages in each of the following countries: Australia, Canada, China, Denmark, France, Guatemala, India, Iran, Kenya, Mexico, Panama, Portugal, the Russian Federation, Senegal, the United Kingdom, and the United States.
   b. Click on the United States and "Search Languages" to bring up a map and list of endangered languages on the right. Click on each of the following languages in the alphabetical language list to bring up a box with basic information about the language. List the number of speakers and the given endangerment status for each of the following languages: (i) Nez Perce, (ii) Central Alaskan Yup'ik (not the one on Nunivak Island), (iii) Cherokee, (iv) Barbareño (Chumash), (v) Hawai'ian, and (vi) O'Odham (Tohono).
   c. Using the map, choose four other languages of varying endangerment statuses. List their names, populations, and statuses.

6. Find a speaker of a language with which you are unfamiliar. Ask this person to translate the following sentence. Be sure to ask for the most natural way to express the meaning, rather than a word-by-word translation of the English.

   My two aunts will fly back tomorrow and I will meet them at the airport.

   a. Ask the speaker to help you sound out the sentence and write it down (you don't have all the skills you need for this yet, but just do your best).
   b. Compare the English sentence with the sentence in the language of your study. Make a list of any differences that you find between the two languages. For example, they may differ in the number of words used, the order in which they appear, in how they signal future tense, in which words have prefixes or suffixes and what those mean, in the meanings of specific words, in whether or not they use "and" to join sentences, etc.
   c. In submitting your answer, state the language of study and where it is spoken, include your transcription of the sentence in the other language, and list as many differences as you can find.

7. Assume you were enrolled in a class that you found frustrating and in which you were not doing well. Write down how you would express this in one or two sentences to your best friend, to your parents, and to your college dean (e.g., on a petition to drop the course). Note down any differences in your choice of words. How is this illustrative of the relationship of language and societal structure?

8. Go to the website of the *Endangered Languages Project* (www.endangeredlanguages.com); you can also find the video on YouTube. In the search box, type in North Sami, click on the 'Resources' tab, and then select the short video entitled "Samigiella – An Arctic Nature Language." Watch the video (be sure to choose the English language version) and answer the following questions:

   a. Where is Sami spoken?
   b. What languages is Sami related to?
   c. Does Sami have distinct dialects?
   d. What does the author mean when she describes Sami as a "nature-based" language? What might be the value of documenting a language of this type?
   e. What percentage of Sami speakers now speak the language?
   f. Why has the vitality of the language declined?
   g. Why is it important to focus revitalization activities on Sami children?

2 Phonetics

Physical Dimensions of Speech Sounds

KEY TERMS

- Subglottal system
- Voicing
- Voiced vs. voiceless consonant
- Orthography
- Fundamental frequency vs. pitch
- Supralaryngeal vocal tract and its subparts (lips, alveolar ridge, etc.)
- Places of articulation (bilabial, labiodental, etc.)
- Manners of articulation (stop, fricative, etc.)
- Obstruent vs. sonorant
- International Phonetic Alphabet (IPA)
- Vowel
- Co-articulation
- Suprasegmental

CHAPTER PREVIEW

Phonetics is the branch of linguistics that is concerned with the scientific study of speech sounds. The study of phonetics can provide answers to many questions that you might have wondered about at one time or another. For example, what does it mean to say that someone has a higher-pitched voice than someone else? What makes a tone language like Mandarin Chinese different from a non-tonal language such as English or Spanish? How do English pairs of words such as the verb *import* and the noun *import* differ?

Several areas of phonetics have been the focus of research into the features of speech. **Articulatory phonetics** is concerned with how the vocal organs produce speech. **Acoustic phonetics** deals with the physical characteristics of speech, such as the duration, frequency, and intensity of sounds. **Auditory phonetics** examines the perception of speech by the auditory system. Acoustic, articulatory, and auditory phonetics are all interrelated, since changing the articulatory configuration of the vocal tract results in acoustic changes which in turn potentially influence the perception of a sound. In this chapter, we will consider the first of these areas of phonetic research, providing an overview of the field as well as answers to the questions posed above. Students will be introduced to the tasks of discerning different speech sounds, describing them in phonetic terms, and accurately recording them using the International Phonetic Alphabet.

LIST OF AIMS

At the end of this unit, students will be able to:

- **identify the parts of the vocal tract responsible for producing different sounds;**
- **describe the manner and places of articulation of consonants and vowels;**
- **produce the phonetic symbols for English sounds;**
- **transcribe English words using the IPA;**
- **read English words and passages written in the IPA;**
- **use the IPA chart as a reference for sounds in languages other than English.**

2.1 The Speech Organs

The physical production of speech requires intricate coordination between several parts of the upper body, from the stomach all the way up to the nose. It is common to divide the speech organs into three subsystems (see Figure 2.1): the subglottal system, the larynx, and the supralaryngeal (or supraglottal) system.

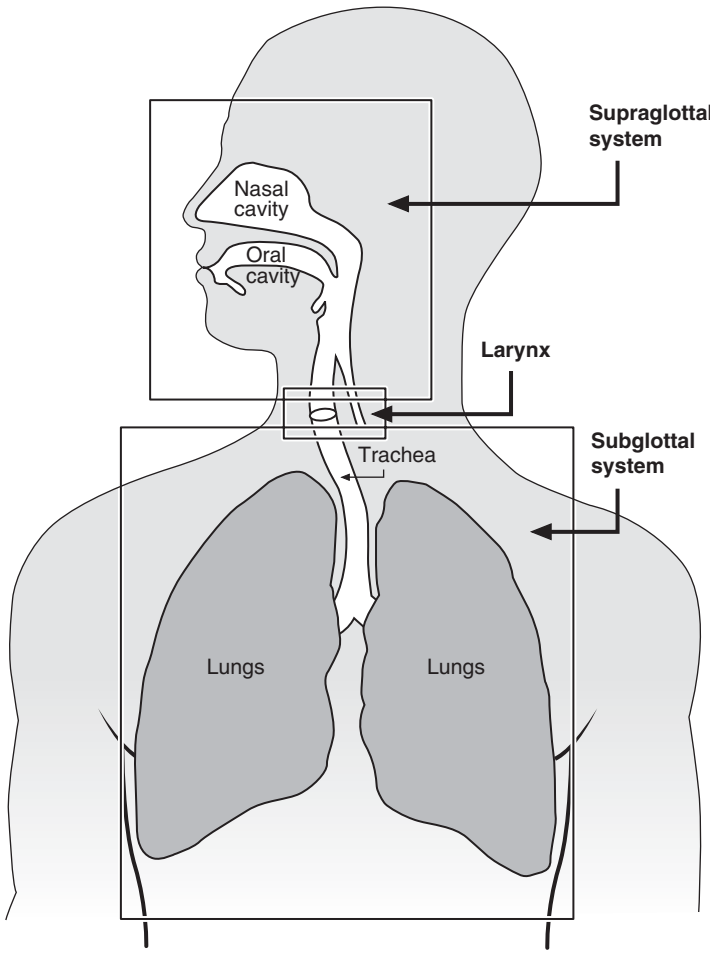


Figure 2.1 Three subsystems of speech articulation

2.1.1 The Subglottal System

The **subglottal system** includes the lungs and the trachea (or windpipe), which provide the air that the upstream articulators manipulate to produce sound. The lungs function like balloons, recoiling after inspiration and setting the air molecules in the vocal tract in motion.

2.1.2 The Larynx

Moving up from the lungs and trachea, the **larynx** is the source for many of the sounds produced in speech. It is located behind the thyroid cartilage (or Adam's apple), which is the bump you can feel on the front of the neck if you lean your head back. ***The larynx contains two vocal folds that vibrate during voiced sounds such as z or v***. To feel the vocal folds vibrate, try placing your fingers on the thyroid cartilage in the front of your neck while making a prolonged [zzzzzz] sound. You will feel the cartilage vibrating. Compare this to what happens when you make a long [ssssss] sound. There is no vibration. Vocal fold vibration, otherwise known as **voicing**, does not require any active motion beyond positioning the vocal folds close enough together that the passage of air between them causes them to vibrate. As long as the air pressure below the larynx is less than the pressure above the larynx, you can sustain a voiced sound. When you produce the sound [zzzzz], you are producing a **voiced consonant**.

As you have already learned when you made the [ssssss] sound, it is also possible to make the same sounds without vocal fold vibration, in which case, you produce a **voiceless consonant**. For example, by turning off voicing in *z* you get *s* and by turning off voicing during *v* you get *f*. (See Sidebar 2.3.) Physically, devoicing of these sounds is achieved by opening the larynx wider than for their voiced counterparts.

In English there are two sounds that only involve the larynx and not any articulators above the larynx. One is the *h* sound in words like *hat* or *ahead*. The other is the glottal stop found in the middle of the expression *uh-oh*. Try saying *uh-oh* emphatically while your hand is on your larynx and your head is leaned back. You will feel an abrupt

SIDEBAR 2.1

You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, accompanying audio files, a review quiz, an articulators quiz, vocabulary quizzes, IPA flashcards, an interactive IPA chart with audio, and a phonetic transcription exercise.

SIDEBAR 2.2

For a description of some of the ways people can modify a normal speaking voice, most often with effects produced in the larynx, see Section 10.3.

Note: Throughout the rest of the book, sidebars like this one will cross-reference sections or textboxes in other chapters or language profiles. For example, "Section 10.3" refers to the third section in Chapter 10 (Prosody). Other sidebars might mention a section number that starts with "LP" (Language Profile), e.g., "Section LP8.1" refers to the first section of the Bardi Language Profile (LP8), and "Textbox LP8.4" refers to the fourth textbox in the Bardi Language Profile.

SIDEBAR 2.3

In phonetics (and other linguistic fields) it is important to distinguish between how a sound is spelled, the **orthography**, and how it is phonetically transcribed. In this chapter, we will initially use italics to represent words and sounds orthographically. Phonetic transcription, which is written between square brackets, is introduced later in the chapter.

stoppage of voicing during the glottal stop between the two vowels as the vocal folds come together to block off all airflow through the larynx. This is called a **glottal stop**, as you stop the airflow by closing the **glottis** (the space between the vocal folds).

By adjusting the tension of the vocal folds during voicing, you can change the fundamental frequency, and hence the pitch, of a sound. The fundamental frequency of a sound is commonly referred to as pitch, though the two terms are technically not synonymous. **Fundamental frequency** refers to the physical property of rate of vocal fold vibration, whereas **pitch** refers to the perception of the sound on a scale of low to high. Increasing fundamental frequency also typically increases the pitch. Someone with a relatively high-pitched voice thus has a relatively high fundamental frequency or a fast rate of vocal fold vibration. Conversely, someone with a low-pitched voiced has a relatively slow rate of vocal fold vibration. Try making the sound [ahhhhhh]. Now try raising the pitch of the sound while your fingers are on your larynx. You will feel the larynx tense up and rise. Now try lowering the pitch of the sound. You will feel the larynx relax and lower. In this way, you can see how an individual can easily change the fundamental frequency of his or her voice.

2.1.3 The Supralaryngeal Vocal Tract and Place of Articulation

Above the larynx is the **supralaryngeal vocal tract**, which contains most of the structures that are manipulated in speech. The articulators of the supralaryngeal vocal tract are shown in Figure 2.2. When you use different articulators to produce speech sounds, you are changing the **place of articulation** of the sound.

In discussing different places of articulation, it is useful to move from the front to the back of the mouth (see Figure 2.2), starting with the most visible organs. The lips play an important role in producing many sounds, including *p, b, m, w, f,* and *v* in English. Sounds that involve a narrowing or a complete closure of the upper and lower lip are called **bilabials**. The bilabial sounds of English include *p, b, m*, and *w*. Sounds involving the upper teeth and the lower lip are referred to as **labiodentals**. These include *f* and *v*. For labiodentals, the lower lip is the **active articulator**, since it moves to meet the upper teeth. The upper teeth are thus the **passive articulator**, since they are stationary. Most consonant articulations involve both an active and a passive articulator. As we will see, for most consonants, the tongue is the active articulator, while the upper surface of the mouth is the passive articulator.

The structures just behind the lips are relatively immobile compared to the lips. These rigid structures include the teeth, the **alveolar ridge** (the hard ridge just behind the teeth before the upper surface of the mouth becomes more domed in shape), and the **hard palate** (the domed part of the roof of the mouth). The teeth are involved in the production of the English *th* sounds in the words *think* and *this*. These sounds are produced by either sticking the tip of the tongue between the upper and lower teeth, in which case the sounds are said to be **interdental**, or placing the tip of the tongue against the back of the upper teeth, in which case the sounds are simply called **dentals**. Try saying *think* with an interdental *th* and then with a dental *th*. In order to make the comparison fair, be careful that you are not completely blocking air from leaving the mouth when making the dental *th*.

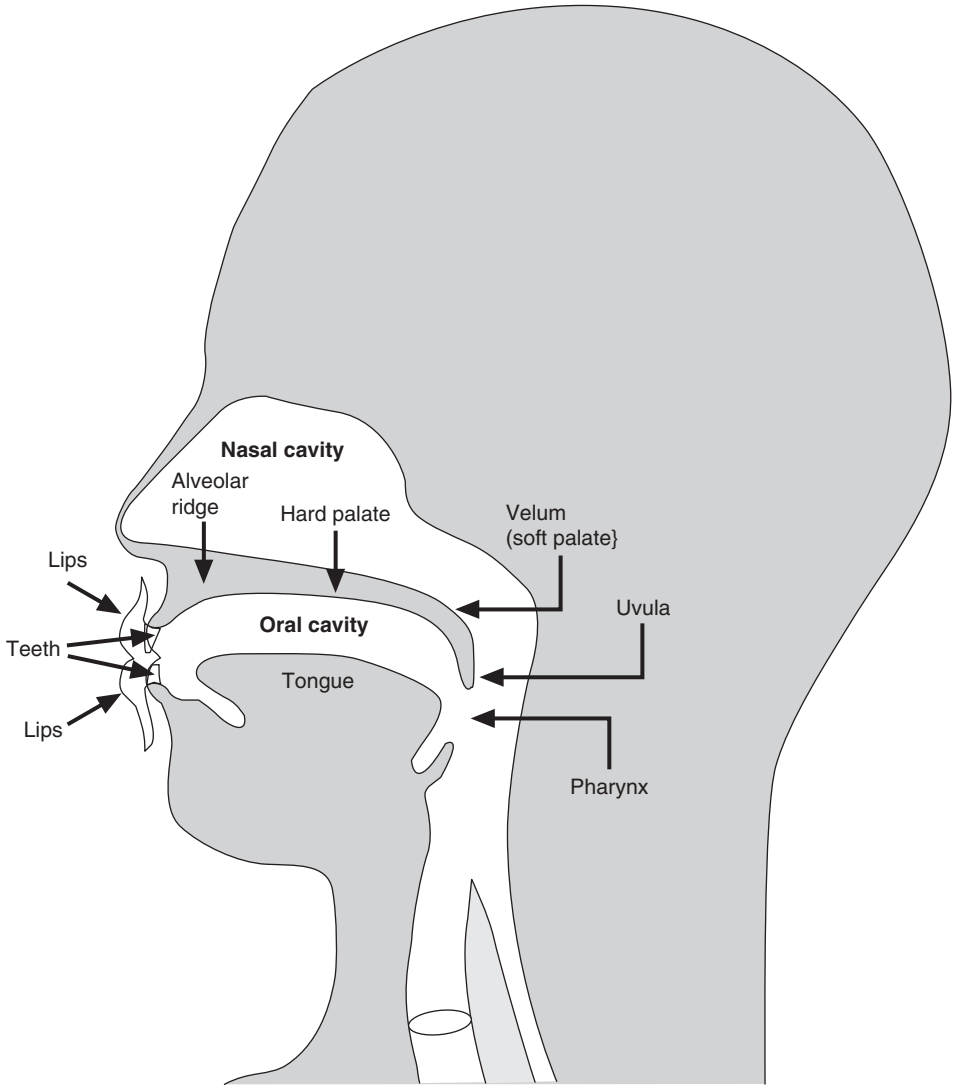


Figure 2.2 The supralaryngeal vocal tract

You will not notice much of a difference in the sound from making this small articulatory adjustment.

You may notice that the first sounds of *think* and *this* are different even though they are both spelled as *th*. The two versions of *th* differ in voicing, just as *z* and *s* were shown earlier to do: the *th* in *think* is voiceless, whereas the *th* in *this* is voiced. We will see shortly that there is a system for transcribing speech in which the voiceless and the voiced *th* are represented differently.

STOP AND REFLECT 2.1 **TONGUE POSITION AND ALVEOLAR SOUNDS**

You may note that not all of the **alveolar** sounds have the exact same point of contact for your tongue. This type of variation is quite common; in particular, *l* often involves quite a bit of contact with the back of the upper teeth, at least for many speakers of American English. Try making an extended [llll] sound and feel where the tip of the tongue is contacting the upper surface of the mouth. Now try making a [nnnnnn] sound and feel where the contact is. Does it occur at the same place as for the [llllll] sound? Even if there is a difference, you should be aware that it is common for *t, d, n*, and *l* to all be treated as alveolars in discussing the sounds of English.

Just behind the teeth is the alveolar ridge, which is the contact point between the tongue and the roof of the mouth for several sounds, including *t* (a voiceless sound), *d* (voiced), *s* (voiceless), z (voiced), *n* (voiced), and *l* (voiced). Another sound *r* (voiced) is also typically assigned to this same group, since *r* is produced with a narrowing in the vocal tract below the alveolar ridge, even though the tongue may be raised only slightly toward the roof of the mouth without touching it. See Stop and Reflect 2.1 for more discussion of alveolar sounds.

There are also sounds that are produced with the tongue contacting the area just behind the alveolar ridge. These are the **postalveolar** (or **palato-alveolar**) sounds, which include the *sh* sound in *ship* (which is a voiceless postalveolar) and the last sound in *rouge* (which is a voiced postalveolar), as well as the first sounds in *jug* (voiced) and *chug* (voiceless). To understand the relationship between alveolars and postalveolars, make an *sss* sound and then switch to a *shh* sound. You will feel the tongue sliding backwards along the upper surface of the mouth as it moves from an alveolar to a postalveolar place of articulation.

Sounds involving contact with the roof of the mouth in the center of the hard palate are simply termed **palatals**. English has a single palatal sound: the *y* sound in words like *yellow* and *young*.

Now drag your tongue backwards from the hard palate. You will notice that the upper surface of the mouth becomes softer. This area of the mouth is called the **soft palate**, or **velum**. Sounds produced by contacting the tongue and the soft palate are termed **velars**. These include the *k* (a voiceless velar sound) in words like *cat, bucket*, and *crib*, the *g* (a voiced velar) in words like *gas, go*, and *bag*, and the final *ng* sound (voiced) in words like *sing* and *lung*. The sound *w* also involves some raising of the back of the tongue toward the soft palate in addition to rounding of the lips; for this reason *w* is often labeled a labial-velar.

The soft palate, or velum, is important for distinguishing sounds involving airflow through the nose and those lacking nasal airflow. Try looking in the mirror while saying *ah* and you will see the velum rise. This raising of the velum ensures that no air escapes through the nose while you are producing the vowel. To see this, hold your finger under your nose while saying *ah*. Now try lowering the velum, holding the same tongue position for *ah* while your finger is still in place under your nose. You will feel air passing through your nose and will hear a nasal-sounding *ahn*, which is found in many languages of the world, such as French.

English also has **nasal** sounds, but they are consonants rather than vowels. Place your finger under your nose while you are making the sounds *m, n*, and the *ng* sound in *sing* and *lung*. You will feel air passing through your nose. Nasality is a separate dimension from place of articulation, since sounds can have the same place of articulation but differ in whether they are nasal or non-nasal (i.e., **oral**). The sounds *m* and *b* differ in nasality; both are voiced and both are bilabial, but only *m* is nasal. Try saying an [m] with your finger under your nose and then immediately switch to a [b]. You will feel airflow through the nose during the [m] but not during the [b] even though the lips remain closed throughout both sounds. The sounds *n* and *d* also differ only in nasality; *n* is nasal and *d* is oral. Similarly, *ng* and *g* differ in nasality; *ng* is the nasal member of the pair. Note that it is common to omit the term oral when describing oral sounds, since oral is assumed to be the default case. (See also Stop and Reflect 2.2 for a brief discussion of nasals and voicing.)

STOP AND REFLECT 2.2 **NASAL SOUNDS**

In most languages all nasals are voiced, since it is difficult to produce a voiceless nasal that is clearly audible. Try making an [m] sound and then turning off vocal fold vibration. You will wind up with a voiceless nasal, which sounds identical to the sound made when breathing through your nose.

Practice producing voiced and voiceless nasals and listen to how they sound. You will notice that it is much harder to hear a voiceless nasal than a voiced nasal. Although they are rare in the world's languages, voiceless nasals are found as consonants in some languages, such as Burmese.

Audio recordings of voiceless nasals in Burmese

2.2 Manner of Articulation

Thus far we have discussed three dimensions relevant for describing speech sounds: the voicing dimension (voiced vs. voiceless), the place of articulation dimension, and the nasality dimension (nasal vs. oral). There is one other dimension that we must consider: the narrowness of the constriction in the vocal tract. Differences in constriction narrowness are referred to as differences in **manner of articulation**.

Some sounds involve a complete closure of the vocal tract. These are called **stops**. English stops include *p, b, m, t, d, n, k, g*, and the *ng* sound. Of these sounds, *p, b, t, d, k*, and *g* are oral stops since there is no nasal airflow, while *m, n*, and *ng* are nasal stops. All stops involve two phases: a closure phase, during which the airflow through the mouth is completely blocked, and a release phase, when the constriction is released. To see this, produce just the closure for the voiceless stop *t* without releasing the tongue from the alveolar ridge. You will notice that there is complete silence, since there is no voicing. This means that voiceless stops are only identifiable through their release, which provides crucial information about place of articulation. There is another type of sound found in certain varieties of English, including for most speakers of American and Australian English, that resembles an alveolar stop in that it is produced with a complete closure at the alveolar ridge. This sound is called a **flap** and occurs in the middle of words like *pity, butter, lady*, and *ladder*. The key difference between a stop and a flap (sometimes also referred to as a **tap**) is the extreme

shortness of the closure for the flap. The tongue briefly taps the roof of the mouth before rapidly returning to position for the following sound.

It is also possible to produce sounds in which the two articulators are close together, but not so tightly occluded that no air can escape through the mouth. Sounds produced by a tight narrowing of articulators are termed **fricatives**. Fricatives are characterized by turbulence created through the random collision of air molecules either at the constriction location or, in the case of alveolar or postalveolar fricatives, by funneling air to hit the back of the teeth. Try making an emphatic [ssssss] sound while holding your hand palm down against your chin. You will feel air striking the back of your hand because the air is being directed downward after it hits the back of your upper teeth. You will also feel air striking your hand if you produce a prolonged and emphatic *sh* sound. Now try making a [hhhhhh] sound while holding your hand in the same position. You will not feel any air striking your hand. This is because the noise in [hhhhhh] is being produced directly in the larynx and not by directing air against the back of the teeth. You will also notice that the noise of *h* is much quieter than that associated with *s* or *sh*. Sounds like *s* and *sh*, which involve funneling of air against the back of the teeth are particularly noisy. These sounds are called **stridents**.

There are two sounds in English that are produced by combining a stop with a following fricative in rapid succession. These are the **affricates**, which include the *j* sound in *jug* (which is voiced) and the *ch* sounds word-initially and word-finally in *church* (which are voiceless). Since affricates have a stop phase, they are often grouped together with other stops.

Additionally, ***sounds can be produced through a slight narrowing of the vocal tract, but not enough to cause noise or a complete obstruction***. These sounds are called **approximants**. Approximants in English include the *y* sound in *yellow* and the *w* sound in *water*. Also included in the class of approximants in English is the *r* sound in words like *red, brick*, and *car*.

A final approximant to consider is the sound *l*, which resembles *t* and *d* in involving a complete closure in the middle of the alveolar ridge. There is, however, a crucial difference between *l* and these other sounds (besides the fact that *l* differs from *t* in being voiced). ***The l sound is produced with a closure only in the center of the mouth***. At least one side of the tongue (if not both, depending on the speaker) is pulled down slightly, away from the roof of the mouth. The lowering of the side part of the tongue allows air to escape the mouth, whereas the true stops *t* and *d* have a complete closure around the upper surface of the mouth. Try making an [llllll] sound and put your hand first on the left side of the mouth and then on the right side. Is the air escaping from just one or both sides of the mouth? The sound *l* has a **lateral** articulation in opposition to all of the other sounds of English, which have **central** articulations. Note that it is common to omit the term central when describing central sounds, since central is assumed to be the default case.

There are a couple of additional useful terms for grouping together certain types of sounds. One of these is the term **liquids**, which includes lateral approximants and *r*-type sounds. Another common descriptor is the term **obstruent**, which refers to the combined

set of oral stops and fricatives. Sounds that are not obstruents are the **sonorants**, which include the nasals and all of the approximants, both lateral and central.

It is important to recognize that our discussion of places and manner of articulation has focused on sounds occurring in English. In reality, there are many more sounds found in languages other than English, as you know already if you speak or have studied other languages. Some of these sounds are discussed below.

2.3 The International Phonetic Alphabet

Up to now, we have referred to the different sounds of English using the traditional symbols used in English spelling. While this strategy has worked for the most part, ***there are some limitations of using spelling (orthographic) characters to represent sounds***. One problem we have already encountered concerns the English letters *th*, which can represent either a voiceless dental fricative as in *think* or a voiced dental fricative as in *this*. Another issue is the use of two letters to represent a single sound in English. For example, the voiced velar nasal at the end of *sing* is represented by the combination *ng*. Similarly, the voiceless postalveolar fricative is written as the sequence *sh*. While it is possible to use two letters to represent a single sound, it is more efficient to use a single symbol to represent a sound that behaves phonetically as a single entity. Furthermore, there is the potential for confusion between a single phonetic sound written with two letters and a sequence of two phonetic sounds also written with two letters. For example, if one sees *ng*, how can one be sure without listening to the word, whether *ng* refers to a single voiced velar nasal, or the phonetic sequence *n* (voiced alveolar nasal) plus *g* (voiced velar oral stop), as occurs in a careful pronunciation of the compound *rain gauge*?

There is an even more serious problem with the use of English spelling to represent phonetic sounds. Many individual English letters or combinations of letters represent multiple phonetic sounds depending on the particular word. For example, the letter *x* can represent either a voiced alveolar fricative, *z*, as in *xylophone*, or the phonetic sequence of voiceless velar stop, *k*, plus voiceless alveolar fricative, *s*, as in *ox*. Similarly, the letter *o* has three different qualities in the words *ton, pond*, and *drone*. Using orthography to represent phonetic pronunciation is thus bound to cause confusion.

SIDEBAR 2.4
For a more detailed discussion of orthographic systems, see the Indonesian Language Profile, Section LP12.4.1 and Textbox LP12.4.

Fortunately, this problem is remedied by the existence of a special phonetic alphabet designed to reflect pronunciation: the International Phonetic Alphabet, abbreviated IPA. ***A crucial principle guiding the International Phonetic Alphabet is its universal one-to-one correspondence between symbols and pronunciation***. Thus, whenever you see an IPA symbol, you can be sure of its pronunciation, regardless of the language being transcribed. For example, whenever you see an IPA *m*, it will refer to a voiced bilabial nasal stop in any language. The IPA thus provides a useful tool for linguists who are transcribing words and who plan to share these transcriptions with other researchers. It is not the case, however, that all linguistic data are transcribed in IPA at all times; see Textbox 2.1.

TEXTBOX 2.1 THE IPA AND REGIONAL TRANSCRIPTION PRACTICES

As noted, the IPA has been designed to transcribe the sounds of every spoken language. However, it is not the case that all linguists use the IPA at all times. In many parts of the world, the transcription practices of linguists reflect the orthographic practices of the local region. In some cases, particular orthographic practices are widespread in a given region, such as the use of the symbol *š* in the transcription of North American Indian languages for the sound written with "sh" in English spelling and transcribed as [ʃ] in IPA.

In this volume, which takes data from many sources – historical and contemporary – from all over the world, the transcription system of the original source is used. Interpreting transcriptions requires careful attention; transcription notes are provided throughout the book to aid readers in this task. Learning these different systems, and how to interpret a variety of transcription practices, is part of the task of learning linguistics.

As it happens, the IPA bears close resemblance to English orthography in many respects. There are only a few major points of departure between the two systems. First, the IPA symbol for a voiceless (inter)dental fricative (as in *think*) is [θ] (IPA symbols will henceforth be written in brackets), while the symbol for its voiced counterpart (as in *this*) is [ð]. The IPA symbol for a voiceless postalveolar fricative (as in *ship*) is [ʃ], while the symbol for its voiced counterpart (as in *rouge*) is [ʒ]. The IPA represents the voiceless postalveolar affricate (as in *church*) as [tʃ] and the voiced postalveolar affricate (as in *jug*) as [dʒ]. The IPA symbol for a voiced velar nasal stop (as in *sing*) is [ŋ]. The IPA symbol for glottal stop (as in *uh-oh*) looks like a question mark but with a horizontal base rather than a period [ʔ]. In addition, the IPA symbol for a voiced palatal approximant (as in *young*) is [j], while the symbol for a central alveolar approximant (as in *red*) is an upside-down [ɹ]. Finally, the flap occurring in American English in the middle of words like *city* and *buddy* is represented with the symbol [ɾ].

SIDEBAR 2.5
See also the Nuuchahnulth Language Profile, Textbox LP5.1, about transcription conventions and the IPA.

SIDEBAR 2.6
The full chart of consonants and vowels in the International Phonetic Alphabet can be found at the back of this book. This will be a useful reference as you explore the wide variety of languages discussed in the book. An interactive IPA chart, including audio, is also available on the student resources page of the website.

Tools > Interactive IPA Chart

We are now ready to see the entire list of IPA consonant symbols relevant for describing English in Table 2.1.

In the chart, places of articulation appear as columns across the top of the chart, while manner, nasality, and lateralness are captured in rows. Sounds differing only in voicing are adjacent with the voiceless sound on the left and the voiced counterpart on the right. There are many possible combinations where no consonant is represented; this reflects the lack of such sounds in English, but does not mean that they are unattested in other languages. Note that [w] appears in both the bilabial and the velar columns, since, as we have seen, it involves constrictions simultaneously at the lips and at the velum. The flap [ɾ] appears in parentheses reflecting the fact that it is present for only certain varieties of English, such as American and Australian English.

TABLE 2.1 IPA chart for English consonants

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Palatal	Velar	Glottal
Oral stops	p b			t d			k g	ʔ
Affricates					tʃ dʒ			
Nasal stops	m			n			ŋ	
Flap (tap)				(ɾ)				
Fricatives		f v	θ ð	s z	ʃ ʒ			h
Central approximants	w			ɹ		j	w	
Lateral approximants				l				

There are also IPA symbols for vowels. ***Vowels fundamentally differ from consonants in being produced with a relatively open vocal tract***, though of course there is some movement of the tongue necessary to make different vowel sounds. The IPA chart for American English appears in Table 2.2 followed, in Table 2.3, by its counterpart for the variety of British English commonly referred to as BBC English.

STOP AND REFLECT 2.3 **VOWELS IN ENGLISH VARIETIES**

Recordings of the words in Tables 2.4 and 2.5 can be found on the *How Languages Work* website. For consistency, all transcriptions in this chapter will be based on recordings from these, as are the exercises and online resources. You should learn to hear the distinctions these speakers make and transcribe them accurately.

Accompanying Sound files for Chapter 02: Tables 2.4 and 2.5.

Your pronunciation of English might be different from these in some respects. Try pronouncing the words in Tables 2.4 and 2.5. Are your vowels the same as these or different? If different, you can find the full IPA chart online and determine which vowels you have in your own speech (your instructor can help you with this). Textboxes 2.2 and 2.3 discuss some of the variation in vowels found across English dialects.

As the tables show, the dimensions used to describe vowels differ from those used to classify consonants. ***Vowels can be described in terms of three core dimensions: backness, height, and tenseness***. In addition, vowels can differ in whether they are produced with lip rounding, as with the vowel in *boat*, or not, as with the vowel in *beet*.

There are three degrees of **height** in English: high, mid, and low. Example words illustrating the vowels of American and British English are shown in Tables 2.4 and 2.5, respectively. The mid-central vowel [ə], also known as **schwa**, is confined to unstressed syllables in English. It is pronounced with a higher tongue position than the mid-central vowel [ʌ], which is only found in stressed syllables (you can hear both of these vowels in the word *above*; the first is [ə] and the second is [ʌ]).

TABLE 2.2 IPA chart for American English vowels

		Front	Central	Back
High	Tense	i		u
	Lax	ɪ		ʊ
Mid	Tense	e		o
	Lax	ɛ	ə	
			ʌ	
Low	Lax	æ	a	

TABLE 2.3 IPA chart for British English vowels

		Front	Central	Back
High	Tense	i		u
	Lax	ɪ		ʊ
Mid	Tense	e	ɜ	o
	Lax	ɛ	ə	ɔ
			ʌ	
Low	Lax	æ		ɑ ɒ

TEXTBOX 2.2 [ɔ] AND [a] IN AMERICAN ENGLISH

Many speakers of American English, including most from California, lack the vowel [ɔ]. For speakers who do not have [ɔ], it is because it has merged with the low vowel [a]. Speakers who have undergone this merger typically (at least in California) produce a low central vowel in words like *caught, dawn*, and *law*. Speakers who have a contrast between [ɔ] and [a] have pairs of words differing only in the vowel, e.g., *caught* with [ɔ] versus *cot* with [a] and *dawn* with [ɔ] versus *don* with [a]. Try asking several Americans to say the words *cot* and *caught*. Do any of them have a different vowel in the two words? Now try asking a speaker from Great Britain how they pronounce these words. How does their pronunciation compare with yours?

Sound files for low vowels in American English: *caught/cot*

Vowels can also be described in terms of **backness**. The front vowels of English are [i, ɪ, e, ɛ, æ]. The back vowels of English (both dialects combined) are [u, ʊ, o, ɔ, ɑ, ɒ], while the central vowels are [ə, ɜ, ʌ, a]. Several of the back and central vowels vary considerably between dialects and between speakers in their pronunciation (Textbook 2.2). The vowel [a] for American English speakers varies widely in its backness from speaker to speaker, so you may note that you have a somewhat backer pronunciation than central [a]. British English

TABLE 2.4 Example words illustrating the vowels of American English

Vowel height	Vowel	Description	English words
High	[i]	High, front, tense, unrounded	*beet, bleed, see*
	[ɪ]	High, front, lax, unrounded	*sit, fin, lip*
	[u]	High, back, tense, rounded	*boot, mood, soon*
	[ʊ]	High, back, lax, rounded	*foot, could, hood*
Mid	[e]	Mid, front, tense, unrounded	*late, rain, paid*
	[ɛ]	Mid, front, lax, unrounded	*red, send, peck*
	[ə]	Mid, central, lax, unrounded	*about, ago*
	[ʌ]	Lower-mid, central, lax, unrounded	*rut, mud, up*
	[o]	Mid, back, tense, rounded	*mode, loan, sew*
Low	[a]	Low, central, lax, unrounded	*hot, mop, rock*
	[æ]	Low, front, lax, unrounded	*cat, man, trap*

TABLE 2.5 Example words illustrating the vowels of British English

Vowel height	Vowel	Description	English words
High	[i]	High, front, tense, unrounded	*beet, bleed, see*
	[ɪ]	High, front, lax, unrounded	*sit, fin, lip*
	[u]	High, back, tense, rounded	*boot, mood, soon*
	[ʊ]	High, back, lax, rounded	*foot, could, hood*
Mid	[e]	Mid, front, tense, unrounded	*late, rain, paid*
	[ɛ]	Mid, front, lax, unrounded	*red, send, peck*
	[ɜ]	Mid, central, tense, unrounded	*purr, learn, sir*
	[ə]	Mid, central, lax, unrounded	*about, ago*
	[ʌ]	Lower-mid, central, lax, unrounded	*rut, mud, up*
	[o]	Mid, back, tense, rounded	*mode, loan, sew*
	[ɔ]	Mid, back, lax, rounded	*dawn, bought, north*
	[ɒ]	Low, back, lax, rounded	*hot, mop, rock*
	[ɑ]	Low, back, lax, unrounded	*half, father, hard*
Low	[æ]	Low, front, lax, unrounded	*cat, man, trap*

has a low back unrounded [ɑ] that corresponds to American English [æ] in words like *half* and to American English [a] in words like *father*. British English also has a low back rounded [ɒ] that corresponds to American English [a] in words like *hot* and *pot*. And British English has an additional central vowel in words like *purr* and *learn* that corresponds to a syllabic [ɻ] or rhotacized (i.e., r-colored) schwa [ɚ] (see Textbox 2.3) in American English.

Vowels can also differ in terms of their **tenseness**. There are several pairs of vowels in English differing only in tenseness. For example, the pair of vowels [i] as in *seat*, and [ɪ] as *sit* differ along this dimension; [i] is a tense vowel and [ɪ] is a lax vowel. Similarly, [e] is tense and [ɛ] is lax, [u] is tense and [ʊ] is lax, [o] is tense and [ɔ] is lax, and [ɜ] is tense and [ə] is lax. Tense vowels in English are longer than their lax counterparts and, for front and back vowels, also typically have a slightly more peripheral tongue position (i.e., higher and fronter in the case of front vowels, and higher and backer in the case of back vowels). You can verify this by producing an [i] sound and then changing it to an [ɪ]. You will feel the tongue lowering slightly and retracting. Now try the same exercise by switching from [e] to [ɛ]; you will once again notice the tongue lowering and retracting.

The final parameter along which English vowels can be described is whether they are produced with **lip rounding** or not. The rounded back vowels of English are [u, ʊ, o, ɔ, ɒ], whereas [ɑ] is unrounded. All the front and central vowels in English are unrounded. To see that ***rounding is a separate parameter from tongue height and backness***, try making an [i] sound while looking in the mirror. You will notice that the corners of the mouth are drawn back and that there is no lip rounding. Now without moving your tongue, round your lips by protruding them. The sound you wind up producing is a high tense front rounded vowel, a sound that does not occur in English but that is found in many languages of the world, such as German and French. As a point of interest, this sound is transcribed as [y] in the IPA. This is why we use [j] and not the [y] symbol to transcribe the palatal approximant found in English words like *yam* and *yellow*.

TEXTBOX 2.3 VOWELS BEFORE "r" IN ENGLISH

Combinations of vowels plus "ɾ" in English tend to be pronounced very differently from other vowel-plus-consonant sequences. Speakers of many dialects drop the "ɾ" entirely at the end of a word or syllable, as in the stereotypical pronunciation of the phrase [pak ðə ka ɪn ˈhavəd jad] 'Park the car in Harvard Yard' by speakers of Boston or British English. After certain vowels, as we have seen, the "ɾ" may leave a residual schwa-like vowel that combines with the preceding vowel to form a diphthong as in the words *peer, pear*, and *poor*, as produced by speakers of British English. The number of vowels occurring before "ɾ" (where it survives) is also typically reduced. Many speakers of American English thus have only one or two of the vowels [e, ɛ, æ] before "ɾ". The words *Mary, merry*, and *marry* are homophonous for many people, as are the names *Karen* and *Keren*. Likewise, the words *pour* and *poor* are identical for many speakers.

In addition to the English vowels in Tables 2.2 and 2.3, ***there are also combinations of vowels in English that function as a single unit in the sound system***. These vowel sequences are called ***diphthongs***, in contrast to ***monophthongs***, which are produced with a single articulatory configuration. Diphthongs may be regarded as the vocalic equivalent

to affricates, since they involve two phases. There are three clear diphthongs in American English. One is [aɪ], which starts off as [a] and then rapidly sequences into [ɪ]. The diphthong [aɪ] is found in many words in English including *write, lie*, and *mine*. The second diphthong is [aʊ], which is found in words like *cow, town*, and *bout*. Finally, the diphthong [ɔɪ] occurs in words like *boy, soy*, and *toil*. British English has a few additional diphthongs corresponding to sequences of vowel plus [ɹ] for most speakers of American English. These diphthongs, which all end in schwa, include [ɪə] in words like *peer* and *fear*, [eə] in words like *pear* and *care*, and [ʊə] in words like *poor* and *tour*. Textbox 2.4 describes some of the other diphthongs that occur in English, which are a little less clear.

TEXTBOX 2.4 **DIPHTHONGS IN BROAD AND NARROW PHONETIC TRANSCRIPTIONS**

Students with a careful ear will notice that most pronunciations of the English tense mid vowels [e] and [o] are actually diphthongs, with the tongue moving from the position of [e] to the position of [ɪ] in a word like *lay* or either [o] to [ʊ] (American English) or [ə] to [ʊ] (British English) in a word like *show*. A **broad phonetic transcription** would transcribe these words as [le] and [ʃo]. A **narrower phonetic transcription**, one which seeks to record as much detail as possible, would transcribe them as [leɪ] and either [ʃoʊ] or [ʃəʊ].

2.4 Using the IPA to Transcribe Words

Phonetic transcription exercise

Now that you are familiar with the IPA, we can try using it to transcribe English words. ***One of the most important aspects of doing phonetic transcription is not to be biased by the spelling of a word***. Since spelling symbols often differ from IPA symbols, as we have seen, blindly following the English orthography can lead to transcription mistakes. In doing transcription, you may find it useful to first think about how many sounds are in the word you are transcribing. To take a simple example, the English word *do* has two sounds. The first sound is a voiced alveolar stop [d], while the second sound is a high back rounded vowel [u]. (Don't be influenced by the spelling of the vowel as "o.") If we put the two sounds together, we get [du] as the phonetic transcription. Let's take a slightly trickier example now. In the spelling of the word *checks*, there are six letters. In terms of phonetic transcription, however, there are only four sounds. The first sound is the voiceless postalveolar affricate [tʃ]. The vowel is the lax mid-front vowel [ɛ]. The final consonant sequence consists of a voiceless velar stop [k] and a voiceless alveolar fricative [s]. (Note that these are only two sounds [k] and [s], even though there are three letters, "cks," in the spelling.) With a little practice, you should be able to phonetically transcribe any English word, or even words in other languages containing sounds that have been introduced in this chapter. It is also possible to go in reverse and sound out the word from the phonetic transcription. For

SIDEBAR 2.7

Your understanding of phonetics, phonology (the subject of the next chapter), and linguistics more generally will be easier if you spend time now memorizing the IPA: what each symbol means and how it is described. To help you with this, two sets of online flashcards are available on the website: one takes you from standard description to symbol and the other from symbol to description.

IPA flashcards

example, if you saw the IPA transcription [tʌf], you would know that it was the transcription for the English word *tough*. Try out the transcriptions in Stop and Reflect 2.4, then check your answers on the following page.

STOP AND REFLECT 2.4 **IPA TRANSCRIPTION PRACTICE**

Try transcribing the following English words in the IPA, then check your transcription against the answers in Sidebar 2.8 on the next page.

1. yellow
2. lamb
3. wreath
4. beige
5. mission
6. sixth
7. xylophone
8. judge

2.5 Co-articulation

So far we have been considering sounds in isolation, but it is important to recognize that there is overlap between sounds in actual speech. ***While one sound is being pronounced, the speech organs are preparing to produce the next sound***. This articulatory overlap between sounds is termed **co-articulation**. It is easiest to observe co-articulation between adjacent sounds that have different articulators. For example, during the production of a bilabial consonant like [b], the tongue is free to move into position from the preceding vowel into the following vowel, as in the word *reboot*, in which the tongue must move backer to transition from the high front vowel /i/ to the high back vowel /u/. Consonants other than bilabials may even be subject to co-articulation with adjacent vowels. For example, the body of the tongue is relatively free to transition between vowels during alveolar consonants, since alveolars primarily involve the tongue tip but do not involve posterior parts of the tongue, which play a crucial role in producing vowels.

Figure 2.3 contains a sequence of MRI images showing co-articulation between adjacent sounds in the word *leap*, extracted from the phrase *pea leap*. During the first three images, the tongue tip is raised toward the alveolar ridge and the back of the upper teeth to produce the lateral approximant /l/. Already by the fourth image, the middle part of the tongue has begun to rise in preparation for the high vowel /i/ even as the tongue tip is still curled upward for the /l/. (It may be noted that the tongue body is already in a relatively high position for the high vowel preceding the /l/.) The tongue body continues to rise through the fifth frame, reaching its target position by the sixth frame, as the tongue tip gesture for /l/ completely ends. In the seventh frame, while the /i/ is still being articulated, the lips are already starting to close in preparation for the final bilabial stop /p/. The lips make a complete closure by the eighth frame, before gradually opening in the tenth and eleventh frames.

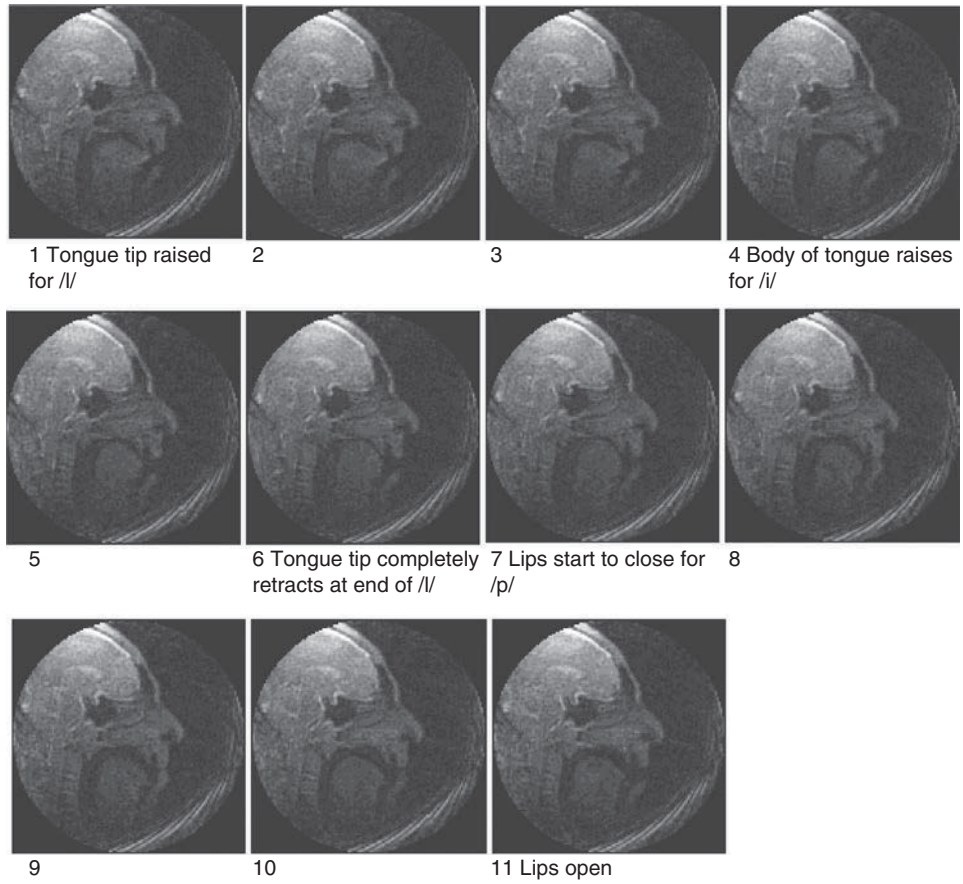


Figure 2.3 Sequenced MRI images of the word *leap* /lip/ extracted from the phrase *pea leap.* [The MRI images in this chapter were generously made available by Shri Narayanan of the University of Southern California Speech Production and Articulation Knowledge Group (SPAN). More MRI images (in video format with accompanying sound files) for other English sounds are available on SPAN's website: http://sail.usc.edu/span/mri-timit/.]

SIDEBAR 2.8

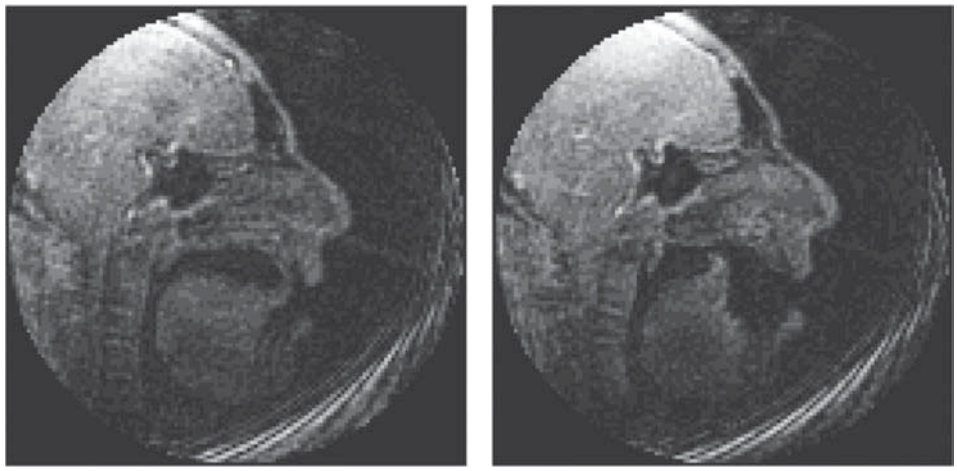
Answers to the Stop and Reflect 2.4.

1.	yellow	/jɛlo/
2.	lamb	/læm/
3.	wreath	/ɹiθ/
4.	beige	/beʒ/
5.	mission	/mɪʃən/
6.	sixth	/sɪksθ/
7.	xylophone	/zaɪləfon/
8.	judge	/dʒʌdʒ/

It is clear from Figure 2.3 that there is substantial co-articulation between adjacent sounds. The tongue body is already preparing for /i/ during the production of /l/, and the lips are already moving into position for the /p/ during the /i/. Co-articulation is an essential characteristic of all speech.

2.6 Phonetic Typology

Although English has a relatively large number of sounds, it lacks many sounds that are found in other languages of the world. Many of the gaps in the English IPA chart are filled by symbols representing sounds which occur in other languages. See Textbox 2.6 for an example of one such type of sound.



Dental Retroflex

Figure 2.4 Dental /l̪/ and retroflex /ɭ/ in Tamil

SIDEBAR 2.9

The entire IPA chart is available at the end of this book. You can use it as a reference for IPA symbols that you are unfamiliar with. An interactive chart is available on the *How Languages Work* website; you can toggle between a chart with only the sounds of English and a chart with most of the sounds in the world's languages.

Tools > Interactive IPA Chart with Audio

On the full IPA chart (see Sidebar 2.9), you will see a number of new symbols that represent sounds not attested in English. For example, the symbol [x] refers to a voiceless velar fricative, as found in the final consonant in the German name *Bach*. There are also places of articulation not found in English. For example, many languages have **uvular** consonants, produced by the back of the tongue coming into contact with or approximating the uvula (the appendage which hangs down in the back of the oral cavity). Uvular consonants are found in many languages, such as French, which has a voiced uvular approximant as the initial sound of *rouge*.

Another interesting category of sounds found in many languages of the world are the **retroflex consonants**, which are often produced with the tip of the tongue curled backwards toward the roof of the mouth behind the alveolar ridge. One language containing this type of retroflex consonant is Tamil, a Dravidian language spoken primarily in southern India. In this language the retroflex consonants are described as "subapical," since the underside of the tongue makes contact with the roof of the mouth. The MRI images in Figure 2.4 compare a retroflex lateral approximant /ɭ/ with a dental /l̪/ (indicated by a subscripted ̪ to distinguish it from an alveolar /l/), as produced by a Tamil speaker.

The place of articulation is much farther back in the mouth for the retroflex than for the dental, and the tongue tip is clearly curled back during the retroflex so that the underside of the tongue, rather than the upper surface, makes contact. For a description of some of the methods linguists use to explore tongue position and other phonetic features of speech sounds, see Textbox 2.5.

There are many other types of speech sounds in languages. While we cannot introduce all of them here, there are now excellent resources for phonetics on the Internet. If you are interested in hearing other types of sounds from the IPA, the website put together by the great phonetician Dr. Peter Ladefoged contains links to sound files from languages examined during years of phonetic research throughout the world: *Vowels and Consonants* (2nd edition) companion website.

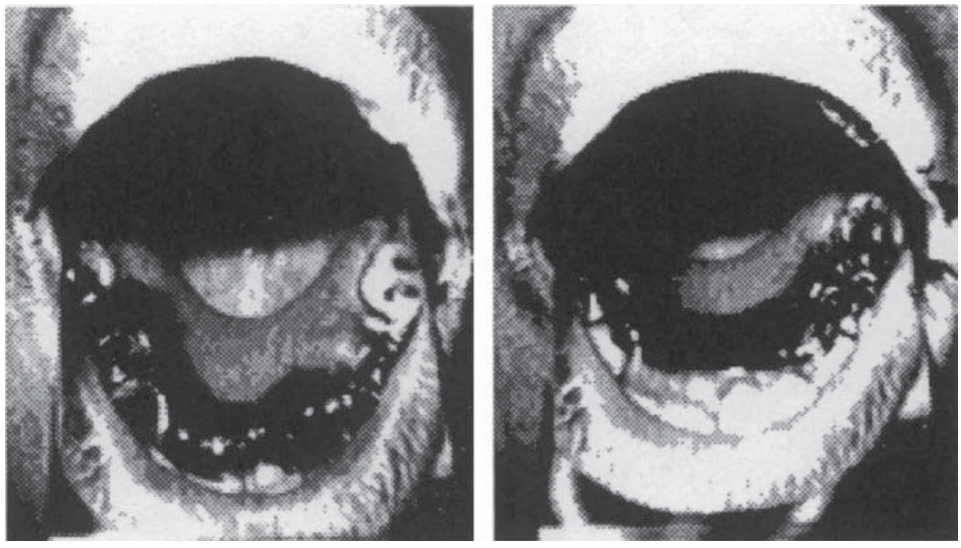
TEXTBOX 2.5 **INSTRUMENTAL PHONETIC TECHNIQUES**

There are a number of instrumental techniques available for learning about the phonetic properties of speech. These include non-invasive procedures such as making audio or video recordings to analyze acoustic features and collecting airflow and air pressure data to study aerodynamic properties. Other techniques for directly analyzing articulatory gestures can be more complex (and invasive) and include magnetic resonance imaging (shown in Figures 2.3 and 2.4), electromagnetic articulography, electroglottography (for studying the larynx), and ultrasound, which is used to track tongue position and is illustrated in the photograph below. The book by Bryan Gick et al., cited in the Suggestions for Further Reading at the end of the chapter, provides an overview of a number of techniques used to gain insight into articulatory properties of speech.

Bernard Comrie, author of the Tsez Language Profile, is the subject of an ultrasound experiment tracing his tongue position.

TEXTBOX 2.5 (cont.)

One relatively low-tech method for examining articulation is static palatography. Palatography data are collected by painting the tongue with a viscous mixture of activated charcoal and olive oil and then producing a sound, typically a consonant articulated somewhere between the teeth and the soft palate. (Alternatively, cocoa may be used instead of activated charcoal.) The contact between the tongue and the roof of the mouth leaves a residue of the olive oil and charcoal mixture on the upper surface of the mouth at the point of contact. This contact pattern, or palatogram, can be examined and photographed for comparison with other palatograms, by holding a mirror under the roof of the mouth. The picture below contains two palatograms illustrating a contrast between a dental stop (on the left) and a postalveolar stop (on the right) in Ndumbea, a language of New Caledonia whose phonetic system is described in an article by Matthew Gordon and Ian Maddieson (1999: 66–90). The palatograms are photographs of the roof of the mouth made after the consonant has been articulated. In the palatogram on the left, there is black residue from the olive oil–charcoal mix on the upper teeth, indicating that the consonant was a dental. In the palatogram on the right, on the other hand, the teeth are clean, indicating that the point of contact was farther back in the mouth, in the postalveolar region.



Palatograms where residue indicates dental (left) and postalveolar (right) consonant articulations.

TEXTBOX 2.6 **EJECTIVE STOPS**

Ejective stops are common in indigenous languages of North America. For example, Navajo, an Athabaskan language spoken in the southwestern United States, has ejective stops at several places of articulation.

To produce the ejective [kʼ], emphatically say the English word *cake* without releasing the final velar stop. While you are holding the stop closure, close your glottis just as if you were making a glottal stop. Now release the velar closure before releasing the glottal stop and you should hear a popping sound much like in the Navajo velar ejective. Sometimes it takes practice to learn new sounds, so don't be discouraged if you don't produce an ejective on your first try. Everyone finds certain sounds easier to make than others. Ejectives may come naturally to one person, while clicks may come more naturally to someone else.

Audio files of ejective stops in Navajo.

2.7 Suprasegmentals

SIDEBAR 2.10
See the Nuuchahnulth Language Profile (LP5) for an example of a language with ejectives and glottalized sonorants. See also the Tsez Language Profile (LP7) for another description of ejective stops.

In addition to describing individual speech sounds, phonetics is also concerned with patterns over groups of sounds. Phonetic properties above the level of individual sounds (otherwise known as **segments**) fall under the heading of **suprasegmentals**.

2.7.1 Syllables

One unit larger than the segment is the **syllable**. ***The syllable is a linguistic grouping that consists of a single peak, which may be flanked on one or both sides by consonants.*** The **syllable peak** (or **nucleus**) is so called because it is the most prominent (or loudest) part of the syllable. The syllable peak typically comprises a vowel, the most prominent type of sound. Consonants that precede the syllable peak within the syllable are referred to as the syllable **onset**, while consonants that follow the peak are called the syllable **coda**. Since consonants are less prominent than vowels, syllables typically first increase in prominence (from the onset to the peak), then decrease (from the peak to the coda). Textbox 2.7 describes the less frequent occurrence of consonants as syllable peaks.

The IPA has a symbol for representing syllable boundaries. It is a period that is positioned between syllables. For example, the name *Mississippi* has four syllables and would be transcribed as [mɪ.sə.sɪ.pi].

TEXTBOX 2.7 **SYLLABIC CONSONANTS**

Although most syllables have vowels as the peak of the syllable, it is also possible to have consonantal peaks. For example, the words *little* and *button* each have two syllables, the second of which usually does not have a true vowel. The syllable peak in the second syllable of *little* is [l] while the peak in the second syllable of *button* is [n]. Both of these sounds are sonorants, the most prominent type of consonant, so they are natural syllable peaks. The nasal [m] can also function as a syllable peak in English as in *prism*. In most varieties of American English, [ɹ] also occurs as a syllable peak as in *learn* and the second syllable of *butter*. In British English, the vowel [ɜ] rather than [ɹ] is the syllable peak in words like *learn* and *butter*, though it is often possible to hear a rhotic coloring to the vowel.

Consonants that function as syllable peaks are known as **syllabic consonants**. In phonetic transcriptions, they are indicated by the symbol [̩] appearing under a consonant letter, e.g. [ɹ̩], [l̩], [n̩]. You may also encounter [ɚ] (or [ɝ]), the symbol for a rhotacized central vowel, instead of [ɹ̩] in varieties of English, e.g., American English, that have syllabic [ɹ̩].

2.7.2 Stress

Another important suprasegmental property is stress. Stress is the relative prominence of different syllables in a word. Stressed syllables typically have some combination of longer duration, greater loudness or higher pitch relative to unstressed syllables. In languages that have stress, there is one syllable per word that carries the main or primary stress. For example, the first syllable in *sofa* carries stress, while the second syllable in *relax* is stressed. The IPA symbol for primary stress is ['], which goes above and to the left of the first sound in the primary stressed syllable. The transcriptions of *sofa* and *relax* would thus be ['sofə] and [ri'læks], respectively.

It is also possible for a word, particularly a long word, to have **secondary stresses** that are not as strong as the primary stress but are stronger than completely unstressed syllables. The IPA symbol for secondary stress is [ˌ], which goes below and to the left of the secondary stressed syllable. To take an example of secondary stress from English, the word *Mississippi* has a secondary stress on the first syllable in addition to the primary stress on the third syllable, thus [ˌmɪ.sə.ˈsɪ. pi].

English uses stress to differentiate some pairs of words with different meanings. For example, the word *insight* is stressed on the first syllable, while the word *incite* is stressed on the second syllable. English has several noun and verb pairs that differ in the location of stress. For example, the noun *convert* has initial stress, while the verb *convert* has stress on the second syllable. Similarly, the noun *import* has stress on the first syllable, while the verb *import* has stress on the second syllable. We can see that in English the position of the primary stress cannot be predicted (for more on stress cross-linguistically, see Textbox 2.8).

SIDEBAR 2.11
For a description of a stress system in another language, see the Kabardian Language Profile (LP1).

TEXTBOX 2.8 **STRESS SYSTEMS AROUND THE WORLD**

Stress patterns display considerable diversity cross-linguistically.

One of the major distinctions between stress systems is whether stress falls a consistent distance from the word edge across words of different shapes. In many languages, the primary stress of a word falls on a predictable syllable. For example, in Latvian, the first syllable of a word receives primary stress, whereas in Polish, primary stress falls on the second-to-last syllable, also called the "penultimate" syllable, of the word. This type of stress pattern, where the location of stress can be predicted by its position in the word, is called **weight-insensitive stress**. The three most common locations of stress in weight-insensitive stress systems are the initial syllable, the penultimate syllable, and the final syllable, although other stress sites such as the peninitial (second syllable from the left) and the antepenultimate (third syllable from the right) are also attested. Other languages, such as Yup'ik, display weight-sensitive stress because they preferentially stress intrinsically more prominent (termed "heavy") syllable types, e.g., syllables with long vowels or closed syllables.

Another way in which stress systems differ cross-linguistically is in whether they have only a single primary stress per word or whether they place rhythmic secondary stresses in longer words, as in the Florida place name *Apalachicola*, phonetically [ˌæ.pə.ˌlæ.tʃə.ˈkʰo.lə]. To learn more about the distribution of stress systems cross-linguistically, the interested reader is encouraged to refer to the four chapters and accompanying maps (features 14–17) dealing with stress in *The World Atlas of Language Structures* (http://wals.info/feature).

2.7.3 Tone

Sound files for tone in Dida

In some languages, stress plays much less of a role than in English. This includes **tone languages** (see Textbox 2.9 for a discussion of the distribution of tone languages worldwide). ***In tone languages, fundamental frequency (or its perceptual correlate, pitch) plays an important part in distinguishing between words with different meanings***. For example, in Dida, a Kru language spoken in the Ivory Coast, Africa, the same string of segments can have different meanings depending on the tone pattern associated with the

Sound files for tone in Dida

string. To take one minimal pair, the word [su] with a mid tone means 'tree,' while the same sound sequence with a low tone means 'hot.' (Dida also has other tones besides mid and low tone.) English does not use tone to contrast words. Rather, in English fundamental frequency plays an important role in signaling stress and also in the last of the suprasegmental properties to be discussed here, intonation.

TEXTBOX 2.9 **TONE LANGUAGES AROUND THE WORLD**

In some regions of the world the great majority of languages have tone. This is particularly true of China, Southeast Asia, and sub-Saharan Africa. (A discussion of why linguistic features like tone cluster geographically can be found in Section 13.6.) However, tone is not restricted to these regions and, in fact, tone languages are found in many parts of the world. To see the distribution of tone languages, visit the excellent online resource, *The World Atlas of Language Structures*, go to the page on tone (http://wals.info/feature/13A), and click on the "show map" button.

Tone languages include Mandarin, Cantonese, and virtually every other Chinese language; Thai, Vietnamese, Cambodian, and Tibetan in Southeast Asia and the Tibetan Plateau; Zulu, Shona, Igbo, Hausa, and Somali in Africa; Hopi and Cherokee in the United States; Mixtec, Huave, and Otomí in Mexico; and Kubeo and Pirahã in South America. Although quite rare in Europe, simple tone systems are found in Norwegian and Latvian. Two tone languages, Manange and Seneca, are described in Language Profiles 3 and 13.

2.7.4 Intonation

Intonation refers to the changes in fundamental frequency (pitch) that occur during a phrase or an utterance. ***All languages (even tone languages) use differences in intonation patterns to mark differences in meaning that are not conveyed by segmental differences***. For example, English statements are typically marked by a pitch fall at the end, while English yes/no questions often have a pitch rise. The English sentence *So, you don't think that'll work* can be uttered with either a rising or a falling pitch pattern, with very different connotations (see Stop and Reflect 2.5). The pitch fall indicates that the speaker is summarizing the opinion of the person he or she is talking to, whereas the pitch rise would be used to question whether the person thinks something will work or not. Intonation patterns and their functions are language-specific, with interesting variations across languages, as illustrated by Chickasaw in Textbox 2.10.

STOP AND REFLECT 2.5 **INTONATION PATTERNS**

Relatively small differences in intonation patterns can dramatically change the connotation of an utterance. Try figuring out the meaning when the sentence *So, you don't think that'll work* is produced with three different intonation patterns. Several alternative pronunciations can be found in sound files on the website. What others can you produce and what meanings do these variations convey?

Sound files for *So, you don't think that'll work*

TEXTBOX 2.10 **INTONATION IN STATEMENTS AND QUESTIONS**

Most languages of the world have falling pitch as the unmarked intonation contour at the end of declarative sentences. Languages display more variation in whether they employ rising or falling intonation at the end of questions, with the possibility that different types of questions, for example, questions requiring a yes or no answer as opposed to those requiring specific information (such as when something happened), can differ in their intonation within the same language. Chickasaw, a highly endangered American Indian language of Oklahoma, is typologically unusual in that many speakers employ a rise at the end of statements and a fall at the end of questions.

Sound files for intonation in Chickasaw

Intonation is a very complex area of phonetics since it is used for many functions. These functions may include, among others, to signal that someone has finished speaking or is going to continue speaking after a brief pause, to convey emotions, or to mark emphasis. Intonation is further discussed in Chapter 10, on prosody.

CHAPTER SUMMARY

In this chapter, we have discussed articulatory phonetics, which deals with how the vocal organs produce speech. The speech organs can be divided into three regions. The subglottal system, which comprises the lungs and the trachea, provides the air that the upstream articulators manipulate to produce sound. The larynx is the gateway to the supralaryngeal system; vibrations of the vocal folds in the larynx produce voicing, which is a key component of many speech sounds. The supralaryngeal system includes the lips, teeth, velum, and tongue, all of which can be moved to produce different speech sounds. These sounds can all be classified according to manner and place of articulation, voicing, and whether they are nasal or oral. We have also learned about the ways in which speech sounds can be transcribed using the IPA. In addition to describing individual sounds, phonetics includes the study of suprasegmental properties such as syllable structure, stress, tone, and intonation. Taken together, the key features of speech production introduced in this chapter on phonetics can be used to describe the sounds of a language; examining the patterns of behavior for sounds within a language falls within the area of phonology, the topic of the next chapter.

SUGGESTIONS FOR FURTHER READING

Catford, **John C.** 2003. *A practical introduction to phonetics*, 2nd edn. Oxford University Press.

This introductory book focuses on mastery of phonetics through self-experimentation with one's own vocal tract.

Gick, **Bryan**, **Ian Wilson**, and **Donald Derrick**. 2013. *Articulatory phonetics*. Malden, Mass.: Wiley-Blackwell Publishers.

This reference offers a thorough introduction to speech production and includes discussion of instrumental techniques for examining articulation.

Johnson, **Keith**. 2011. *Acoustic and auditory phonetics*, 3rd edn. Malden, Mass.: Wiley-Blackwell Publishers.

This book introduces acoustic phonetics and how the auditory system perceives speech.

Ladefoged, **Peter**. 1995. *Elements of acoustic phonetics*. University of Chicago Press.

This book provides an informative introduction to the acoustics of speech and techniques for acoustic analysis.

Ladefoged, **Peter**, and **Sandra Ferrari Disner.** 2012. *Vowels and consonants*, 3rd edn. Chicago: Wiley-Blackwell Publishers.

This is a somewhat more basic introduction to phonetics than *A course in phonetics*.

Ladefoged, **Peter**, and **Keith Johnson**. 2014. *A course in phonetics*, 7th edn. Boston: Wadsworth Publishing.

This is the most widely used introduction to phonetics. It introduces the entire International Phonetic Alphabet, including sounds found in a variety of languages other than English.

Ladefoged, **Peter**, and **Ian Maddieson**. 1996. *Sounds of the world's languages*. Oxford: Wiley-Blackwell Publishers.

Drawing on the authors' extensive experience conducting linguistic research on under documented and endangered languages, this book is the definitive guide to both acoustic and articulatory properties of sounds found in languages throughout the world.

EXERCISES

1. Using English prose, succinctly describe how the articulators move in the pronunciation of each of the following words given in the left column. Then describe how the movement of the articulators changes in the pronunciation of the word in the right column. (*Hint*: Pronounce these words slowly and feel how your own articulators are moving.)

a.	*much*	*muck*
b.	*stick*	*slick*
c.	*shy*	*she*
d.	*rings*	*reeks*
e.	*jog*	*dog*

Example answer for *pan* and *pat:*

In *pan* the word begins with the lips closed and vocal cords still. After the lips are released, the vocal cords begin to vibrate while the tongue is in a low position in the front of the oral cavity. The velum is lowered so air passes through the nasal cavity. The tongue raises and makes contact with the alveolar ridge, closing off the oral cavity entirely, but air continues to pass through the nose. In *pat*, the articulation differs in that the velum remains raised, so the air is only expelled through the oral cavity. When the tongue contacts the alveolar ridge, the air is fully stopped.

2. Provide succinct answers to each of the following questions:
- **a.** How does the articulation of a *nasalized vowel* differ from the articulation of an *oral vowel*?
- **b.** How does the articulation of a *voiced stop* differ from the articulation of a *voiceless fricative*?
- **c.** How does the articulation of a *fricative* differ from the articulation of an *affricate*?
- **d.** How does the articulation of a *central approximant* differ from the articulation of a *lateral approximant*?
- **e.** How does the articulation of a *labiodental fricative* differ from the articulation of an *interdental fricative*?

Sound files for Exercise 3

3. Identify whether or not each of the following transcriptions is a word in American English. If so, write the word. If not, make a change or changes in the transcription to produce an accurate IPA transcription of the American English word that the transcription suggests.

Note: The symbol [ˌ] under a consonant letter means that it is syllabic; it forms the peak of the syllable, as the orthographic vowel is not pronounced, e.g., the second syllable of *center* [ˈsɛntɹ̩].

a. [proˈdus]
b. [ˈtʃæmpjən]
c. [ˈkɹɪstl̩]
d. [ˈdʒɪŋgl̩]
e. [ˈspɪtʃ]
f. [əˈlaʊ]
g. [ɪmˈpeʃənt]
h. [ˈfɹæntɪc]
i. [fʌdge]
j. [heŋɹ̩]
k. [ˈkɹiki]
l. [ˈlək]
m. [ˈshɪp]
n. [sʌppɹ̩]
o. [ˈʃedz]
p. [ˈpætʃd]
q. [ˈkoms]
r. [ʃʌtl̩]
s. [kɪttn̩]
t. [yan]

Sound files for Exercise 4

4. Transcribe the following words using the International Phonetic Alphabet. Sound files of speech by American and British speakers are available on the website.

a. telephone
b. yoyo
c. maneuver
d. phonetics
e. shrink
f. forget
g. slapped
h. creams
i. baked
j. loudly
k. risky
l. obvious
m. hopefully
n. cradle
o. sprinkle
p. thank
q. bathes
r. feathers
s. puppies
t. buoyant

Sound files for Exercise 5

5. Mark the positions of primary stress in the following pairs of words; sound files are available on the website:

a.	electric	electricity
b.	tangent	tangential
c.	fluid	fluidity
d.	pragmatic	pragmatist
e.	fortunate	unfortunately
f.	emphasis	emphatic
g.	mercury	mercurial
h.	constitution	constitutionality
i.	industry	industrialization
j.	fantastic	fantastical

Sound files for Exercise 6

6. Transcribe the following words using the IPA. Be sure to listen carefully to the words so as not to be misled by standard English orthography. Mark the primary stress; sound files are available on the website.

a. paper
b. ride
c. kitchen
d. lemony
e. violet
f. measure
g. yes
h. honorable
i. attacked
j. cupid
k. good
l. crushed
m. button
n. yearling
o. philosophy
p. chunkier
q. bathes
r. bath
s. ploughed
t. chef
u. thought
v. contribute
w. machine
x. Celtic
y. whale
z. jelly

7. Indicate which of the four alternative transcriptions represents an accurate IPA transcription of the given word.
   - **a.** *phones*
     - **i.** [phons]
     - **ii.** [fons]
     - **iii.** [fonz]
     - **iv.** [fonez]
   - **b.** *attract*
     - **i.** [aˈtrækt]
     - **ii.** [əˈtɹækt]
     - **iii.** [ʌˈtrækt]
     - **iv.** [əˈtræct]
   - **c.** *beauty*
     - **i.** [byuti]
     - **ii.** [ˈbyuti]
     - **iii.** [ˈbjuti]
     - **iv.** [ˈbjuɾi]
   - **d.** *singer*
     - **i.** [ˈsɪŋɻ]
     - **ii.** [ˈsɪngɻ]
     - **iii.** [sɪngɾ]
     - **iv.** [siŋger]
   - **e.** *otherwise*
     - **i.** [ˈʌθɻwaɪse]
     - **ii.** [ˈʌθɻwaɪz]
     - **iii.** [ˈʌðɻwaɪz]
     - **iv.** [ˈʌðɻwayz]
   - **f.** *spiked*
     - **i.** [spaiked]
     - **ii.** [spaɪkt]
     - **iii.** [spaykt]
     - **iv.** [spikt]
   - **g.** *xray*
     - **i.** [ˈɛksray]
     - **ii.** [ˈeksɹe]
     - **iii.** [ˈexre]
     - **iv.** [ˈexɹe]

8. The International Phonetic Alphabet was developed in the late nineteenth century by language teachers in France interested in creating a transcription system for teaching the pronunciation of foreign languages. Since its origination, the phonetic alphabet has been dramatically expanded to include sounds found in languages throughout the world, with the goal of representing all the sounds that are used to differentiate words in all languages. In addition, the group responsible for developing the IPA, the International Phonetic Association, has grown substantially and now has thousands of members throughout the world. Besides developing and maintaining the phonetic alphabet, the International Phonetic Association also produces a journal containing research articles on phonetics and phonetic descriptions of languages. The *Journal of the International Phonetic Association* (or JIPA) was originally published exclusively using the IPA, although it now publishes articles primarily in English. Below are two versions, one in American English and one in British English, of a brief passage (in the IPA) from a fable that has been translated into many different foreign languages in JIPA. Read it aloud and write the passage in standard English orthography.

American English

ðə noɹθ wɪnd ænd ðə sʌn wɻ dəspjuɾəŋ wɪtʃ waz ðə stɹaŋgɻ, wɛn ə tɹævəlɻ kem əlaŋ ɹæpt ɪn ə waɹm klok. ðe əgɹid ðæt ðə wʌn hu fɻst səksidəd ɪn mekəŋ ðə tɹævəlɻ tek hɪz klok af ʃʊd bi kənsɪɾɻd stɹaŋgɻ ðæn ðə ʌðɻ. ðɛn ðə noɹθ wɪnd blu æz haɹd æz hi kʊd, bʌt ðə moɹ hi blu ðə moɹ klosli dɪd ðə tɹævəlɻ fold hɪz klok əɹaʊnd hɪm; ænd æt læst, ðə por noɹθ wɪnd gev ʌp ðə ətempt. ðɛn ðə sʌn ʃaɪnd aʊt waɹmli, ænd əmiɾiətli ðə tɹævəlɻ tʊk af hɪz klok. ænd so ðə noɹθ wɪnd waz əblaɪdʒd tu kənfɛs ðæt ðə sʌn wʌz ðə stɹangɻ ʌv ðə tu.

British English

ðə nɔθ wɪnd ænd ðə sʌn wɜ dəspjutəŋ wɪtʃ wɒz ðə stɹɒŋgɹ̩, wɛn ə tɹævələ kem əlɒŋ ɹæpt ɪn ə wɔm klok. ðe əgɹɪd ðæt ðə wʌn hu fɜst səksidəd ɪn mekəŋ ðə tɹævələ tek hɪz klok ɒf ʃʊd bi kənsɪdəd stɹɒŋgɹ̩ ðæn ðə ʌðɜ. ðɛn ðə nɔθ wɪnd blu æz hɑd æz hi kʊd, bʌt ðə mɔ hi blu ðə mɔ klosli dɪd ðə tɹævələ fold hɪz klok əɹaʊnd hɪm; ænd æt læst, ðə nɔθ wɪnd gev ʌp ðə ətɛmpt. ðɛn ðə sʌn ʃɔn aʊt wɔmli, ænd əmidiətli ðə tɹævələ tʊk ɒf hɪz klok. ænd so ðə nɔə wɪnd wɒz əblaɪdʒd tu kənfɛs ðæt ðə sʌn wɒz ðə stɹɒngə ɒv ðə tu.

9. This exercise asks you to phonetically transcribe a short stretch of natural connected speech. For American English, the *How Languages Work* website includes a video clip of Daniel Hieber, a UC Santa Barbara doctoral student in linguistics, presenting a prize-winning three-minute talk on revitalizing the Chitimacha language. For British English, a set of BBC radio programs on language matters in different locations around the world produced by British anthropologist Dr. Mark Turin, can be found at http://markturin.arts.ubc.ca/bbc-series/. Alternatively, you can choose a different clip, but make sure it is: (1) publically accessible on the Internet with a simple URL and not in a site that is password-protected or requires an account; and (2) of good quality with clearly audible speech (excluding singing) by a single person. Choose a short segment of the recording consisting of at least 25 spoken words.

- **a.** Provide the URL where you found your clip and any additional details needed to direct your instructor to the specific clip that you used.
- **b.** Note the start and end times of your clip in minutes and seconds.
- **c.** Transcribe that stretch of speech in normal English spelling.
- **d.** Transcribe the words using the IPA. If there is more than one intonation unit, you may place them on separate lines.
- **e.** Make a list of the first sound from each word and describe those sounds in articulatory terms: place, manner, and voicing (for consonants) or height/backness/rounding/tenseness (for vowels).

Example

- **a.** https://hlw.id.ucsb.edu/ch02/index.html
- **b.** Starts at 0:25; ends at 0:32
- **c.** *I want you to imagine for a moment what that's like – to be the last speaker of your language, knowing that when you pass away, your language will fall silent.*
- **d.** [aɪ wantʃ ju tu ə'mædʒɪn foɹ ə 'momənt wʌt ðæts laɪk, tə bi ðə læst 'spikɹ̩ əv joɹ 'leŋgwədʒ 'nowɪŋ ðæt wɛn ju pæs ə'wei yoɹ 'leŋgwədʒ wɪl fal 'saɪlənt]
- **e.** First sound of each word:
  n: voiced alveolar nasal stop
  aɪ: diphthong – low central lax unrounded vowel moving to a high front lax unrounded vowel
  w: voiced labiovelar central approximant
  j: voiced palatal central approximant (glide)
  etc.

10. Find a speaker of a language which you have never spoken or studied and ask if they would be willing to pronounce some words for you. Transcribe the words for the parts of the hand: *hand, palm, finger, fingernail, knuckle, wrist*, and any other vocabulary the language might have. (It can be particularly interesting to ask for the words for each finger – pinky finger, ring finger, etc. – as these are often compounds with interesting meanings.) Do your best to transcribe each word in IPA. Be sure to mark any stress, tone, length, and/or nasalization that you hear.

If you come across a sound you haven't heard before, try to produce it yourself, using the speaker's feedback to improve your pronunciation. Then pay close attention to the positioning of your articulators and describe the sound using the descriptors for place of articulation, manner of articulation, voicing, vowel height, vowel backness, rounding, and tenseness. You can use the IPA chart in this book and the interactive IPA chart online as an additional resource. Your report on this study should include the following:

- **a.** Name of the language
- **b.** Name of your speaker
- **c.** One paragraph biography of the speaker (where they grew up, schooling, what other languages they learned, when)
- **d.** At least ten words transcribed in IPA, with the English translations in single quotation marks
- **e.** Phonetic descriptions of any sounds that are not also found in English, together with their associated IPA symbols.

Note: This is a challenging exercise for someone who is just beginning to study linguistics. The goal is to expose you to other languages, to give you the experience of working with a speaker of a language that is unknown to you, to teach you to listen carefully, and to begin to train you to hear and produce sounds in other languages. We don't expect perfect accuracy, but do your best! If you go on to study more linguistics, you may have an opportunity to do a fuller study of this type in a course on phonetics.

3 Phonology

Organization of Speech Sounds

KEY TERMS

- Natural class
- Minimal pair
- Phoneme
- Near minimal pair
- Allophone
- Complementary distribution
- Contrastive distribution
- Phonological rule
- Free variation
- Allomorphy

CHAPTER PREVIEW

Phonology is the study of how sounds systematically behave. We will see in this chapter that sounds often pattern together in groups with respect to where they occur and how they interact with other groups of sounds. We will learn how to analyze the phonological systems of languages by examining the distribution of sounds in words. We will see that sounds have different statuses in language: some sounds (called **phonemes**) differentiate meanings while other sounds (called **allophones**) do not. These and other complex sound patterns can be represented by formal phonological rules. We will also explore some of the competing phonetic motivations driving phonological patterns. This will allow us to understand the ways in which phonological rules are grounded in both the phonetic and the functional bases of human language.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **identify natural classes of sounds;**
- **find minimal and near-minimal pairs in a data set;**
- **locate sounds in complementary distribution;**
- **describe the environments in which allophones occur;**
- **argue for the phonemic status of sounds of a language;**
- **compare and contrast allophonic and allomorphic variation;**

- **recognize common phonological processes;**
- **discuss functional and phonetic reasons for allophones.**

3.1 Natural Classes

The notion of groups or classes of sounds was introduced earlier in Chapter 2. For consonants, we saw that phonetic features describing voicing and place or manner of articulation can be used to divide sounds into groups. For example, the alveolars of English are [t, d, n, s, z, ɹ, l], while the nasals of English are [m, n, ŋ]. For vowels, phonetic terms for height, backness, tenseness, and rounding can be used to divide vowel sounds into classes. Thus, [i, ɪ, e, ɛ, æ] are front vowels and [i, e, u, o] are tense vowels.

These same phonetic features can be used to describe groups of sounds that behave together in a phonological system. Groups of sounds that pattern together are called **natural classes**. Recall the discussion of the forms of the English past tense from Chapter 1. We saw that the past tense of regular verbs in English is formed through addition of the suffix spelled *-ed* in the orthography. Phonetically, the *-ed* suffix has three realizations. One realization is as a voiceless alveolar stop [t] in such words as *walked* [wakt], *trapped* [tɹæpt], *washed* [waʃt], *laughed* [læft], and *poached* [potʃt]. Another realization is as a voiced alveolar stop in words such as *rubbed* [ɹʌbd], *wagged* [wægd], *buzzed* [bʌzd], *judged* [dʒʌdʒd], *rhymed* [ɹaɪmd], and *planned* [plænd]. The third realization is to pronounce *-ed* as [əd] in words like *seated* [sitəd/siɾəd] (depending on your dialect), *baited* [betəd/beɾəd], *padded* [pædəd/pæɾəd], *needed* [nidəd/niɾəd], *rented* [ɹɛntəd], and *landed* [lændəd].

SIDEBAR 3.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quizzes, a guide and flowchart on phonemic analysis, a rule-writing guide, and interactive problem sets.

The choice of how to pronounce the past-tense suffix when associated with a particular word is not an arbitrary or unpredictable one that requires rote memorization of the past tense for every English word. Rather, there is a pattern that governs the selection of the realization. The [t] realization is used when the base verb form (or root) ends in a voiceless consonant, the [d] realization with verb roots ending in a voiced consonant, and the [əd] variant with verb roots ending in an alveolar stop (or, in American English, a flap).

The relationship between the root-final consonant and the selection of a past-tense variant is sensible from a phonetic standpoint. The realization [t] is voiceless, as are the consonants that trigger the [t] past tense; the realization [d] is voiced, as are the consonants that trigger the [d] past tense. The general pattern is thus one of voicing agreement between the root-final consonant and the past-tense suffix. Voicing harmony is one type of **assimilation** process, whereby two sounds come to share some property or cluster of properties. ***Assimilation is the most common type of phonological process and comes in many guises***, for example, place-of-articulation assimilation, manner assimilation, nasal assimilation, and rounding assimilation. Like other assimilation phenomena, voicing assimilation is phonetically motivated. It is articulatorily easier to maintain the same laryngeal setting (either voiced or voiceless) throughout the entire cluster that

consists of the root-final consonant and the past-tense suffix than it is to rapidly change from voiced to voiceless or vice versa.

The final realization [əd] also has phonetic grounding. It would be difficult to produce the past-tense alveolar stop immediately after another alveolar stop or flap without an intervening vowel. The schwa [ə] is the perfect "filler vowel" for such cases, because it requires relatively little phonetic effort since it is produced with the tongue near its resting position.

The variation in the realization of the past-tense suffix illustrates one of the fundamental principles guiding many phonological alternations: the drive toward minimizing articulatory effort. Both voicing assimilation and schwa insertion reduce the amount of articulatory exertion required to produce the past-tense form of English verbs. As your study of phonology progresses, the attempt to minimize articulatory effort will emerge as a recurring theme in the organization of phonological systems. The goal of the phonologist is not merely to *describe* the patterns found in languages but also to *explain* the forces motivating these patterns, which are often (though not always) phonetically driven.

Given the importance of phonetic considerations in shaping phonological systems, it is not surprising that natural classes play a crucial role in the study of phonology. Consequently, recognizing natural classes is an important analytical skill to develop. ***In order for a set of sounds to form a natural class, two criteria must be met: first, the sounds must all share one or more phonetic features; second, the sounds must be the complete set of sounds sharing those features in the given data***. To demonstrate the application of these two criteria, consider the IPA chart for English consonants in Table 3.1.

Keeping in mind the two criteria for a natural class, consider the following sets of consonants and determine whether or not they constitute natural classes.

1. p t k ʔ
2. m n ŋ
3. t d n ɾ s l ɹ
4. b m

TABLE 3.1 The consonants of English

	Bilabial		Labiodental		Dental		Alveolar		Postalveolar		Palatal	Velar		Glottal
Oral stops	p	b					t	d				k	g	ʔ
Affricates									tʃ	dʒ				
Nasal stops		m						n					ŋ	
Flap (tap)								(ɾ)						
Fricatives			f	v	θ	ð	s	z	ʃ	ʒ				h
Central approximants		w						ɹ			j		w	
Lateral approximants								l						

The first group of sounds satisfies the first condition for being a natural class, since all of the sounds are voiceless stops. They also meet the second criterion, since the data set comprises the entire set of voiceless stops in the English IPA chart. Set (1) is thus a natural class. Notice that we need the two phonetic features "voiceless" and "stop" to correctly define this natural class. If we said only that the natural class is the set of voiceless sounds, this would not be adequate since there are many voiceless sounds in the data set that are not in Set (1), e.g., the voiceless fricatives. Nor could we simply describe the natural class as "stops," since Set (1) is missing all of the voiced stops, both oral and nasal.

The second group of sounds also satisfies the first condition since all of the sounds are nasals. Set (2) also meets the second condition, since the sounds constitute the entire group of nasals in the data set.

The third group is a little trickier. It is true that the sounds in Set (3) satisfy the first condition for being a natural class, since they are all alveolars. However, Set (3) is not an exhaustive set of the alveolars in the data: it is missing [z]. For this reason, the third group is not a natural class.

The fourth group is a small set of sounds, which have in common that they are voiced bilabial stops. Set (4) is also the complete set of voiced bilabial stops in English, so we have a natural class. Notice that we need all three descriptive features, "voiced," "bilabial," and "stop," to describe this natural class. The omission of any of these descriptors would mean that the second criterion for being a natural class, that the sounds be an exhaustive set for the given data, would not be met.

STOP AND REFLECT 3.1 **NATURAL CLASSES IN ENGLISH**

Use the two criteria of sharing one or more phonetic features and of comprising all of the sounds with those features in the language to determine whether the following groups of consonants constitute natural classes in English. You can check your answers in Sidebar 3.2 on the next page.

a. ɹ, l
b. g, ŋ, w
c. p, b, t, d, k, g
d. v, ð, ʒ
e. ʃ, ʒ, tʃ, dʒ

The requirement that a natural class be the exhaustive set of sounds sharing the specified features for a given data set means that ***the same set of sounds can be a natural class in one language but not in another language***. Consider the inventory of consonants in Chickasaw, an American Indian language spoken in Oklahoma (Table 3.2).

Most of the consonants in Chickasaw also occur in English, with the exception of the voiceless lateral fricative [ɬ]. This sound is similar to the lateral approximant [l], except that [ɬ] is voiceless and is produced with turbulence at the constriction point. It has a sound much like that of English [l] when it occurs immediately after a voiceless stop, such as in the word *play*.

TABLE 3.2 The consonants of Chickasaw

	Bilabial		Labiodental	Alveolar	Postalveolar	Palatal	Velar	Glottal
Stops	p	b		t			k	ʔ
Affricates					tʃ			
Nasals		m		n				
Central fricatives			f	s	ʃ			h
Lateral fricatives				ɬ				
Central approximants		(w)				j	(w)	
Lateral approximants				l				

Consider the following set of sounds: [p, b, t, k, ʔ]. In English, this set of sounds would not be a natural class; it is missing [d] and [g], which would be necessary to form the complete set of oral stops in English. However, this same set of sounds is a natural class for Chickasaw, since it is the exhaustive set of Chickasaw oral stops.

Now let us consider the set of sounds [t, s]. These sounds have in common that they are voiceless. This is insufficient for describing a natural class in either English or Chickasaw, however, since there are other voiceless sounds in both languages. If we add the feature "alveolar," we fare better in English at least, since [t, s] is the exhaustive set of English voiceless alveolars. However, [t, s] still does not constitute a natural class in Chickasaw, since Chickasaw has a third voiceless alveolar that English does not, namely the voiceless alveolar lateral fricative [ɬ]. For this reason, [t, s] is a natural class in English but not in Chickasaw.

Natural classes exercises on Breton, Efik, and Romanian

3.2 Phonemic Analysis

3.2.1 Phonemes and Minimal Pairs

Different kinds of phonological relationships can hold between sounds in a language. First, some sounds can be used to distinguish words with different meanings. For example, the voiceless bilabial stop [p] and the voiceless alveolar stop [t] in English can be used to differentiate words. There are thus many pairs of words such as *pan* vs. *tan, pill* vs. *till, spill* vs. *still, pop* vs. *pot*, and *lip* vs. *lit*, which are differentiated only by whether they have [p] or [t] in a particular position. The occurrence of these sounds is unpredictable and simply an arbitrary property of individual words. In other words, speakers must memorize each word as having either [p] or [t] in the proper place. This is different from the situation with the English past-tense suffixes, where one could predict the past-tense realization based on the root-final

consonant. There is no need for speakers to memorize the past-tense form of each word, with the correct variant of the past-tense suffix.

STOP AND REFLECT 3.2 **PHONEMES ARE UNPREDICTABLE**

In English, [p] and [t] distinguish words with different meanings. Thus, we cannot predict which sound will occur in a particular environment. For example, consider the environment [__ost] (written in IPA). Will this word begin with [p] or [t]?

Both sounds work equally well in this environment. Using [t] will give us *toast*, while [p] will give us *post*. Thus, the occurrence of [p] and [t] is unpredictable in English.

SIDEBAR 3.2

Answers to Stop and Reflect 3.1:

a. Yes: alveolar approximants

b. Yes: voiced velars

c. No: but if [ʔ] were added it would be the complete set of stops

d. No: but if [z] were added, it would be the complete set of voiced fricatives

e. Yes: postalveolars

Pairs of words like *pan* vs. *tan, pill* vs. *till, spill* vs. *still, pop* vs. *pot*, and *lip* vs. *lit* are called minimal pairs. **Minimal pairs *consist of two words which have different meanings and differ in only one sound occurring in the same environment***. In this case, the minimal pairs differ only in the presence of [p] or [t] in a certain position in the word. In the first two pairs, *pan* vs. *tan* and *pill* vs. *till*, [p] and [t] occur word-initially. In *spill* vs. *still*, [p] and [t] occur between [s] and [ɪ]. In the last two pairs, *pop* vs. *pot* and *lip* vs. *lit*, [p] and [t] occur word-finally.

Minimal pairs can be found for many different pairs of sounds in English. For example, the minimal pair *rain* vs. *raid* differs only in the final consonant, [n] vs. [d]; the minimal pair *boot* vs. *suit* differs only in the initial consonant, [b] vs. [s]; the minimal pair *seat* vs. *sit* is differentiated only by the vowel, [i] vs. [ɪ]; and the minimal pair *made* vs. *mood* is distinguished only by the vowel, [e] vs. [u].

It is also possible to find minimal triplets, in which three words are distinguished by a single sound, e.g., *made* [e] vs. *mood* [u] vs. *mode* [o]. In English, one can even find quadruplets (e.g., *seat* vs. *sit* vs. *sat* vs. *suit*) as well as sets consisting of even more members that are distinguished by single sounds. All of these **minimal sets** are useful for illustrating that certain sounds in a language are used to differentiate words.

The requirement that minimal pairs have a single sound difference in the same environment excludes certain pairs of words from constituting minimal pairs. For example, the pair of words *mat* [mæt] and *mole* [mol] are not a minimal pair. Even though these words have different meanings and even though the first consonant is the same in both words, they differ with respect to *two* sounds: the vowel and the final consonant. The pair of words *slot* [slat] and *late* [let] is also not a minimal pair, since there are two sound differences between the words. The first word has an [s] not present at the beginning of the second word, and the vowels in the two words also differ. Finally, even though there is only one sound difference between the two words *pat* and *nap*, they are not a minimal pair since the sounds that differ occur in different environments.

STOP AND REFLECT 3.3 **MINIMAL PAIRS PRACTICE**

Determine whether each of the following pairs of words constitutes a minimal pair. You can check your answers in Sidebar 3.3 on the next page.

1. *sled* vs. *slayed*
2. *face* vs. *case*
3. *hot* vs. *shot*
4. *grout* vs. *clout*
5. *remain* vs. *restrain*
6. *singer* vs. *finger*
7. *stamper* vs. *scamper*
8. *devil* vs. *revel*
9. *attack* vs. *aback*

The concept of minimal pairs is important in phonology, since minimal pairs demonstrate the contrastive nature of sounds. Thus, [p] and [t] are contrastive, as they contrast words with different meanings. The sounds [n] and [d], [e] and [u], and so on, are also contrastive. ***Sounds that are used to contrast words with different meanings have a special status in phonology: they are called*** **phonemes**. Phonemes form the building blocks of minimal pairs (or minimal sets of words). For this reason, changing the phonemes in a word often produces completely different words. For example, if you replace the [p] in the beginning of *pile* with a [t], the result is a different word, *tile*. Phonemes are thus an arbitrary property of individual words: in order to know a word, you must know which phonemes occur in it and how they are ordered.

Given the relationship between minimal pairs and phonemes, we can use minimal pairs to diagnose whether or not sounds are phonemes in a language. If two sounds in question are phonemes, we expect to find minimal pairs differentiated only by the two target sounds. In reality, though, sometimes it is not possible to find perfect minimal pairs differentiated by only a single sound for every phoneme. Sometimes it is necessary to settle for **near-minimal pairs**. To illustrate the usefulness of near-minimal pairs, consider the pair of sounds [ð] and [ʒ] in English. It is difficult to find minimal pairs to demonstrate the phonemic status of these two sounds in English. One possible minimal pair is *bathe* vs. *beige* in which the relevant contrast occurs in final position.

However, some speakers pronounce the second word with a voiced postalveolar affricate [dʒ] rather than the fricative [ʒ]. For these speakers, there are probably no true minimal pairs for [ð] and [ʒ]. Does this mean that these two sounds are not separate phonemes in English? No, because it is possible to find a near-minimal pair for the two sounds: *leather* vs. *pleasure*. Clearly, this is not a minimal pair as there is more than one difference between the two words. Not only do the words differ in whether they have a [ð] or a [ʒ], but *pleasure* also has an extra sound at the beginning of the word that *leather* does not. Still, *pleasure* and *leather* qualify as a near-minimal pair, since the sounds *immediately adjacent* to the target sounds, [ð] and [ʒ], are the same in both words: [ɛ] before the target sound and [ɹ] (American

English) or [ɜ] (British English) after it. Like minimal pairs, near-minimal pairs are usually sufficient to demonstrate that two sounds are separate phonemes in a language.

3.2.2 Allophones and Complementary Distribution

Phonemes have different phonetic realizations depending on where they occur. For example, [p] is not pronounced identically in the words *pin* and *spin*. If you hold your hand in front of your mouth while saying the two words, you will notice that the [p] in *pin* has a very clear puff of air upon release, while the [p] in *spin* largely lacks this salient puff of air. The puff of air associated with the [p] in *pin* is called **aspiration**. The [p] in *pin* is thus an aspirated stop, represented as [pʰ] in the IPA. A [p] occurring immediately after an [s], as in *spin*, on the other hand, is an unaspirated stop and is simply represented as [p].

SIDEBAR 3.3

Answers to Stop and Reflect 3.3: Of the nine pairs of words in Stop and Reflect 3.3, six constitute minimal pairs (Examples 1–3 and 7–9), while three (Examples 4–6) do not. If this was not your answer, perhaps you were misled by English orthography. Try transcribing each word in the International Phonetic Alphabet. You will see that word pairs 1–3 and 7–9 are obviously minimal pairs.

Word pairs 4–6 are not minimal pairs, since they all differ in terms of more than one sound. *Grout* and *clout* differ in two sounds: both the initial stop and the following liquid; *restrain* has three consonants after the first vowel while *remain* has only one; and *finger* has a distinct voiced velar stop [g] after the velar nasal, while *singer* does not for most speakers of English (a phonetic distinction not represented in the English spelling).

Aspiration, in fact, is a regular feature of voiceless stops in English when they occur in word-initial position. As with the bilabial stop in *spin*, the alveolar and velar stops [t] and [k] also have variants differing in aspiration depending on context. Thus, we have aspirated stops word-initially in *take* and *come* but unaspirated stops after [s] in *stake* and *scum*.

Crucially, the [p] in both *pin* and *spin* is associated with the same phoneme in English, since there are no minimal pairs differentiated solely on the basis of whether they have unaspirated [p] or aspirated [pʰ] in the same position. Rather, the two kinds of [p] are variants of each other that are predictable from the context. When [p] occurs word-initially, it will always be aspirated; when [p] occurs after [s] it will always be unaspirated. Therefore, there is no need to memorize whether a given word has an aspirated or an unaspirated [p], since aspiration is predictable from the context. The relationship between aspirated and unaspirated [p] in English is an allophonic one, in which aspirated [pʰ] and unaspirated [p] are **allophones** of the same phoneme. ***Two sounds are allophones if they occur in mutually exclusive environments, i.e., if one allophone occurs in one set of contexts and another allophone occurs in another set of contexts***. Stop and Reflect 3.4 illustrates this by demonstrating that the occurrence of allophonic variants is predictable. There is no single environment in which both allophones can occur. This basic criterion for allophones is called complementary distribution.

So far we have seen that pairs of sounds may occur in two types of distribution. One possibility is for two sounds to have a **contrastive distribution**, meaning that they can occur in the same environment, in words with different meanings. This describes the type of distribution found in minimal pairs, which proves that two sounds are separate phonemes. The second type of distribution is **complementary distribution**, which arises when two sounds occur in a different set of environments from each other. Complementary distribution indicates that two sounds are allophones of the same phoneme.

STOP AND REFLECT 3.4 **ALLOPHONES IN COMPLEMENTARY DISTRIBUTION ARE PREDICTABLE**

Can you predict whether the voiceless stops in the following words will be aspirated or unaspirated?

1. *pore*
2. *tore*
3. *core*
4. *pool*
5. *tool*
6. *cool*
7. *spore*
8. *store*
9. *score*
10. *spool*
11. *stool*
12. *school*

You can check your answer by pronouncing each word with your hand in front of your mouth. Notice that words 1–6 all have the puff of air referred to as aspiration while words 7–12 do not.

Now consider two nonsense words: *tobe* and *stobe*. Can you predict which will have an initial aspirated stop and which will have an unaspirated stop? Check your answer by pronouncing each of these two words. If your prediction was that the stop in *tobe* would have aspiration and *stobe* would not, you were right. Any word, even a nonsense word, will conform to the pattern we've established. This is why we say that the presence of aspiration on voiceless stops in English is predictable.

In phonology, there are conventions for representing phonemes and allophones. It is customary to represent separate phonemes between slashes // and allophones in brackets [ ]. Brackets are also used in order to remain neutral about whether a sound is a phoneme or merely an allophone; for example, if you are examining new data and haven't yet determined the status of a sound, or if the status of a sound as a phoneme vs. an allophone is not crucial to the point being made.

We may now summarize the relationship between the sounds [p], [pʰ], [t], and [tʰ]. (Notice that I am using the brackets here for a moment in order not to anticipate the conclusion about their phonemic statuses.) We have seen that [p] and [t] are in contrastive distribution, since they occur in the same position in minimal and near-minimal pairs. We have also learned that aspirated stops are in complementary distribution with unaspirated stops, since they occur in different environments and do not form the basis for minimal pairs. The relationship between the four sounds can thus be represented as in Figure 3.1.

Figure 3.1 shows that the phoneme /p/ (written in slashes) has two allophones: an unaspirated allophone occurring after [s] and an aspirated allophone occurring word-initially.

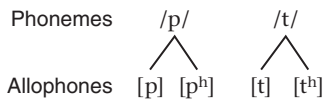


Figure 3.1 The phonemes /p/ and /t/ and their allophones

Likewise, the phoneme /t/ has two allophones: an unaspirated allophone occurring after [s] and an aspirated allophone occurring word-initially. Note that it is common for one of the allophones of a phoneme to be identical to the phoneme itself, just as is the case with each of the unaspirated allophones here. The phoneme that is associated with the allophones is often termed the **underlying phoneme**, while the other allophones linked to the phoneme are often called the **surface allophones**. The assumption here is that words are memorized with the underlying phonemes, since this information is unpredictable and must be learned for each word. The surface forms then arise through a process or series of processes that give the underlying phonemes their actual phonetic realizations.

The phonemic status of the same sound (i.e., whether it is a separate phoneme or an allophone) may differ from language to language. To demonstrate this, let us consider some data from Hupa, an American Indian language spoken in northwest California (Table 3.3). The sounds whose phonemic status are in question are the pair [t] and [tʰ] and the pair [ɪ] and [u]. Some of the special symbols used are explained in Textbox 3.1.

TEXTBOX 3.1 **SOME HUPA PHONETIC SYMBOLS**

- An apostrophe after a stop or affricate means that it is an ejective.
- [ʍ] indicates a voiceless labial-velar fricative, like the *wh* that some English speakers pronounce in words like *why* and *which*.
- [ʷ] in 'he is crying' indicates that the preceding sound has lip rounding associated with it.
- [ː] after a vowel indicates that the vowel is pronounced as lengthened.
- [ɬ] indicates a voiceless lateral fricative.

SIDEBAR 3.4
Ejectives were introduced in Textbox 2.6. They are also found in the Language Profiles on Kabardian (LP1), Nuuchahnulth (LP5), and Tsez (LP7).

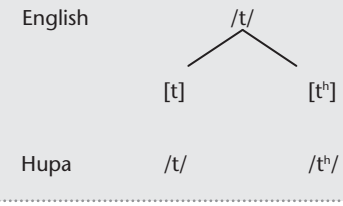
First, looking at the pair [t] and [tʰ], it is clear that they are separate phonemes since *your mouth* and *your father* form a perfect minimal pair for these two sounds. Furthermore, *three*

TABLE 3.3 Data from Hupa

tʰaːqʼ	'three'
taxʷeːt	'how'
nɪtaʔ	'your mouth'
nɪtʰaʔ	'your father'
ɬɪtʃʼuʍ	'sand'
tʰaːkʲʼuw	'sweathouse'
tʰɪn	'trail'
ʍɪmɪtʼ	'my belly'
tʃʼɪtʃʷʰuw	'he is crying'

and *sweathouse* both form a near-minimal pair with *how*, since *three* and *sweathouse* both begin with an aspirated [tʰ] before the vowel [a] and *how* begins with an unaspirated [t] in the same environment. We thus conclude that unaspirated [t] and aspirated [tʰ] are separate phonemes in Hupa, whereas in English, they are allophones of the same phoneme. This difference between the status of the sounds in English and in Hupa is illustrated in Sidebar 3.5.

SIDEBAR 3.5



Turning to [ɪ] and [u], we know that these sounds are separate phonemes in English on the basis of minimal pairs such as *sit* vs. *suit* and *tin* vs. *tune*. In Hupa, however, we do not find minimal pairs differentiated only by these two vowels. Nor are there are any near-minimal pairs for [ɪ] and [u] in the data above. This can be determined by creating a chart with the environments in which each of the target sounds occur. In making such a chart, it is important to include both the sound immediately preceding the target sound and the sound immediately following it. A chart for the target vowels [ɪ] and [u] in the Hupa data is given in Table 3.4. The line between the preceding and following sounds is a placeholder for the target sound.

If there were a minimal or near-minimal pair in the data, we would be able to find an environment in Table 3.4 that was identical for the two target sounds; however, this is not the case. Therefore, we do not have a contrastive distribution and the two sounds are not separate phonemes; [ɪ] and [u] thus stand in a different relationship in Hupa than in English. By process of elimination, this means that [ɪ] and [u] are allophones of the same phoneme in Hupa. If this is in fact true, they should be in complementary distribution, meaning that we should be able to find a different set of environments for each of the two sounds. To do this, we must ask whether there is any environment in which one sound occurs throughout the data, to the exclusion of the other sound.

TABLE 3.4 Vowel environment chart for [ɪ] and [u] in the Hupa data

ɪ	u
n__tʰ	tʃ'__ʍ
n__t	kʲ'__w
ɬ__tʃ'	tʃʷʰ__w
tʰ__n	
ʍ__m	
m__t'	
tʃ'__tʃʷʰ	

SIDEBAR 3.6
Phonemic analysis is an important skill and much of your homework in phonology will focus on this. For further exemplification of this type of analysis, see the Kabardian Language Profile, which builds directly on this chapter.

Keep in mind that this environment can involve either the preceding or the following sound, or both, and also that the environment could be expressed in terms of a natural class.

In fact, in Table 3.4, we can see that the [u] always occurs before a labial-velar sound, while the [ɪ] never occurs in this environment. We thus conclude that [ɪ] and [u] are in complementary distribution. It is typically easier to characterize the environment for one of the target sounds than for the other. In this case, it is easier to describe the environment in which [u] occurs, since the positions in which [ɪ] occurs are quite diverse. It is sufficient to give the environment for [u] and to state that [ɪ] occurs "elsewhere," meaning that it occurs in the environments in which [u] does not occur.

As a final step in our analysis, we need to formulate a summary statement of the relationship between the target sounds in the language. This statement might be as follows:

> In Hupa, [ɪ] and [u] are allophones of the same phoneme. [u] occurs before labial-velars and [ɪ] occurs elsewhere.

Guide to phonemic analysis

We might want to take the analysis one step further and decide which of the allophones is the underlying phoneme and which are the surface allophones. It is common to assume that the allophone that occurs in a more diverse set of environments (i.e., in the "elsewhere" set of contexts) is the underlying phoneme, and to derive the other allophone(s) by a rule. For the Hupa data, this would mean that /ɪ/ is the underlying phoneme and that [u] occurs before labial-velars. Our final analysis might thus be expanded as follows:

> In Hupa, [ɪ] and [u] are allophones of the same phoneme. /ɪ/ is the underlying phoneme. /ɪ/ becomes [u] before labial-velars.

Once you have an analysis of phonemic data, it is also possible to make predictions about further data that you might not yet have seen. For example, after it has been determined that [ɪ] and [u] are allophones in Hupa and that [u] occurs before labial-velars, we can predict that any new Hupa data should conform to these generalizations. Thus, we should not find any examples of an [ɪ] sound before a labial-velar consonant. In fact, there is an even more interesting prediction that we can make for Hupa. You may recall that Hupa has a labialized velar fricative [xʷ], which occurred in the form [taxʷeːt] 'how.' This sound is similar to the German sound at the end of the composer Bach's name, but also has lip rounding. Given that [xʷ] is both labial and velar, we would expect it to trigger the [u] allophone. This prediction can be easily tested. The name that the Hupa use for themselves is [naːtʰɪnuxʷ], which literally means 'where the trail leads back.' (The root for 'trail' [tʰɪn] appeared earlier in Table 3.3.) As expected, there is an [u] before the final [xʷ], providing further evidence for our assimilation rule and our proposed phonetic explanation for it. This is one example of a local phonological process; some non-local phonological processes are described in Textbox 3.3.

3.2.3 Writing Phonological Rules

The statement about the change from underlying /ɪ/ to surface [u] in Hupa can be written more formally as a rule using features, as in (1).

(1) /ɪ/ → [u] / __ [+labial-velar]

Rule (1) is read as follows: /ɪ/ becomes [u] in the environment before sounds that are labial-velar. It is common in phonology to formalize relationships between phonemes and allophones using rules. The Hupa rule of vowel rounding targets a single sound, the vowel /ɪ/. As we have seen, allophones often refer to sets of sounds that constitute natural classes. The environment that triggers rounding in Hupa is the natural class of labial-velar consonants. Natural classes of sounds targeted by a rule can also be expressed in rules using features. For example, members of the set of voiceless stops in English are realized with aspiration in word-initial position. Aspiration can be written using features as in (2).

(2) [+stop, –voice] → [+aspirated] / # __

Rule (2) targets English sounds characterized by the features [+stop] and [–voice], changing them to their [+aspirated] counterparts in the environment after a word boundary, written with a # sign. Another way to write this rule is to replace the feature [+stop] with the feature [–continuant]. Sounds that are [–continuant] are produced with a complete closure in the oral tract. Sounds fitting this description include both the oral and the nasal stops. If you continue in phonology, you will learn more about the features used by phonologists to write rules. In some instances, as is the case for stops, phonological features differ from phonetic features. The reason for the occasional divergence between phonetic and phonological features lies in the differing goals of phoneticians and phonologists. Phoneticians are primarily interested in providing an accurate and maximally transparent description of sounds, whereas phonologists are focused on describing the patterning of sounds in a language in as succinct a manner as possible.

Rule writing guide

It is helpful to become accustomed to reading and writing phonological rules. Further examples of rules are given in Textbox 3.2; there is also a guide to rule writing available on the website.

3.2.4 Functional and Phonetic Reasons for Allophones

While our analysis of the Hupa vowels may be sufficient for most purposes, it is also worthwhile to take a step back to ponder why this alternation might be taking place. In this case, the motivation is clearly phonetic in nature. Labial-velar sounds are produced with lip rounding, just like the allophone [u]. It is natural for an unrounded vowel to assimilate in rounding to an adjacent consonant with lip rounding. It is also natural for the vowel adjacent to the labial-velar to be pronounced with a backer articulation, since a labial-velar has a velar component. The conversion from /ɪ/ to [u] before labial-velars in Hupa is thus a phonetically natural process of assimilaton.

TEXTBOX 3.2 **EXAMPLES OF PHONOLOGICAL RULES**

Phonological rules are simple notational equivalents of what could be written in prose. They allow for a succinct characterization of phonological patterns and a clear presentation of the essential facts. Several types of rules are given below with their prose equivalents.

/i/ → [j] /_____ V

"The phoneme /i/ is pronounced as a glide before a vowel."

Ø → [p] / [m] _____ [θ]
"A [p] is inserted between an [m] and a [θ]."
(Example: English *warmth*)

V → Ø / # [p] ___ [t]
[–stress]

"Unstressed vowels are deleted between a word-initial [p] and a following [t]."
(Example: English *petition, potato*)

C → [–voice] / _____ #
"Consonants devoice in word-final position."

/t, d/ → [ʧ, ʤ] / _____ [j]
or
[alveolar stops] → [palato-alveolar] / _____ [palatal glide]
"The phonemes /t/ and /d/ are realized as palato-alveolar affricates before a palatal glide."
(Example: English *betcha* from *bet you*)

Many phonological phenomena such as assimilation seem to be driven by the goal of reducing the amount of work required of the vocal organs. Effort reduction, however, is not the only force behind phonology. Another important consideration is **perceptual salience**; ***phonological systems tend to be constructed in a way that increases the perceptual distinctness of sounds from one another***. Perceptual salience plays an important role in driving certain phonological processes, including **dissimilation**, the process by which a sound changes to become less like a nearby sound. For example, in Finnish, when two /ɑ/ (low back unrounded) vowels might otherwise occur in adjacent syllables, the second dissimilates to /o/ when the plural suffix *-i* is added, as shown in Table 3.5. The two vowels thus become different from each other; the second dissimilates from the first.

Since we are thinking about phonetic motivations, let us ponder whether the aspiration of word-initial stops in English is also phonetically natural. In fact, aspiration may be viewed as a natural kind of strengthening process, called **fortition**. Word-initial position is a common locus of fortition, which can take many forms, such as the change from a fricative to a stop or the change from an approximant to a stop or fricative. This is probably because word-initial sounds play such an important role in word recognition. The stronger and more perceptible the first sound of a word, the easier it will be for the listener to correctly hear the word. Initial fortition thus seems to be driven by considerations of perceptual salience.

TABLE 3.5 Examples of vowel dissimilation in Finnish

marja	'berry'	*sɑnɑ*	'word'
marjo-isːɑ	'in the berries'	*sɑno-isːɑ*	'in the words'
marjo-istɑ	'from the berries'	*sɑno-istɑ*	'from the words'

TEXTBOX 3.3 **LOCAL AND LONG-DISTANCE ASSIMILATION**

Most assimilation processes are like the English past-tense voicing assimilation and the Hupa rounding assimilation in that they are conditioned by immediately surrounding sounds. Processes governed by an adjacent environment are called **local**. While most assimilation processes are local, there are some that are non-local or **long distance**. One common type of long-distance assimilation is **vowel harmony**, which is found in many Ural-Altaic languages, such as Finnish, Hungarian, and Turkish. The most common type of vowel harmony involves assimilation in vowel backness. In a language with prototypical front-back vowel harmony, all vowels in a word must agree in backness. This means that there are multiple forms of suffixes containing a vowel that differ in vowel backness.

To take an example from Finnish, the inessive suffix, which means 'inside,' has two allomorphs. The variant containing a front vowel (*-sːæ*) occurs after roots with front vowels, e.g., *kylæsːæ* 'in the village,' whereas the allomorph containing a back vowel (*-sːa*) appears after roots with back vowels, e.g., *talosːa* 'in the house.' Crucially, the consonants intervening between vowels are typically ignored by vowel harmony. There are other types of vowel harmony systems involving other dimensions, including lip rounding (e.g., in Turkish) and tongue root advancement (e.g., in Akan and other West African languages). Consonant harmony systems are also attested. Some types of harmony affecting consonants include nasality, voicing, and backness.

SIDEBAR 3.7

Finnish is the subject of Language Profile 4. The phonology – including the interesting pattern of vowel harmony referred to in Textbox 3.3 – is discussed in Section LP4.2.1 in the Finnish Language Profile.

The opposite of fortition is **lenition**, which is a weakening process by which consonants become less consonant-like and more vowel-like. For example, some voiced stops in Spanish weaken to sounds that are more fricative or approximant-like after vowels. Thus, the first "d" in the Spanish word *dedo* 'finger' is a true voiced stop, but the second one is pronounced quite similarly to the English voiced interdental fricative [ð]. In contrast to fortition, lenition is often driven by considerations of articulatory ease. In the Spanish example, it is easier to produce a fricative or approximant than a full stop when the sound is surrounded by vowels.

The goals of reducing effort and of maximizing perceptual distinctness often conflict, since it takes more effort to make sounds more distinct. To see this, compare the vowel contrast between /i/ and /u/ with another contrast between /ə/ and /ʌ/. The first contrast is perceptually more robust, since /i/ and /u/ sound very different from each other; one vowel is high and front, while the other is high and back. This contrast, however, is relatively difficult to execute articulatorily, since both /i/ and /u/ require tongue positions that are far from the rest position of the tongue in the center of the mouth. The contrast between /ə/ and /ʌ/, on the other hand, is relatively easy from an articulatory standpoint, since both vowels are close to the tongue's neutral rest position in the middle of the mouth. However, this contrast is relatively subtle from a perceptual standpoint, as the two vowels are acoustically quite similar. The perceptual proximity of /ə/ and /ʌ/ is, in fact, easy to verify if you ask someone else to produce the two in isolation and try to guess which one is which.

The phonological systems of languages are the result of compromise between the two goals of minimizing articulatory effort and maximizing perceptual distinctness. The tension between these two goals is described in more detail in Textbox 3.4. One

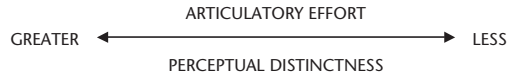
important corollary of this compromise is that languages seek to exert effort only where the perceptual payoff will be greatest. In contexts where the perceptual distinctness is impoverished to begin with, effort will be minimized even if this further reduces perceptual distinctness.

Let us again consider some data from Hupa. Recall that Hupa has a phonemic contrast between aspirated and unaspirated stops. In fact, this contrast is limited to certain contexts; it is not found at the end of roots, a position where there is usually no following vowel. In root-final position, only unaspirated stops occur. This positional restriction against the aspirated vs. unaspirated stop contrast is phonetically sensible; it is difficult to hear whether a consonant is aspirated if it is not released into a following vowel. To make final aspiration audible, a speaker would need to exert additional articulatory effort, such as creating a larger laryngeal opening or using greater subglottal pressure to increase the aspiration noise. Even with this additional effort, though, the contrast would still not be as perceptually salient as when the stop is followed by a vowel. Rather than expend all of that articulatory effort for a relatively small increase in perceptual distinctness, speakers have neutralized the contrast between aspirated and unaspirated stops in root-final position. Speakers have thus simplified this aspect of the language, saving articulatory effort in the precise environment where the payoff of perceptual distinctness would be minimal.

TEXTBOX 3.4 **THE CORRELATION BETWEEN PERCEPTUAL DISTINCTNESS AND ARTICULATORY EFFORT**

The more articulatory effort we put into the production of sounds, the more distinct they become. We need to make distinctions in language so that we can convey the myriad ideas that we use to communicate; the more sounds we distinguish, the easier it will be to differentiate among the thousands of words in a language. The opposite pull – toward routinization, rapidity, and ease of articulation – results in a saving of articulatory effort, but a loss of perceptual distinctness.

Thus, we can see that these two forces are correlated:



Since we want *greater* perceptual distinctness but *less* articulatory effort, the two forces are in conflict, pulling in both directions and creating tensions that result in complex phonological patterns.

3.2.5 Free Variation

We have seen that sounds can have different relationships in phonology. Some sounds have contrastive distribution and are phonemes, while other sounds are in complementary distribution and are allophones. There is one more type of relationship that sounds can have. A single sound can have two different variant pronunciations in the same word. For example, there is more than one way to pronounce the final consonant in the word *bad* without any change in meaning. One possible realization of the final [d] is with a release, just like when [d] occurs before a vowel. Another possibility is for the final [d]

to lack a release. The IPA symbol for an unreleased consonant is ˺ (written after the unreleased consonant). The two variants for *bad* are thus [bæd] and [bæd˺]. These two possible realizations for word-final [d] are not limited to only the word *bad* but can occur for any d-final word in English. Moreover, it is not only with [d] that this difference is found; in general, English stops in word-final position may be either released or unreleased. For example, *bag* can be pronounced either [bæg] or [bæg˺], *tube* can be pronounced either [tʰub] or [tʰub˺], *cat* can be realized either as [kʰæt] or [kʰæt˺], etc. ***This situation, in which two different sounds occur in the same environment in the same word, is called*** **free variation**. We can thus say that released and unreleased stops are in free variation word-finally in English.

3.2.6 Allomorphy

We have seen that the English past-tense ending *-ed* has three different phonetic realizations that depend on the final consonant of the root. If the root-final consonant is voiceless, the past tense is realized as [t], e.g., *walked* [wakt] or *sipped* [sɪpt]. If the root-final consonant is voiced, the past tense surfaces as [d], e.g., *robbed* [ɹabd] or *seized* [sizd]. If the final consonant is an alveolar stop or flap, the past tense is realized as [əd], e.g., *rented* [ɹɛntəd] or *waited* [weɾəd]. The past-tense ending, like any suffix, contains information that is crucial to the interpretation of a word. The term for a meaningful part of a word that cannot be further subdivided is a **morpheme**. All roots, suffixes, and prefixes are morphemes, since they contribute meaning to the words in which they appear. Morphemes are discussed further in Chapter 4 on morphology. For our purposes, what is crucial about morphemes is that they often come in several phonetic variants, which are conditioned by context. The morpheme variants that occur in complementary distribution are termed **allomorphs**, just as variants of phonemes that occur in complementary distribution are termed allophones. As we saw earlier for the past tense in English, ***allomorphs are often conditioned by the same phonetic motivating forces that govern the occurrence of allophones***.

Suffixes and other affixes are not the only morphemes that may have allomorphs. It is possible for roots to have multiple allomorphs. For example, roots ending in /t/ in English have different allomorphs depending on the context in which they occur. Consider the verb *cite* which ends, when uttered in isolation, in an unaspirated /t/, either released or unreleased, as we just saw in the discussion of free variation. If we add the adjectival suffix *-able* to the root *cite*, the final /t/ changes from an alveolar stop to a flap (in American English). Thus, *citeable* is pronounced as ['saɪɾəbl̩] in American English. The flap is the regular realization of alveolar stops between a stressed vowel and an unstressed vowel in American English. Because the suffix *-able* is unstressed in the word *citeable*, this creates the proper environment for the allomorph of *cite* that ends in a flap. A third allomorph arises when we add the suffix *-ation* to *cite* to produce *citation*, pronounced [saɪ'tʰeʃn̩]. The /t/ at the end of the root is now realized as an aspirated stop because the suffix *-ation* creates the correct environment for stop aspiration: the position immediately before a stressed vowel. The root *cite* thus has three allomorphs in total in American English (two in British English, which lacks the flap), differing in the realization of the final consonant. One, ending in unaspirated [t], surfaces when there are no

suffixes. Another, ending in a flap [ɾ], occurs in American English after a stressed vowel and before an unstressed vowel. The third and final allomorph, ending in aspirated [tʰ], occurs before a stressed vowel. The allomorphs discussed here are summarized in Textbox 3.5.

TEXTBOX 3.5 **THE THREE ALLOMORPHS OF CITE**

cite	[sait]	/t/ is realized as [t] in word-final position
cit-able	[ˈsaɪɾ-əbl̩]	/t/ is realized as [ɾ] following a stressed vowel in American English (but as /t/ in British English)
cit-ation	[saɪˈtʰ-eʃn̩]	/t/ is aspirated [tʰ] before a stressed vowel

It is important to note that all of the rules responsible for the allomorphs of the root *cite* are consistent rules of English that occur even in words for which there are not multiple allomorphs. All voiceless stops are aspirated before stressed vowels (as in words like *peach, top*, and *kite*), and all alveolar stops between a vowel and an unstressed vowel become a flap in American English (as in words like *city, pity*, and *shadow*). This means that other roots ending in /t/ will also have several allomorphs if they take suffixes with the right shape to trigger rules such as aspiration or flapping. For example, the root *wit* has an allomorph ending in unaspirated [t] when pronounced in isolation, and another allomorph ending in a flap in the suffixed form *witty* in American English. The latter allomorph is the result of a phonological process called lenition. For more on phonological processes, see Textbox 3.6. For discussion of interesting dialectal variations of word-final /ɹ/ in English, see Textbox 3.7.

TEXTBOX 3.6 **COMMON PHONOLOGICAL PROCESSES**

Allophonic and allomorphic variation are typically triggered by the same phonological processes. This is not surprising since allophones and allomorphs tend to be phonetically motivated, and speech physiology varies relatively little across humans, regardless of their language background. Similarly, the compromise between the two goals of minimizing articulatory effort and maximizing perceptual distinctness underlie the phonological systems of all spoken languages, giving rise to the same types of alternations. Some phonological processes are especially common. It is helpful to be familiar with these when doing phonological analysis:

- Assimilation: one sound becomes like another sound, e.g., Hupa vowel rounding or /n/ being pronounced as [m] (so labial like the following [p]) in the English word *input*.
- Palatalization: a subtype of assimilation in which a velar or alveolar consonant is pronounced in the palatal region when adjacent to a high vowel, a front vowel, or the palatal glide, e.g., *bet you* pronounced as *betcha*, or *did you* as *did-ja*.
- Dissimilation: one sound becomes less like another sound, e.g., Finnish vowel rounding, or some pronunciations of the English word *February* as *Feb[j] uary*, with the first of two /r/ sounds in the word becoming a glide.
- Metathesis: two sounds are transposed, e.g., a child's pronunciation of *animal* as *aminal*, or the common pronunciation of the (now retired) football player Brett Favre's name as *Farve*.

TEXTBOX 3.6 (*cont.*)

- Deletion: the loss of a sound, e.g., the loss of the final /n/ in *hymn* (but not in the suffixed form *hymnal*), or the final /b/ in *crumb* (but not in the suffixed form *crumble*).
- Insertion: the insertion of a vowel between the two consonants, e.g., in the past tense of English words that end in alveolar stops, such as *betted* and *provided*.
- Fortition: the strengthening of a sound, e.g., word-initial aspiration in English or the fortition of [s] to the affricate [ts] in words like English *dance*.
- Lenition: the weakening of a sound, e.g., the loss of stop closure intervocalically in Spanish or the realization of American English /t/ or /d/ as a flap.
- Vowel reduction (a type of lenition): the conversion of unstressed vowels to more schwa-like allophones, e.g., the second vowel in *emphasis*, as compared to *emphatic*, or the fourth vowel in *anticipatory*, as compared to *anticipate*.

TEXTBOX 3.7 **LINKING AND INTRUSIVE 'R' IN ENGLISH**

Many speakers of English do not pronounce a final /ɹ/ at the end of a word or phrase but retain the /ɹ/ before another morpheme or word beginning with a vowel. For these speakers, the word *lore* would thus be pronounced without /ɹ/ in isolation or before a consonant but with the final /ɹ/ in the phrase *lore and science*. This is an example of a deletion, where /ɹ/ is deleted before a consonant or word boundary.
For many, this 'linking-R' has been generalized to occur even in words that do not etymologically have a final /ɹ/, e.g. law. For such speakers, the phrases *law and science* and *lore and science* would be pronounced the same. These speakers would thus not have a rule deleting an /ɹ/ that is already there, but an insertion rule, adding an /ɹ/ between one word that ends in a vowel and another word that begins with a vowel.

This 'intrusive-R' has even been extended for some speakers to certain words produced in all contexts, e.g., *idea*, *soda*. For such speakers, these word forms would not be derived by rule but would include the /ɹ/ in the underlying phonemic representation of the word. These examples illustrate how dialectal variation is created by relatively minor changes in phonological systems.

3.2.7 Processes Triggered by Positioning, Stress, and Syllable-Type

The examples of *cite* and *witty* illustrate another important point: ***sometimes phonological processes are triggered by the position of the sound in the word, while at other times they are triggered by surrounding sounds***. Word-initial and word-final positions often trigger phonological processes. In many languages, syllable position and stress are two additional contexts in which phonological rules apply. For example, consider the word from Chickasaw in (3). In the phonetic transcription, stress is indicated by the IPA symbol ['] and syllable boundaries are represented by periods.

(3) /asabikatok/ 'I was sick' [a.'saː.bi.'kaː.'tok]

You will notice that the vowel /a/ is lengthened in the second and fourth syllables. This is a regular phonological process in Chickasaw; vowels are lengthened in stressed syllables, as long as they are not word-final. Thus, we see that both stress and position play roles in this process.

Vowel lengthening in Chickasaw is actually more complicated than this, as the rule does not target all non-final stressed syllables, but only those in **open syllables**, that is, those

SIDEBAR 3.8

Weight-sensitive stress is also found in Kabardian; see Section LP1.4.1 in the Kabardian Language Profile, especially Textbox LP1.3, which introduces **syllable weight**.

syllables that end with a vowel. Therefore, the second vowel in [tʃa.'lak.'kiʔ] 'Cherokee' does not lengthen even though it is stressed. The second syllable in this word is a **closed syllable**, as it ends in a consonant, in this case /k/.

As it turns out, the distinction between open and closed syllables is also relevant for describing the location of stress in Chickasaw. In words that are made up of strings of open syllables, stress will fall on all even-numbered syllables and on the last syllable of the word. We can see this pattern in the word [a.'saː.bi.'kaː.'tʃĩ] 'he or she makes me sick.' In contrast, closed syllables in Chickasaw are stressed regardless of whether they are even-numbered or not, e.g., ['ok.'fok.'kol] 'type of snail.' Thus, the distribution of stress in Chickasaw depends on both positioning and syllable type.

CHAPTER SUMMARY

We have learned about the ways in which the sounds of a language pattern together in groups and form systematic relationships. There are three types of relationships that can hold between sounds. One possibility is for two sounds to be in contrastive distribution (the sounds occur in the same position in different words), in which case the sounds are separate phonemes. A second possibility is for sounds to occur in the same position in the same word, in which case they are said to be in free variation. A final option is for two sounds to be in different predictable environments, in which case the sounds are in complementary distribution and are allophones of the same phoneme. Allophones can be conditioned by surrounding sounds, by stress (or lack thereof), by certain positions in the syllable or word, or by some combination of these factors.

The relationships between allophones and their underlying phonemes can be expressed using phonological rules. Phonological rules are motivated by two competing forces: ease of articulatory effort and perceptual distinctiveness, and these give rise to a variety of phonological processes, many of them quite common. Phonological rules are thus grounded in both the phonetic and the functional bases of human language.

In addition to mediating allophonic relationships, phonological rules help determine relationships between allomorphs. The following chapter discusses morphology, including alternations between allomorphs, in more detail.

SUGGESTIONS FOR FURTHER READING

Gordon, **Matthew**. 2016. *Phonological typology*. Oxford University Press.

This book examines the cross-linguistic distribution of a wide range of phonological properties ranging from phonemes all the way up to stress, tone, and intonation.

Hayes, **Bruce**. 2008. *Introductory phonology*. Chichester, West Sussex: Wiley-Blackwell.

Kennedy, **Robert**. 2016. *Phonology: A coursebook*. Cambridge University Press.

Odden, **David**. 2014. *Introducing phonology*, 2nd edn. Cambridge University Press.

These three books provide a clear and informative overview of phonological theory, focusing on methodological approaches to analyzing phonological data.

Ohala, **John**. 2012. "The relation between phonetics and phonology." In **Hardcastle**, **William**, **John Laver**, and **Fiona E. Gibbon** (eds.), *The handbook of phonetic sciences*, 2nd edn. Chichester, West Sussex: Wiley-Blackwell. 653–677.

This book chapter examines the role of phonetics in explaining phonological patterns.

Vihman, **Marilyn**. 2014. *Phonological development: The first two years*, 2nd edn. Chichester, West Sussex: Wiley-Blackwell.

This book provides an overview of the acquisition of phonology by children.

EXERCISES

1. The following sounds are the phonemes of Finnish:

p t d k ʔ m n ŋ s h ʋ j l r i y e ø æ ɑ o u

State whether the following sets of sounds form natural classes or not. For those that are natural classes, describe that class of sounds using phonetic features.

(The symbol [ʋ] represents a voiced labiodental approximant.)

a. p t d k ʔ
b. t d n s l r
c. y ø o u
d. e ø o
e. k ŋ
f. ʋ j l
g. m n ŋ
h. i y e ø æ o u
i. d m n ŋ ʋ j l r i y e ø æ ɑ o u
j. ɑ o u

2. For each of the following English words, think of another word from which it differs by only one phoneme – and with which it thus forms a minimal pair – and write it down, both in English spelling and in IPA. Then describe the phonetic dimension(s) on which the differing phonemes differ.

SIDEBAR 3.9
When working through these exercises, remember that you can refer to the IPA chart at the end of this book.

Example: if given the word 'muddle' ['mʌdl̩], you could come up with 'puddle' ['pʌdl̩]. The two phonemes that differ are [m] and [p]. These phonemes have the same place of articulation (bilabial), but you would say that the dimensions on which they differ are manner (because [p] is an oral stop but [m] is a nasal stop) and voicing (because [m] is voiced but [p] is voiceless). You could also have come up with other words that form minimal pairs with 'muddle,' such as 'middle' ['mɪdl̩] or 'muzzle' ['mʌzl̩]; you would then have different phonetic differences to describe.

a. 'throw' ['θɪo]
b. 'best' ['bɛst]
c. 'spank' ['speŋk]
d. 'dude' ['dud]
e. 'filth' ['fɪlθ]
f. 'played' ['pled]
g. 'cattle' ['kætl̩]
h. 'stubs' ['stʌbz]

3. For each pair of sounds, find two English words that form a minimal pair, showing that the two sounds represent separate phonemes. For example, given the pair [k] and [g] you could come up with 'gap' [gæp] and 'cap' [kæp].

   a. [b] and [p]
   b. [b] and [m]
   c. [s] and [ʃ]
   d. [t] and [θ]
   e. [d] and [ð]

4. Below is a short passage written in English orthography. Using your knowledge of how these words are pronounced, find as many minimal pairs or minimal sets as you can. (For the purposes of this assignment, consider diphthongs to be a single phoneme.) For each minimal pair, say which two sounds must therefore represent distinct phonemes. (Example: the first two words in the passage are the minimal pair *due* [du] and *to* [tu]; therefore [t] and [d] must represent distinct phonemes.) Are there any near minimal pairs?

   Due to the storm, they had to cancel the soccer game in the park. Matt made soup, ate, and sat in the rocker with a book. When the power went out, he rose and went to look for a candle but didn't have one with a wick. That meant it would be dark soon. He thought the main stores would be closed, though. So he took a shower, and clothed in a warm robe, he sat to play his sax.

5. Consider the following data from Tariana, a language spoken in Northwest Brazil (Aikhenvald 2003).

Guide to Phonemic Analysis and Phonemic Analysis Flowchart.

a.	*ˈkeɾu*	'angry'
b.	*ˈɣawi*	'jaguar'
c.	*ˈlesa*	'boil'
d.	*ˈiɾi*	'blood'
e.	*ˈɣavi*	'jaguar'
f.	*ˈkeɾi*	'moon'
g.	*ˈiɾa*	'need'
h.	*leka*	'break'

List the pairs of phonemes that are clearly attested in this data set.

6. What is the phonemic status of [p] and [b] in Hiligaynon, an Austronesian language spoken in the Philippines, given the following data set? In other words, are the two sounds in contrastive distribution therefore distinct phonemes, or are they allophones of a single phoneme, in either free variation or complementary distribution?

palad	'palm'	*bagis*	'shark'
palay	'rice field'	*opʊd*	'companion, to accompany'
bating	'dove'	*balay*	'house'

7. Examine the following words from Nones, a Romance variety spoken in the Trentino province of northern Italy, and answer the questions that follow:

   (Transcription note: The symbol [s̪] indicates a voiceless fricative pronounced slightly behind the alveolar ridge.)

paˈja	'straw'	*ˈsupa*	*'soup'*	*ˈcampʰ*	'field'
ˈfreth	'cold'	*ˈtredəs*	*'thirteen'*	*auˈton*	'autumn'
ˈklar	'clear; bright'	*ˈtʃiŋkʰ*	*'five'*	*desˈkousˈ*	'barefoot'

   i. Is the aspiration of stops in Nones phonemic or allophonic?
   ii. If phonemic, provide evidence. If allophonic, state: (a) which allophones are basic (aspirated or unaspirated); (b) the conditions under which the non-basic allophones appear.

8. Consider the phonemic status of [d] and [dʒ] in the following data from Adang, a language spoken in Indonesia. Are the two sounds phonemes, allophones in complementary distribution, or allophones in free variation? How do you know?

ud	'beeswax'	*mud*	'citrus fruit'
dɔ	'egg'	*mudʒ*	'to fall'
buir	'flat'	*falad*	'liver'
par	'mud'	*ɔd*	'shaky'
dal	'to sing'	*dum*	'to smoke'
ʔadid	'split'	*faladʒ*	'sweet potato'
udʒ	'to vomit'	*afɛl*	'white'

9. Examine the following data from Estonian, a Finnic language spoken by approximately 1 million people, primarily in Estonia.

tal::	'lamb'
lina	'flax'
tal:a	'of the sole'
kan::	'jug'
lin:a	'of the town'
pak:i	'of the package'
pan^{j}::	'bread'
vil::	'wool'
pala	'piece'
vil^{j}::	'blister'
tal^{j}i	'winter'
lin::a	'into the town'
la::t^{j}	'nature'
hal::	'frost'
tal^{j}:i	'stable'
pal^{j}::	'ball'
sa::t	'you get'
paki	'gust'
pak::i	'into the package'

i. Estonian has many palatalized consonants, indicated by the symbol [ʲ]. They sound roughly like an English sequence of a consonant plus [j]. Are the palatalized consonants allophones of their non-palatalized counterparts or are they separate phonemes? Provide evidence for your answer.

ii. In addition, Estonian consonants and vowels have three degrees of length phonetically: short; long (indicated by ː); and extra-long (indicated by ːː). Are any of the length differences allophonic or are all three lengths phonemic? Provide evidence for your answer.

10. Examine the following data from Old Icelandic, the ancestor of the modern West Scandinavian languages Icelandic, Norwegian, and Faroese.

barn	'child'
barns	'child' (genitive sg.)
bɔrnum	'children' (dative pl.)
barni	'child' (dative sg.)
mɔrkum	'forest' (dative pl.)
marka	'forest' (genitive pl.)
handar	'hand' (genitive sg.)
handa	'hand' (genitive pl.)
hɔndum	'hand' (dative pl.)
dagr	'day'
dags	'day' (genitive sg.)
dɔgum	'day' (dative pl.)
matr	'food'
matar	'food' (genitive sg.)
matir	'foods'
mɔtum	'food' (dative pl.)

Describe the alternations affecting the vowels. What is the term for this type of phenomenon? Try writing a rule accounting for the alternations.

11. Examine the following data from Chickasaw.

sinti?	'snake'
ã:sinti?	'my snake'
tʃĩ:sinti?	'your snake'
fala	'crow'
ã:fala	'my crow'
tʃĩ:fala	'your crow'
paska	'bread'
ampaska	'my bread'
tʃimpaska	'your bread'
iŋkoni	'skunk'
aŋkoni	'my skunk'
tʃiŋkoni	'your skunk'
tali?	'rock'
antali?	'my rock'
tʃintali?	'your rock'
hason	'leech'
ã:hason	'my leech'
tʃĩ:hason	'your leech'
nani?	'fish'
ã:nani?	'my fish'
tʃĩ:nani?	'your fish'
akaŋka?	'chicken'
amakaŋka?	'my chicken'
tʃimakaŋka?	'your chicken'

Rule writing guide

Describe the alternations affecting the prefixes meaning 'my' and 'your.' Try writing rules accounting for these alternations.

12. Writing rules

Here is the phoneme inventory for a language:

p b t d k g m n ɸ β s z ʃ j l i e æ ə ɑ o u

Use rule-writing notation to compose rules corresponding to each of the prose descriptions below. What is the name of each type of process? *Hint*: Some may have more than one name.

a. /n/ becomes [m] and /d, g/ become [b] before [p, b, m, ɸ, β]
b. /p/ becomes [ɸ], /b/ becomes [β], and /d/ becomes [z] between vowels
c. /b/ becomes [p], /d/ becomes [t], and /g/ becomes [k] word-initially
d. [ə] is added to break up consonant clusters of stop plus nasal
e. /p, t, k/ delete word-finally
f. The clusters /sp, st, sk, ʃp, ʃt, ʃk/ reverse their order of consonants word-finally
g. /s/ becomes [t] before [s]
h. /o/ becomes [e], /u/ becomes [i], and /ɑ/ becomes [æ] after [i, e, æ]

4 Morphology

What's in a Word?

KEY TERMS

- Morphology
- Morpheme
- Affix
- Compound
- Productivity
- Allomorph
- Lexeme
- Derivation
- Inflection
- Lexicalization

CHAPTER PREVIEW

We have seen how sounds pattern in each language as they are combined to form words. Morphology is the study of the internal structure of words. This chapter describes the kinds of building blocks used to form words in different languages and the ways they can be combined. Speakers are not usually conscious of the patterns inside of their words, but for most languages, knowledge of such patterns is crucial to the ability to speak. Topics discussed here include the notion of the *word*, the forms morphemes can take, the kinds of meanings they can carry, how to identify and describe them, and what we can learn from the morphological patterns we find. In the process, it introduces core grammatical concepts and analytical skills that will be central to discussions of word classes, syntax, and other topics covered throughout this book.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **discuss ways to identify words in different languages;**
- **identify basic morphemes in an unfamiliar language;**
- **identify simple allomorphs and write rules to describe their distribution;**
- **identify the meanings of basic morphemes;**
- **define the term "compound" and give examples of compounds;**

- **explain the difference between possible and actual words;**
- **define the term "productivity";**
- **explain what is meant by the terms "lexeme" and "lexicalization."**

4.1 Introduction to Morphology

As speakers, what do we know about our mother tongue? Much of our linguistic knowledge is unconscious. When we start to learn a new language, we often come to appreciate just how much speakers must know in order to talk, whether they are aware of it or not.

It seems obvious that knowing words is a critical part of knowing a language, but what does it mean to know a word? A recent newspaper advertisement claims *Unbelievable weight loss breakthroughs!* Most English speakers recognize each of the words in this phrase as part of the vocabulary of English. They may or may not realize that words can have meaningful parts of their own. The first word, *unbelievable*, has three parts. It is based on the verb root *believe*. With the addition of the ending *-able*, we have another word *believ-able* 'able to be believed.' If we add *un-* to that word *believable*, we have yet another word, this one with the opposite meaning: *un-believable* 'not able to be believed.' Each of the meaningful parts of a word, like *believe*, *-able*, and *un-*, is called a **morpheme**. The study of how morphemes are combined to form new words is called **morphology**.

SIDEBAR 4.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online materials for this chapter include a study guide, vocabulary quizzes, an online review quiz, a step-by-step guide on how to do morphological analysis, and two interactive exercises.

Morphology is one of the areas in which languages can differ the most from each other. Compare the two sentences below. The first is from Engenni, a Kwa language spoken in Nigeria. The top line in the example shows the sentence as it was spoken, the second line shows the meaning of each word, and the third line shows a free translation of the whole.

(1) Engenni (Thomas 1978)

Á	*ta*	*na*	*wa*	*ɔmù.*
one	go	to	seek	house

'Let's go look for the house.'

The second example is from Mohawk, a language of the Iroquoian family spoken in Quebec, Ontario, and New York State. Here again the top line shows the sentence as spoken; note that the whole sentence is expressed in a single Mohawk word. The second line shows the parts (morphemes) of the word. The third identifies the meaning of each morpheme. The fourth provides a free translation of the word as a whole.

SIDEBAR 4.2

Engenni symbol	Phonetic description
vowel with grave accent (e.g., ù)	low tone
vowel without an accent	high tone
vowel with acute accent (e.g., Á)	upstepped (extra-high) tone

(2) Mohawk
Teninonhsihsákha.
te-ni-nonhs-ihsak-ha
you.and.I-two-house-seek-go.and
'Let's go look for the house.'

The Engenni and Mohawk sentences mean roughly the same thing, but the two languages differ considerably in the way they distribute information over their words. In the Engenni example, each word contains just one meaningful part, or one morpheme. In the Mohawk example, all of the same information is packaged into a single word.

4.1.1 What Is a Word?

How do we know that the Mohawk sentence in (2) contains just one word? The most obvious way to find out is to ask a speaker. Mohawk speakers have clear ideas about where one word stops and the next begins, whether or not they have ever read or written their language. All would readily agree that (2) is a single word. Let's look at a longer sentence. Compare the Mohawk sentence in (3) with its English translation. The amount of information contained in each word is different in Mohawk and English: the Mohawk sentence contains seven words, and the English translation fourteen. But all Mohawk speakers would again divide the sentence into words in the same way.

SIDEBAR 4.3

Mohawk symbol	IPA
on	[ũ]
en	[ʌ̃]
: (colon)	[ː] (vowel length)
' (apostrophe)	[ʔ]
´ (acute accent)	high or rising tone
` (grave accent)	falling tone

(3) Mohawk: Konwatsi'tsaien:ni Rita Phillips, speaker

Ó:nen	*ki'*	*iá:ken'*
ó:nen	ki'	iak-en-'
now	in.fact	one-say-s
now	in fact	one says

'Now then, they say,

karhá:kon	*niahatitakhenóntie'*
ka-rh-ak-on	n-i-a-ha-ti-takhe-n-ontie'
it-tree-be.in-is	there-thither-FACTUAL-they-all-run-to.there-along
place in the forest	they started running thither into it
they raced off into the forest	

wahonhiákha'	*sewahió:wane'.*
wa-h-on-ahi-ak-ha'	se-w-ahi-owane-e'
FACTUAL-they-all-fruit-pick-go.and	one-it-fruit-big-is
they went to pick fruit	apple
to go pick apples.'	

In some languages, the boundaries between some words are not as clear. For example, how many words are there in the English term *ice cream* or *ice-cream*? As was noted in Chapter 1,

all languages change over time, and many aspects of languages change, including the boundaries between words. When two or more words occur together very frequently in speech, especially when they come to represent a single idea like 'ice cream,' speakers may begin to process them as a single unit, rather than composing the expression anew, word by word, each time they refer to it. The merging of words into a single cognitive unit can occur gradually over time. It is in such cases of change in progress that speakers may be uncertain of word boundaries.

Speaker intuitions usually provide the best indication of boundaries between words (although in some cases standardized spelling conventions can interfere with intuitions). But individual languages may provide additional kinds of evidence. ***In most languages, words can be pronounced alone, but individual morphemes often cannot***. For example, if I asked you what English *t* means, you probably would not recognize it as the past tense suffix at the end of *look-ed* [lʊk-t]. Similarly, the Mohawk morpheme *-rh-* 'tree' which is part of the word 'forest' in (3) above, would never be pronounced by itself; speakers would not even recognize it if it were.

Another indication of word boundaries is that speakers can pause between words. For example, an English speaker may say: *I … don't really want to*. But speakers rarely if ever pause between the morphemes inside of a word: thus *Lightn … ing was flashing in all direct … ions* would be distinctly odd. This is true for Mohawk as well as for English. If Mohawk speakers are interrupted in the middle of a word, they go back and start over at the beginning. Speakers sometimes insert parenthetical information between words; thus *I … if you want to know the truth … don't really want to* would be possible. But speakers do not insert such asides between morphemes; thus *Lightn … really scary … ing was flashing* would be impossible. This suggests that words are not usually produced morpheme by morpheme as speakers talk; words are stored as single cognitive units, and selected from memory as wholes for speech.

In many languages, it is easy to identify words on the basis of phonological evidence. Perhaps the most obvious type of phonological evidence is the location of stress. In some languages, primary stress regularly falls on a certain syllable. In Finnish, for example, stress occurs on the first syllable of each word: *aasi* 'donkey,' *perhonen* 'butterfly,' *välimatka* 'distance,' *valoku-vauskone* 'camera.' In Spanish, primary stress (apart from specific exceptions) falls on the second-to-last syllable: *burro* 'donkey,' *mariposa* 'butterfly,' *biblioteca* 'library.' Mohawk shows the same pattern as Spanish. The accent marks in the Mohawk examples in (2) and (3) above indicate stressed syllables. Other types of phonological evidence can provide clues to the boundaries between words as well, though these differ from language to language.

SIDEBAR 4.4

The term **stress** was introduced in Section 2.7.2. It refers to the relative prominence of a syllable in the word. A syllable with primary stress will often have special pitch, it may be louder, and it may last longer than a syllable with secondary stress or a syllable that is unstressed.

It is often the case that the ideas expressed by a single word in one language can also be expressed, more or less, with multiple words in the same language. But there are usually differences in meaning, although they may be subtle. A number of the morphemes in the Mohawk word in (4a) could be expressed with separate words. If, for example, you and I had been looking for something else beforehand, and I wanted us to shift the goal of our search, it would be more appropriate to name the house separately, as in (4b).

(4) Mohawk

a. *Teninonhsihsákha.* 'Let's go look for the house'
let's go house seek

b. *Kanónhsote' tenihsákha.* 'Let's go look for the house'
it house stands let's seek

Another example can be seen in Lakhota, a Siouan language of the Plains. Both (5a) and (5b) could be translated 'I made it/them black.'

(5) Lakhota (Stan Redbird, speaker p.c.)

a. *Sabwáye.* 'I made it/them black; I blackened.'
I blackened

b. *Sápa wakáğe.* 'I made it/them black.'
black I made

When asked about the difference, the speaker, Mr. Redbird, explained that if he had just polished his boots he would use (5a). If he had hung a kettle over the fire to start a stew cooking, then returned some time later to find that the flames had come up and eventually left soot on the bottom of the kettle, he would use (5b). The first sentence indicates a single, direct action, while the second is appropriate for a longer string of events and indirect consequences.

SIDEBAR 4.5

Lakhota symbol	IPA	Phonetic description
' (acute accent)	[']	primary stress
ğ	[ɣ]	voiced velar fricative

SIDEBAR 4.6

A hyphen on the left of a morpheme, as in the English plural *-s*, indicates that the morpheme must attach to something on its left. A hyphen on the right, as in *un-,* indicates that the morpheme must attach to something on its right. Bound morphemes are always written with a hyphen on at least one side.

4.2 Kinds of Morphemes

Morphemes, the building blocks of words, can be classified in several ways. One distinction is between **free morphemes** and **bound morphemes**. Free morphemes are those that can stand alone as words.

In the English phrase we saw at the outset, the morphemes *believe, weight, loss, break*, and *through* are all free, because they can be used as words on their own. All of the morphemes in the Engenni sentence in (1) are free: *á* 'one,' *ta* 'go,' *na* 'to,' *wa* 'seek,' and *omù* 'house.' In the Mohawk sentence in (3), the words *ó:nen* 'now' and *ki'* 'in fact' are free. Bound morphemes are morphemes that never occur as words on their own. The English morphemes *un-* and *-s* are both bound.

Another way to classify morphemes is into **roots** and **affixes**. ***Roots are considered the foundation of the word.*** The root usually conveys the main meaning of the word. The root of *un-believ-able*, for example, is *believe*. ***Affixes are morphemes that attach to roots and modify their meaning in some way.*** The morphemes *un-*, *-able*, and *-s* are all affixes. Affixes never stand alone as words; they are bound. Textbox 4.1 discusses the relationship between the concepts of root versus affix and free versus bound.

TEXTBOX 4.1 **ROOTS VERSUS AFFIXES AND FREE VERSUS BOUND**

Can we say that all roots are free morphemes, and that all affixes are bound? The answers to these two questions are no and yes. In English, most roots are free, that is, they can occur as words on their own, like *believe*. But in Mohawk, most roots are bound, like *-nonhs-* 'house,' *-ihsak* 'seek,' *-rh-* 'tree,'and *-takhe* 'run': that is, they always take affixes and never occur as words on their own. Affixes, on the other hand, are bound by definition in all languages.

Affixes can also be classified according to where they occur: before the root, after the root, on both sides of the root, or inside the root. We can see each of these kinds of affixes in Ilocano, a language of the Austronesian family spoken in the Philippines.

A **prefix** is a type of affix that appears before the root, like the English *un-* of *unbelievable*. Compare the Ilocano words in the left column in (6) with those on the right.

(6) Ilocano prefix (Rubino 1997)

amianan	'north'	*taga-amianan*	'Northerner'
abagatan	'south'	*taga-abagatan*	'Southerner'
bantay	'mountain'	*taga-bantay*	'from the mountains'
ili	'town'	*taga-ili*	'from town'
Amerika	'America'	*taga-amerika*	'American'

The prefix *taga-* forms words for origin or nationality from words for places.

A **suffix** is a type of affix that occurs after the root, like the English *-able* of *unbeliev-able*. Compare the Ilocano words in the left column in (7) with those on the right.

(7) Ilocano suffix (Rubino 1997)

giling	'grind'	*giling-an*	'grinder'
sagat	'strain'	*sagat-an*	'strainer'
balkot	'wrap'	*balkot-an*	'wrapper'
timbeng	'weigh'	*timbeng-an*	'balance, scale'

SIDEBAR 4.7

Ilocano symbol	IPA
ng	[ŋ]
y	[j]

Adding the suffix *-an* to a verb can create a noun in Ilocano. Affixes that create nouns are called **nominalizers**. The nouns in (7) designate instruments. This particular suffix can thus be called an instrumental nominalizer.

An **infix** is a type of affix that appears inside of the root.

(8) Ilocano infix (Rubino 1997)

kuton	'ant'	*k-in-uton*	'ant-infested'
gayaman	'centipede'	*g-in-ayaman*	'infested with centipedes'
ngilaw	'fly'	*ng-in-ilaw*	'fly-infested'
kuto	'lice'	*k-in-uto*	'lice-infested'

The Ilocano infix *-in-* adds the meaning 'infested.' When we describe an infix, we always specify where in the root it is inserted. Here the infix is inserted after the first consonant of the noun: *k-in-uton* 'ant-infested.' (The sequence of letters *ng* is used in the practical spelling

system to represent a velar nasal [ŋ], a single consonant.) Infixes are much rarer in the languages of the world than prefixes and suffixes.

Circumfixes wrap around the root, with part occurring before and part after. English does not have circumfixes; the example below is from Ilocano:

(9) Ilocano circumfix (Rubino 1997)

ragsak	'happy'	*pag-ragsak-en*	'make someone happy'
leddaang	'sad'	*pag-leddaang-en*	'make someone sad'
uray	'wait'	*pag-uray-en*	'make someone wait'
awid	'go home'	*pag-awid-en*	'make someone go home'

The Ilocano circumfix *pag-…-en* adds the meaning 'make' or 'cause.' It is called a **causative**. For an example of another circumfix, see Textbox 4.2.

Words may contain more than one prefix, more than one suffix, or combinations of both, as in many of the Mohawk words seen earlier, one of which is repeated in (10). The root is in bold.

(10) Mohawk verb from (3)
niahatitakhenóntie'
n-i-a-ha-ti-**takhe**-n-ontie'
there-thither-FACTUAL-3.MASCULINE-all-**run**-to.there-along
'they started running thither into it'

It is important to note that there are no infixes in this word. The morphemes *n-* 'there,' *i-* 'thither,' *a-* FACTUAL, *ha-* the 3rd-person masculine, and *ti-* 'all' are all prefixes, because they all occur before the root. No morpheme appears inside of the root *-takhe* 'run.' Many languages, among them Turkish and the Eskimo-Aleut languages, have only suffixes. Some others, among them Navajo and many other Athabaskan languages, have only prefixes. Most languages, like English, French, or Japanese, have both.

Words may also contain more than one root. Such words are called **compounds**. English is particularly rich in compounds. English speakers frequently combine roots, even full words, to create new words, such as *break-through, pig-pen, hot-dog*, and many more. Frequently used word-formation processes are said to be highly **productive**; this concept is further discussed in Textbox 4.3. Newer compounds are often still written as two words, even when they are pronounced and understood as a term for a single idea. The Mohawk example seen earlier in (4a) is also a compound, built on the noun root *-nonhs-* 'house' and the verb root *-ihsak* 'seek': *teni-nonhs-ihsák-ha* 'Let's go house-hunting.'

STOP AND REFLECT 4.1 **COMPOUNDS AND WORD MEANINGS**

Consider the following two sentences:

a. *She studied flower arranging in Japan.*

b. *She carefully put the flower in her hair.*

In (a) the word *flower* is put into the compound *flower arranging*. In (b) it is used independently. What are the differences in meaning between the two? Could the compound *flower arranging* be used for arranging flowers in one's hair? Why or why not?

TEXTBOX 4.2 **CIRCUMFIXES**

Circumfixes, like infixes, are relatively rare among the languages of the world. Often they originated as a combination of a prefix and a suffix that, over time, came to have a meaning of its own. In Example (7) we saw the suffix *-an* that is used to form nouns in Ilocano. Ilocano now has several circumfixes that form terms for places, which must have originated as a combination of some prefix with the nominalizer suffix *-an*. The locative nominalizer *pag-…-an* creates names of places from verbs that denote the kind of activity typically done there. The locative nominalizer *ka-…-an* creates names of places from words for activities or objects characteristic of those places.

TABLE 4.1 Ilocano locative nominalizers (Rubino 1997)

adal	'study'	*pag-adal-an*	'school'
langoy	'swim'	*pag-langoy-an*	'swimming pool'
pabuya	'show'	*pag-pabuya-an*	'theater'
sugal	'gamble'	*pag-sugal-an*	'casino'
darat	'sand'	*ka-darat-an*	'sandy place'
ubas	'grape'	*ka-ubas-an*	'vineyard'
pinia	'pineapple'	*ka-pinia-an*	'pineapple field'
mangga	'mango'	*ka-mangga-an*	'mango plantation'

TEXTBOX 4.3 **PRODUCTIVITY**

Productive morphological processes are those that speakers use to create new words. Noun-noun compounding is very productive in English: it is a constant source of new words. Some affixes are highly productive as well, like the nominalizer *-ness* of words like *shortsighted-ness*. Others are less productive, like the nominalizer *-hood* in *woman-hood*. Some are no longer productive at all, like the nominalizer *-t* of *weigh-t*. To see just how productive noun-noun compounding is in English, listen to the speech around you for a noun-noun compound that is new to you.

4.3 Finding Morphemes: Morphological Analysis

How do we know what the morphemes are in a particular word? Speakers themselves are rarely conscious of morphological structure unless they have studied grammar. They obviously have some unconscious knowledge of morphology – we see this when they create new words – but few could explain it. If we cannot ask speakers about morphology, how can we discover it in a language?

Morphological analysis is usually done by comparing sets of words, as we did for the Ilocano examples on the last several pages. ***If we find two similar words, one with a particular sequence of sounds and one without it, we can compare the meanings***

of the words and hypothesize that the additional sequence of sounds adds the additional meaning. Consider the following examples from English:

(11) English word pairs

happy	*cool*
unhappy	*uncool*

The meanings of the words with *un-* are the opposite of those without. We can hypothesize that English has a prefix *un-* meaning 'not.'

Now examine the pairs of words below from Karo, a language of the Tupi-Guaraní family spoken in the Brazilian Amazon.

(12) Karo verbs (Gabas 1999)

kə	'walk'
takə	'make (someone) walk while walking alongside of him or her'
ket	'sleep'
taket	'put (someone) to sleep and sleep alongside him or her'
noga	'eat'
tanoga	'feed (someone) while eating with him or her'

Each of these verbs can occur with or without the element *ta*. The addition of *ta* to the verbs changes their meaning in a systematic way. It looks like we have a morpheme: a recurring sequence of sounds (*ta*) with a recurring meaning. As far as we can tell from the data in (12), this morpheme never appears on its own as a word: it is bound. Since it appears before roots (rather than after them or inside of them), it is a prefix. Semantically, it adds a sense of causation, causing someone to walk, causing someone to sleep, and causing someone to eat. It is thus a causative. But it adds a more specific meaning than the Ilocano causative we saw earlier. Here the causer is also participating in the caused activity: walking, sleeping, or eating. These examples illustrate an important principle of morphological analysis. ***We cannot expect that every word in the free translation will correspond to a specific morpheme in the language under analysis.*** Skillful morphological analysis can require the ability to think beyond the translation to imagine what the actual meaning might be. (Linguists generally use the term **gloss** rather than "translation," because they recognize that morphemes and words in one language do not always have perfect semantic equivalents in another. A gloss is simply the best approximation to the meaning. See Textbox 4.4 for important conventions used in linguistics when writing out examples with morphological detail.)

TEXTBOX 4.4 GLOSSING CONVENTIONS

We write the gloss of a morpheme in small caps if it is a grammatical term like PLURAL (PL), NEGATIVE (NEG), CAUSATIVE (CAUS), or NOMINALIZER (NMLZ). Translations are written between single quotation marks, whether it is the translation for a single morpheme, like the Mohawk suffix *-ontie'* 'along' in example (10), or an entire word or sentence, such as 'they started running thither into it.'

Words in the language under study are usually given in italics, or, when handwritten, underlined.

SIDEBAR 4.8
In this and later chapters, a full list of the glossing conventions used in each chapter can be found at the end of the chapter, directly before the exercises.

In conducting morphological analysis, we may not always find pairs of words like those in (11) and (12): one without an affix and one with it. Fortunately, there is another strategy for detecting morphemes. We may find sets of words that all contain a particular element, or a certain sequence of sounds. We can then compare the meanings of those words to see what they have in common. ***When a recurring form matches up with a recurring meaning, we can hypothesize that we have a morpheme with that form and that meaning***.

Compare the Karo words in (13).

(13) Karo verbs (Gabas 1999)

oyaʔwan	'I left'
omãmnoy	'I saw myself'
owakán	'I am angry'
okət	'I walked'

All of these words begin with *o*, though otherwise they are different. One involves leaving, one seeing, one being angry, and one walking. One is in the present, and the others are in the past. But all include the meaning 'I.' We can hypothesize that *o-* is a morpheme meaning 'I.'

STOP AND REFLECT 4.2 **SPANISH ADJECTIVES**

Procedures for Morphological Analysis

In Spanish, the form of an adjective changes depending on the properties of the noun it describes. Consider the adjectives that would modify the nouns indicated in each column.

niño **'boy'**	*niña* **'girl'**	*niños* **'boys'**	*niñas* **'girls'**
alto	*alta*	*altos*	*altas*
chaparro	*chaparra*	*chaparros*	*chaparras*
contento	*contenta*	*contentos*	*contentas*
enojado	*enojada*	*enojados*	*enojadas*

Use the methods described here – looking for additional sounds that indicate additional meanings and recurring forms that correspond to recurring meanings – to analyze these adjectives. How many morphemes occur in each adjective? Check your answers in Sidebar 4.9 on page 90.

4.4 The Meanings of Morphemes

Do all languages express the same kinds of meanings in their morphemes? There certainly are similarities. Many languages have noun roots meaning 'head,' 'fish,' and 'house,' just as in English. Many have verb roots meaning 'eat,' 'catch,' and 'kill.'

But languages also show differences in their inventories of roots. Roots can have quite different meanings in different languages. Central Alaskan Yup'ik, an Eskimo-Aleut language spoken in southwestern Alaska, has roots for 'head' (*nasquq*) and 'house' (*ca*), like

TABLE 4.2 Roots in several different languages

	Some noun roots		
English	*head*	*fish*	*house*
German	*Kopf*	*Fisch*	*Haus*
French	*tête*	*poisson*	*maison*
Engenni	*ùtòmù*	*èsèrnì*	*omu*
Mohawk	*-nontsi*	*-itsi-*	*-nonhs-*
Ilocano	*ulo*	*ikán*	*bal*
Karo	*naká*	*ip*	*ka'a*
	Some verb roots		
English	*eat*	*catch*	*kill*
German	*ess-*	*fang-*	*töt-*
French	*mang-*	*attrapp-*	*tu-*
Engenni	*dhi*	*kunu*	*gbèi*
Mohawk	*-k*	*-iena*	*-rio*
Ilocano	*kaan*	*tiliw*	*patay*
Karo	*'o*	*'iy*	*wĩ*

the languages in Table 4.2. But the Yup'ik root *neqe-* 'fish' also means 'food' and 'eat.' Furthermore, for many Yup'ik roots, there are simply no English roots with equivalent meanings. They can only be translated into English with complex explanations, as shown in (14). (The Yup'ik material in this chapter comes from the speech of Elizabeth Charles, Elena Charles, and George Charles, and from Jacobson (1985).)

(14) Some Yup'ik roots

keniq 'front part of a parka cover, gathered up and used as a means of carrying things'
ella 'world, outdoors, weather, universe, awareness, sense'
pay'u- 'to have one's legs so cramped by cold that one cannot move'
qapiar- 'to skin a seal or other animal starting from the head and pulling the skin back over the body, rather than splitting the skin'
taarri- 'to swat oneself or another in a steambath to tone muscles and stimulate sweating'
caqvir- 'having shoes on the wrong feet'
narurte- 'to act against accepted standards of behavior'

When we compare the meanings of affixes across languages, we find the same kinds of similarities and differences. Some affix meanings show up in language after language. For example, many languages have past-tense affixes, comparable to English *-ed*. Many have

plural affixes, comparable to English *-s*. Many have nominalizers, like the English suffix *-er* and like the Ilocano suffix *-an* we saw in *giling-an* 'grind-er.' Many have causatives like the Ilocano circumfix in *pag-ragsak-en* 'make someone happy.' There are also interesting differences in the meanings of affixes; some examples are discussed in Textbox 4.5.

SIDEBAR 4.9

Answers to Stop and Reflect 4.2: The adjectives in the first two columns have two morphemes each: the root (*alt* 'tall,' *chaparr* 'short,' *content* 'happy,' and *enojad* 'angry') and a gender suffix (*-o* MASCULINE and *-a* FEMININE). The adjectives in the third and forth columns have three morphemes each, those in the first two columns plus an additional suffix, *-s* PLURAL.

SIDEBAR 4.10

For other examples of languages with causative constructions, see the South Conchucos Quechua Language Profile, Section LP6.3.3, and the Manambu Language Profile, Textbox LP10.5.

TEXTBOX 4.5 **THE MEANINGS OF AFFIXES**

Although different languages can have similar affix categories, languages exhibit interesting differences. Some languages have no affixes that mark past tense, while others have elaborate sets of past-tense affixes, distinguishing degrees of remoteness, such as 'immediate past,' 'recent past,' 'remote past,' and 'mythic past.' Karo has a basic causative prefix *ma-*, as in *ket* 'sleep,' *ma-ket* 'put someone to sleep'; *kət* 'walk,' *ma-kət* 'make someone walk'; *copɨt* 'be fat,' *ma-copɨt* 'make someone fat.' But as we saw, it also has a more specialized kind of causative prefix *ta-* meaning 'cause and participate in the action.' Yup'ik has an unusually rich array of causative suffixes, which differ in sometimes subtle ways. They add meanings such as 'let,' 'allow,' 'permit,' 'compel,' 'force,' 'deliberately or intentionally cause,' 'try to cause,' 'tend to cause,' and 'wait for' (as in 'wait for something to boil').

Like roots, affix meanings can also vary across languages. Some interesting examples from Yup'ik are given in (15).

(15) Some Yup'ik suffixes

-kuaq	'leftover'	*arucetaar*	'dried fish skin'
		arucetaar-kuaq	'uneaten, leftover dried fish skin'
-kuar-	'go by way of'	*imarpig*	'sea'
		imarpig-kuar-	'go by sea'
-liqe-	'be afflicted in'	*ilu*	'inside, digestive tract'
		ilu-liqe-	'have a stomach-ache'
-illiqe-	'suffer from lack of'	*murak*	'wood'
		mura-illiqe-	'suffer from the lack of wood'
-ir-	'have cold'	*it'ga-*	'foot'
		it'ga-ir-	'have cold feet'
-taq	'caught object'	*pi*	'thing'
		pitaq	'caught animal or bird'
-tar-	'gather from nature'	*mer*	'water'
		mer-tar-	'fetch water'

SIDEBAR 4.11

Yup'ik	IPA	Phonetic description
e	[ə]	mid-central vowel
ng	[ŋ]	velar nasal
ll	[ɬ]	voiceless lateral fricative
g	[ɣ]	voiced velar fricative
q	[q]	voiceless uvular stop
r	[ʀ]	voiced uvular trill

The verb *mer-tar-* is used, for example, for getting water from a river. For getting water from a faucet or barrel, a different suffix, *-ssaag-*, is used.

It's important to note that meanings conveyed by roots in one language might be conveyed by affixes in another and vice versa. Examples are given in Textbox 4.7.

TEXTBOX 4.6 **YUP'IK IN USE**

A sticker that reads "I Voted" in Yup'ik

cucuklillruunga.
cucuke-li-llru-u-nga
choose-become-PST-IND-1SG
'I voted.'

TEXTBOX 4.7 **MEANINGS IN ROOTS AND AFFIXES**

Meanings are not always distributed between roots and affixes as we might expect. What is expressed by a root in one language might be indicated by an affix in another. Consider the Yup'ik word below, which is a sentence in itself.

Iruartaa.
iru-art-a-a
leg-hit.in-TR.IND-3SG/3SG
'She hit him in the leg.'

This verb has just one root, *iru-* 'leg.' We might expect 'hit' to be conveyed by a root as well, but here it is conveyed by the suffix *-art-*. But how do we know that *-art-* really is a suffix? In Yup'ik, every noun and verb begins with one and only one root. Only roots can occur at the beginning of a word, and they always appear at the beginning. All other morphemes in the word are suffixes. Suffixes never appear at the beginning of a word; they can occur only after a root or another suffix.

The affixes that develop in languages are no accident. They grow out of distinctions that speakers have chosen to express most often in daily speech, over generations, centuries, even millennia. Some affixes reflect concepts that are important to human beings all over the world, like causation. Others reflect the environmental and cultural concerns of individual societies.

4.5 The Shapes of Morphemes

A single morpheme can have more than one pronunciation. Let's consider English plurals. If we look just at written English, it seems that to form a plural, we just add *-s*.

(16) English plurals

newt	*newt-s*
skink	*skink-s*
toad	*toad-s*
frog	*frog-s*
tadpole	*tadpole-s*
chameleon	*chameleon-s*
salamander	*salamander-s*
iguana	*iguana-s*
gecko	*gecko-s*

But do all these suffixes really sound the same? Try pronouncing the plural words carefully, and listen to the sounds at the end. You will note that some words end in voiceless [s], and some end in voiced [z]. Since we know these sounds are distinct phonemes in English, due to minimal pairs such as *sip* and *zip*, we will describe the different forms of the English plural as /s/ and /z/, using phonemic slashes.

SIDEBAR 4.12
To review phonemes and minimal pairs, see Section 3.2.1.

When English speakers hear a new noun, they automatically know which form to use for the plural. For example, what word would you use to talk about more than one *swip*? How about more than one *grib*? English speakers automatically use the voiceless /s/ with *swips*, and the voiced /z/ with *gribs*, even though they have never heard these words before.

If we look carefully at where each form occurs, we see a pattern. The voiceless plural /s/ comes after nouns ending in *p, t,* and *k*. The voiced plural /z/ comes after nouns ending in *d, g, l, n, r, w, y*, and vowels. We can make a generalization about these contexts: the form /s/ occurs only after voiceless sounds, and the form /z/ occurs only after voiced sounds. The alternate forms of a morpheme, like the /s/ and /z/ plural here, are called **allomorphs**. It is important to describe the different allomorphs and where each occurs. For our plural allomorphs, we have two forms so far.

(17) *-s* PLURAL
/s/ used after voiceless sounds
/z/ used after voiced sounds

A description like that in (17) is called **item and arrangement**: we specify how the items are arranged, that is, where each allomorph occurs.

TEXTBOX 4.8 **PARALLEL RULE WRITING IN PHONOLOGY AND MORPHOLOGY**

You will note that the way that rules are written in morphology is similar to how they are written in phonology, as you saw in Chapter 3. In phonology, the rules represent the relationship between phonemes and allophones; in morphology, they represent the relationship between morphemes and allomorphs.

Allomorphy can be also described in another style, called **item and process**, using rule-writing conventions similar to those we saw in the chapter on phonology (see Textbox 4.8). To say that the plural suffix becomes voiced after a voiced sound, we begin with the basic allomorph, here *-s*. We then add an arrow → for 'becomes' or 'is pronounced.' To the right of the arrow, we specify how it changed (in this case by becoming voiced). Next is a slash /, which announces that the context is coming up. The blank __ shows us where the sound in question fits into the context. Example (18) shows you this formal rule and how the same meaning is conveyed in regular English prose.

(18) Formal and prose versions of the English plural allomorphy rule
-s → [+voiced] / [+voiced] __
"The English plural *-s* becomes voiced after any voiced sound."

Are /s/ and /z/ the only allomorphs of the English plural? What is the plural of *grouse?* How about *thrush, finch*, and *partridge*? Many English speakers would have a hard time identifying these four distinct species of birds, but all of them would pronounce the plurals of the species names as /əz/. This is the third allomorph (along with /s/ and /z/) of the English plural. The voicing rule we worked out in (18) doesn't account for this new form. The nouns *grouse, thrush, finch*, and *partridge* all end in hissing fricatives or affricates called **stridents** or **sibilants**. We can thus expand the rule in (18) to include this other allomorph, which occurs in a distinct phonological context.

(19) Expanded rule for English plural allomorphs
-s → əz / [+strident] __
-s → [+voiced] / [+voiced] __

STOP AND REFLECT 4.3 **COMPARING PATTERNS OF ALLOMORPHY IN ENGLISH**
Compare the factors triggering the allomorphs of the English plural *-s* with those triggering the allomorphs of the English past tense *-ed* (summarized in Section 3.2.6). In what ways are the patterns similar or different? What does this tell you about the forces that motivate allomorphic variation?

Allomorphs develop for different reasons. In the case of the English plural, phonetic forces motivate the alternations. When speakers already have their vocal folds vibrating to produce a voiced sound at the end of a noun, it would take extra work to interrupt the vibration and cut off the voicing in order to produce a voiceless /s/. It is easier to just let the vibration continue to the end of the word. This is thus a case of assimilation (discussed in Section 3.1), whereby adjacent sounds come to share a phonetic property, in this case voicing. This allomorphy reduces articulatory effort. Now consider the other allomorph, /əz/, which we find after stridents. If we pronounced the plural of *grouse* with just /s/, it would be nearly impossible to hear the suffix: [graʊss]. The added vowel helps listeners identify the presence of the plural morpheme, in other words, it adds to its perceptual salience. As we saw in Chapter 3, ***minimizing articulatory effort and maximizing perceptual distinctness are opposing forces that shape phonological systems; we also see their impact in allomorphic variation.***

SIDEBAR 4.13
The process of borrowing forms from one language into another and the impact that may have on the borrowing language are extensively discussed in Section 13.2.

Now what about the plurals *cactus/cacti, phenomenon/phenomena*, and *cherub/cherubim*? Although these appear to be random irregularities and they are indeed exceptions to our rule, there are reasons why they exist. These nouns were borrowed into English from other languages: Latin, Greek, and Hebrew, respectively. The English speakers who originally adopted them brought their plural forms along with them. The suffix *-i* in *cact-i* is a Latin plural, the suffix *-a* is a Greek plural, and the suffix *-im* is a Hebrew plural. ***When enough nouns have been borrowed into one language from another, and their plural forms have been brought in along with them, speakers may begin to discern this pattern and apply it to new forms they encounter with the same endings.*** If English speakers want to pluralize a word ending in *-us* (which happens to be a singular ending in Latin), they may decide that it should follow the same pattern as *cactus* and pluralize it with *-i*, even if they have not heard its plural form and don't know whether it came from Latin. Textbox 4.9 further explains this process.

TEXTBOX 4.9 **THE BATTLE OF THE PATTERNS**

Not all nouns adopted from Latin into English have *-i* plurals. The plurals of *virus* and *census*, for example, are *virus-es* and *census-es*. This comes about since human beings are masters at detecting patterns, in language and elsewhere. The patterns come into play as we speak. The result can be regularization and elimination of exceptions. The plurals of *virus* and *census* have been remodeled in accordance with the major pattern of plural formation in English.

STOP AND REFLECT 4.4 **PLURALS OF ENGLISH NOUNS ENDING IN *-US***

The **English** singular nouns below all end in the sequence *-us*. Try pronouncing their plurals. To the best of your ability, note which ones require that the plural be *-i*, which ones never take *-i*, and which ones allow either *-i or -es*. Then go online and check their etymologies. Do all the words that allow *-i* originate in Latin?

alumnus, corpus, hippopotamus, minibus, octopus, papyrus, sarcophagus, walrus

We have seen two kinds of allomorphy. The plural allomorphs *-s*, *-z*, and *-əz* are **phonologically conditioned**. The choice of which allomorph to use depends on the sound before it: /əz/ is used after stridents, /s/ after other voiceless sounds, and /z/ after other voiced sounds. The plural allomorphs *-i*, *-a*, and *-im* are **lexically conditioned**. The forms are associated with particular words (or **lexemes**).

Now let's look at allomorphy in another language. Ilocano has a prefix that can form verbs meaning 'move an object to the location specified by the root.'

(20) Ilocano verbalizer

sakmol	'inside of mouth'	*i-sakmol*	'put something into the mouth'
ruar	'outside'	*i-ruar*	'take something outside'

ditoy	'here'	*i-ditoy*	'put something here'
ngato	'high, up'	*i-ngato*	'put something up'
baba	'down, below'	*i-baba*	'put something down'
abut	'hole'	*y-abut*	'put something in a hole'
uneg	'inside'	*y-uneg*	'put something inside'
abay	'side'	*y-abay*	'place beside, compare'

Ilocano thus has a **verbalizer** prefix *i-*: it turns words into verbs. Compare each word with its verbalized counterpart. You will note that when we reach the pair *abut* 'hole,' *yabut* 'put something in a hole,' we see a change in the shape of the prefix from *i-* to *y-*. (The letter *y* in the Ilocano spelling system represents a palatal glide, IPA [j].) The forms *i-* and *y-* appear in the same position in the word, immediately before the root, and they contribute the same meaning. These facts together suggest that we have one morpheme with two allomorphs.

STOP AND REFLECT 4.5 **WATCH ALLOMORPHY EMERGE**

Try pronouncing the sequence *i-abay* slowly, and then repeat it a number of times quickly. You will note that with speed, the vowel naturally turns into a glide as the sounds blend together. Articulatory "shortcuts" that facilitate articulation are one way that allomorphs develop in languages over time.

When it appears that we have two (or more) allomorphs, we look to see where each one occurs. When we have phonologically conditioned allomorphs, the distribution of allomorphs is usually determined by the sounds directly preceding or following them. Since there is nothing before our prefix here, the most promising place to look is after it. We find:

i-	before	*s, r, d, ng, b*
y-	before	*a, u*

(Recall that *ng* is a digraph representing the single consonant [ŋ].) Can we make any generalizations about the context, as we did for the English plural? The *i-* occurs only before consonants, and the *y-* only before vowels. This situation is called **complementary distribution**. In Chapter 3, we saw allophones of a single phoneme in complementary distribution; we now see that allomorphs of a single morpheme can also have this relationship. The two forms of our prefix never occur in the same context, a confirmation that we do have allomorphs. We can now describe our prefix with its allomorphs.

Interactive morphological analysis exercises

(21) Formal and prose versions of the Ilocano verbalizer allomorphy rule

i- → y / __ V

"The Ilocano prefix *i-* is pronounced as /y/ before a vowel."

Note that allomorphic variation is not only found with affixes; ***roots can have allomorphs as well***. Compare English *leaf* and *leaves*. The root has two forms: /lif/ in the singular and /liv/ in the plural.

4.6 Are Affixes Always Segments of a Word?

Consider the English nouns *mouse/mice* and *man/men*. These plurals are irregular, but they are not random. They are the result of a sequence of developments in the history of the English language, each of which made sense at the time. But how do we describe these plurals today? Do these forms have a plural affix? The answer is yes, but this affix has a different character from the prefixes, suffixes, infixes, and circumfixes we have seen. Here the plural affix cannot be described as one or more segments (consonants or vowels) but as a change internal to the root. ***Sometimes affixes are simply changes in a form, not necessarily added segments***. This is true of the plurals of *mouse* and *man*: in both, plurality is signaled by a change in the vowel, not the addition of a new vowel. This is also true of the past tense on verbs like *see/saw* and *run/ran*.

Such allomorphy is lexically conditioned, because these changes could not be predicted on the basis of the sounds of the roots alone but must be learned as properties of individual words.

Now compare the Engenni verbs in (22). The marks over the vowels indicate tone. The absence of a mark indicates high tone, and a grave accent (è) indicates low tone.

(22) Engenni (Thomas 1978)

dire	'cook'
dìre	'cooks'
dirè	'will cook'

The verb *dire* 'cook' alone has high tone on both syllables (HH). The word *dìre* 'cooks' has low tone on the first syllable and high tone on the second (LH). The future form *dirè* 'will cook' has high tone on the first syllable and low on the second (HL). Here, too, it is easier to describe the tenses as changes made to the root than as pieces of words. The present-tense affix is an LH tone structure, while the future-tense affix is an HL structure.

SIDEBAR 4.14
Tone is introduced in Section 2.7.3. For more on tone, see the Manange Language Profile, Textbox LP3.2.

4.7 Words, Lexemes, and Lexicalization

At the beginning of this chapter, we considered how to identify words in an unfamiliar language. We can now take this question a bit further. Consider the English words *lizard* and *lizards*. We know that they are different words. But we would not expect to find both in a dictionary; we will find only *lizard*. The same is true of the words *talk, talked*, and *talking*. They are all different words, but we will find only *talk* in the dictionary. Words like *lizard* and *lizards* are said to belong to the same **lexeme**. Similarly, *talk, talked*, and *talking* belong to the same lexeme. The plural suffix *-s* on *lizard* does not form a new vocabulary item; it simply gives us another form of the same one, used for referring to more than one of the item denoted by the word. A lexeme is a basic vocabulary item, something we might find as an entry in a dictionary (or in our mental lexicon).

Morphology that does not form a new lexeme, like the plural *-s* on nouns and *-ed* and *-ing* on verbs, is called **inflection**. Inflectional affixes never change the **word class** of the word

that they attach to. *Gavotte* is a noun, and the plural *gavotte-s* is still a noun. Inflectional affixes tend to be highly productive. If we learn a new English count noun like *gavotte*, we expect that it will have a plural, though we may not always be able to predict the form of the plural. ***Inflectional affixes tend to contribute predictable meanings***. If we know that the noun *gavotte* means 'a medium-paced dance popular in the eighteenth century,' we may never have heard it in the plural, but we can predict that *gavotte-s* will mean more than one *gavotte*. For examples of some inflectional affixes in English, see Textbox 4.10.

TEXTBOX 4.10 **SOME INFLECTIONAL MORPHEMES IN ENGLISH**

-s	PLURAL	*Plums are delicious*	These English inflectional affixes can be contrasted with some English derivational affixes, as seen in Textbox 4.11.
-s	3rd SINGULAR SUBJECT PRESENT	*Sharon changes her car's oil herself*	
-ed	PAST TENSE	*Voters rejected the measure on the ballot*	
-ing	PRESENT PROGRESSIVE	*Sarah is riding her bike today*	
-er	COMPARATIVE	*He is taller than my brother.*	
-est	SUPERLATIVE	*He is tallest in his class.*	

Languages differ in the meanings expressed in their inflectional morphology, though certain inflectional categories appear in language after language. Plural and tense inflection are both common cross-linguistically. Another common kind of inflectional morphology is **case**. To see what case morphology can do, look at the Latvian sentences given in (23).

(23) Latvian (Uldis Balodis, p.c.)

a. *Laukā dzīvo tārps.*
field live.3 worm
'A worm lives in the field.'

b. *Lauks ir liels.*
field COP.3 big
'The field is big.'

c. *Putns ēd tārpu.*
bird eat.3 worm
'A bird is eating the worm.'

d. *Putnā tagad dzīvo tārps.*
bird now live.3 worm
'The worm now lives in the bird.'

e. *Vīrs ēd putnu.*
man eat.3 bird
'A man is eating the bird.'

f. *Mežā dzīvo vilks.*
forest live.3 wolf
'A wolf lives in the forest.'

g. *Mežs ir baismīgs.*
forest COP.3 terrifying
'The forest is terrifying.'

h. *Vilks ēd vīru.*
wolf eat.3 man
'The wolf is eating the man.'

i. *Vilkā tagad dzīvo tārps.*
wolf now live.3 worm
'The worm now lives in the wolf.'

Each of the nouns occurs in several sentences. Now look more closely at the forms of these nouns. Start with the word for 'field.' In (23a) it is *laukā*, but in (23b) it is *lauks*. Look at the words for 'bird.' In (23c) it is *putns*, in (23d) it is *putnā*, and in (23e) it is *putnu*. Take a moment to see whether you can tell why the forms keep changing. The other nouns show similar changes.

Each Latvian noun here contains a suffix that identifies its role in the sentence. These suffixes are what are termed case-markers. For example, the ending *-s* indicates that the noun is the subject.

The word *putn-s* 'bird' is the subject of (23c) 'The bird is eating the worm.' Morphemes that identify subjects, like this *-s*, are called **nominative** case-markers. The word *putn-u* 'bird' is the direct object of (23e): 'The man is eating the bird.' Morphemes that identify objects, like the *-u*, are called **accusative** case-markers. The word *putn-ā* specifies a location in (23d): 'The worm lives in the bird.' The *-ā* is a **locative** case suffix. Case morphology occurs in languages all over the world, though certainly not in every language. Languages that do have case morphology show fascinating variation in the number and functions of their case categories. Latvian itself has other case categories in addition to those shown here.

SIDEBAR 4.15
The notions of subject and object are discussed in detail in Section 6.3.

SIDEBAR 4.16

Latvian symbol	IPA
o	[uə]
ie	[ɪə]
ž	[ʒ]

SIDEBAR 4.17
For an example of a language with fourteen productive cases, see the Finnish Language Profile, Section LP4.3.

Not all morphology is inflectional. Morphological processes that create new lexemes are **derivational**. From the root *self*, a new lexeme was created early in the current century: *self-ie* 'photograph that one takes of oneself.' This suffix *-ie* is not fully productive: there are many nouns that speakers would not add it to. Can you imagine a word *window-ie*? ***Derivational affixes do not necessarily add predictable meaning.*** If you only knew the root *self*, would you be able to predict that the meaning of *selfie* would be related to photography?

Derivational *morphology can change the* word class *of the lexeme it is applied to*, though this is not always the case. (See Textbox 4.11 for some examples of derivational affixes in English.) The nominalizers and verbalizers we saw earlier in this chapter are derivational affixes. Added to the English verb *govern*, the derivational suffix *-ment* creates a new noun: *government*. Added to the Yup'ik noun *imarpig* 'sea,' the derivational suffix *-kuar-* 'go by way of' creates a new verb: *imarpig-kuar-* 'go by sea.'

Speakers recognize the difference between those words that already exist in their language and those that could but have not yet been created. This knowledge is sometimes referred to as the mental **lexicon**. English speakers know that the words *joyful* and *peaceful* are part of English, and that *giggleful* and *warful* are not, or at least not yet. When a speaker first coins a new word through derivation or compounding, listeners will often recognize it as an innovation. At this point it is called a **nonce formation**. If other speakers pick it up and use it, it can become an accepted part of the vocabulary or lexicon of the language.

This process, by which a morphological formation comes to be recognized as an established word in the language, is called **lexicalization**. A lexicalized word will be understood and learned as a unit, rather than processed as a sequence of individual morphemes. It will have a meaning of its own, which may or may not correspond to the sum of its parts. The word *joy-ful* means 'full of joy' (as we would expect), but *aw-ful* no longer means 'full of awe' (though it once did), and *cup-ful* does not mean 'full of cups.'

TEXTBOX 4.11 **SOME DERIVATIONAL MORPHEMES IN ENGLISH**

Change the part of speech

-ing	verb to noun	*Smoking is bad for your health.*
-ly	adjective to adverb	*He sings beautifully.*
-er, -or	noun to verb	*He's a baker; she's a director.*
-en	adjective to verb	*how to blacken the fish*
-able	verb to adjective	*That's understandable.*
-ment	verb to noun	*the management*
-less	without; noun to adjective	*a hopeless situation*
en-	noun or adjective to verb	*enable him to succeed*

Do not change the part of speech

re-	do again	*The old friends were happy to reunite.*
pre-	before	*She's taking prenatal vitamins.*
in-, un-	not	*He's intolerable; she's unassuming.*
-ish	sort of	*The fruit was a reddish color.*

These English derivational affixes can be contrasted with the English inflectional affixes in Textbox 4.10.

4.8 Typology

Languages are often classified according to their structural characteristics. The classification of languages according to structural traits is a goal of **linguistic typology**, the study of language types. Perhaps the oldest and still most commonly cited typologies are based on morphological structure. Structures like that seen in the Engenni example at the beginning of this chapter, with words that generally consist of just one morpheme, are called **isolating** or **analytic**. Structures like those in Mohawk are called **polysynthetic**, because words tend to be made up of many (*poly-*) parts put together (*synthetic*). This typological dimension, roughly the average number of morphemes per word, is called the degree of synthesis. Languages like English and Japanese are often described as

SIDEBAR 4.18
For more detailed descriptions of some polysynthetic languages, see the following Language Profiles: Nuuchahnulth (LP5), South Conchucos Quechua (LP6), and Seneca (LP13).

"mildly synthetic," that is, their words may consist of more than one morpheme, but they do not generally show the elaborate morphological complexity of languages like Mohawk.

A second frequently cited typological feature is the degree of fusion. This characteristic pertains to the clarity of divisions between morphemes in a word. Morphological structures with sharp boundaries between morphemes are described as **agglutinating**. The English word *understandable* shows agglutinating structure: *under-stand-able*. Morphological structures in which boundaries are not clear are described as **fusional**. The English word *men* consists of the root *man* plus plural marking, but it is difficult to pull the two apart. A language may have both agglutinating and fusional structures, like English, but languages often show general tendencies one way or the other. Quechua, a language of Peru, Bolivia, Ecuador, Colombia, and Argentina is often cited as an agglutinating language. The second line of the South Conchucos Quechua example in (24) shows the individual morphemes in the word. The top line shows how the word is pronounced (the colon indicates vowel length). The individual shape of each morpheme remains unchanged.

SIDEBAR 4.19
See the South Conchucos Quechua Language Profile for a detailed study of one variety of Quechua.

TEXTBOX 4.12 **MOHAWK IN USE**

A stop sign written in Mohawk

Tésta'n
te-s-t-a'n
DUPLICATIVE-2SG.AGT-stand-INCHOATIVE
change.state-you-standing-become
'Stop!'

(24) Quechua (Hintz 2008)
kutitsiya:muru:si
kuti-tsi-ya:-mu-ru-:-si
return-CAUS-PL-far-PST-1-even
'I made them return.'

Now compare the Quechua example to the word below in Seneca, an Iroquoian language of present western New York State. Seneca is more fusional. Again look first at the second line, which shows the shape of each morpheme. Compare this to the top line, which shows what happens when they are combined in a word. (The colon represents vowel length.)

SIDEBAR 4.20
A detailed study of Seneca can be found in the Seneca Language Profile (LP13).

(25) Seneca (Wallace Chafe, p.c.)
Ögí:waná:go'.
wa'-wak-rihw-a-nehrako-'
FACTUAL-me-matter-LINKER-surprise-PFV
'It surprised me.'

All of the morphemes listed in the second line are present, but a series of historical sound changes have so obscured their boundaries that only people steeped in the history of Iroquoian languages can now decipher them.

SIDEBAR 4.21
Transcription Note

Seneca symbol	IPA
ö	[ɔ̃]
ä	[æ]
:	[ː]
'	[ʔ]
´	high tone

4.9 Morphology, Language, and Us

Morphology is connected to both phonology and syntax, but is distinct from each. Some of the patterns we see in phonology have echoes in morphology: just as phonemes can take different forms (allophones) in different contexts, so, too, morphemes can take different forms (allomorphs) in different contexts. (For a discussion of how children learn these forms and contexts, see Textbox 4.13.)

Both morphology and syntax consist of patterns of combining smaller pieces of language to form larger ones: morphemes are combined into words, and words are combined into sentences. But these two levels of structure are not the same. Speakers do not usually exploit their knowledge of morphological patterns, particularly derivational ones, every time they speak. They typically use this knowledge only on certain occasions to invent vocabulary, when they feel the need for a new word.

TEXTBOX 4.13 **LEARNING MORPHOLOGY**

Few parents explain affixes and allomorphy to their children. You have probably never heard a parent say: "To make a plural, dear, you must add the suffix *-es* after sibilants, *-s* after other voiceless sounds, and *-z* after other voiced sounds, unless the word requires a special, lexically conditioned allomorph." Language acquisition occurs naturally, without explicit instruction.

In acquiring language, children often extend regular patterns beyond where they are found in adult speech. For example, children often say *mouses* and *mans* as the plurals of *mouse* and *man*. It is clear that the child has learned the regular rule of plural formation and is applying it to all nouns. In time, the child will learn the lexically conditioned forms of the plural and will automatically substitute them for the forms created with the regular plural affix for certain words. Chapter 14 discusses these processes in detail.

Comparing morphological patterns in different languages reveals certain features characteristic of all human language. Languages are shaped by human cognitive abilities, such as pattern recognition and extension, memory, and the ability to routinize recurring tasks. It is in fact this deeper cognitive similarity that can lead to some of the most interesting differences we see across languages, as speakers automate frequent patterns of expression. Modern morphological distinctions are largely the result of what speakers have chosen to express the most frequently over the course of development of their languages.

CHAPTER SUMMARY

This chapter has provided a glimpse into the kinds of structures inside words in different languages. We began with the question of how to identify words in an unfamiliar language. The elements that make up words are called morphemes. Morphemes can be classified as bound or free; roots or affixes; prefixes, suffixes, infixes, or circumfixes; and inflectional or derivational. Morphological structure can be discovered in an unfamiliar language, and we can identify and describe alternating forms of morphemes, or allomorphs. Languages can vary widely in their morphological structure: in how much information is typically carried within a word (degree of synthesis) and how clear the boundaries between elements are (degree of fusion). They can also differ in fascinating ways in terms of the kinds of meanings they express. Such differences are not accidental; they grow out of speakers' use of language for everyday communication, and we can see this reflected in how certain words have developed over time. This chapter has begun to reveal the remarkable diversity of linguistic structures; information is packaged and presented in very different ways across languages.

Morphemes are the building blocks of words, and words, in turn, are the building blocks of sentences. How words are combined into sentences and the grammatical relationships between them are the central concerns of the field of syntax. But first we'll need to explore in more depth the different kinds of words that one finds in language, and the behaviors and characteristics that allow us to identify word classes.

TEXTBOX 4.14 **GLOSSING CONVENTIONS USED IN THIS CHAPTER**

Convention	Meaning	Convention	Meaning
1	first person	IND	indicative
2	second person	LINKER	linking morpheme
3	third person	NEG	negative
A	agent	NMLZ	nominalizer
CAUS	causative	PFV	perfective
COP	copula	PL	plural
DUPLICATIVE	duplicative	PST	past tense
FACTUAL	factual	SG	singular
INCHOATIVE	inchoative	TR	transitive

SUGGESTIONS FOR FURTHER READING

Aronoff, **Mark**, and **Kirsten Fudeman**. 2011. *What is morphology?* (originally published in 2004). Malden, Mass.: Blackwell.

This is a book-length, reader-friendly introduction to morphology, aimed at an audience without prior experience of the field. It covers all of the major topics: wordhood, word classes, inflection and derivation, relations between morphology and phonology, morphology and syntax, morphology and semantics, and productivity.

Dryer, **Matthew S.** 2013. "Prefixing vs. suffixing in inflectional morphology." In **Dryer**, **Matthew S.** and **Martin Haspelmath** (eds.), *The World Atlas of Language Structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology.

This article and interactive map allow readers to explore the extent to which languages use prefixes or suffixes for inflectional morphology and how languages with these features are distributed across the globe.

Moravcsik, **Edith A.** 2013. "Morphological typology." Chapter 4 of *Introducing language typology*. Cambridge Introductions to Language and Linguistics. Cambridge University Press.

Morphology is one of the ways languages can differ the most. This chapter describes similarities that appear in language after language and interesting ways they can differ

Payne, **Thomas E.** 1997. *Describing morphosyntax: A guide for field linguists*. Cambridge University Press.

Chapter 2 (on morphological typology) and Chapter 5 (on noun and noun-phrase operations) are especially relevant.

Sapir, **Edward**. 1921. "Form in language: Grammatical processes." Chapter 4 of *Language: An introduction to the study of speech*. New York: Harcourt, Brace, and World. 57–81.

This little book is a classic, presenting ideas that have captivated linguists for generations. It is well worth reading the whole book through. Chapter 4 discusses morphological structure: compounding, prefixing, suffixing, infixing, internal vocalic change, consonantal change, reduplication, and pitch.

EXERCISES

1. Which of the following English words contains more than one morpheme, and which is a single morpheme? What is the meaning and/or function of each morpheme?

joyfulness	*biology*
Spain	*wiped*
rabbit	*photographic*
flamingo	*biped*
lids	*skateboard*
lens	*cart*

2. For each of the sentences, state whether the underlined morpheme is inflectional or derivational, then give one reason for your answer:

a. *She is playing the piano.*
b. *Swimming is good for your health.*
c. *She sent the boy's father a note.*
d. *The painter arrived late.*
e. *He used his phone to check the weather.*
f. *Her happiness was infectious.*
g. *She always remembers to call.*
h. *He smelled freshly baked cookies.*

3. The following sentences were taken from the transcript of *Alice's Adventures in Wonderland.*

There was a table set out under a tree in front of the house, and the March Hare and the Hatter were having tea at it; a Dormouse was sitting between them, fast asleep, and the other two were using it as a cushion, resting their elbows on it, and talking over its head. 'Very uncomfortable for the Dormouse,' thought Alice, 'only, as it's asleep, I suppose it doesn't mind.'
Alice looked all round the table, but there was nothing on it but tea.

Break each of the four underlined words into morphemes, and state whether each affix is inflectional or derivational. Provide at least one reason for your answer.

4. Each of the English examples below contains a prefix. Consider the forms, meanings, and pronunciations (from rapid speech) given in IPA.

ineligible	[ɪnˈɛlədʒəbl̩]
impossible	[ɪmˈpɑsɪbl̩]
intolerable	[ɪnˈtɑlərəbl̩]
incredible	[ɪŋˈkrɛdəbl̩]

Do these examples illustrate one prefix or more than one? Explain your response. Write one or more formal rules to account for any allomorphy you observe.

5. Consider the French words below, which are transcribed phonetically.

a.	*vid*	'empty'	**l.**	*vide*	'to empty'
b.	*dãs*	'dance' (noun)	**m.**	*tʁavaj*	'work' (noun)
c.	*nɛtwoje*	'to clean, tidy up'	**n.**	*pasaʒ*	'passage, passageway'
d.	*apʁivwaze*	'to tame' (as an animal)	**o.**	*ɛsklav*	'slave'
e.	*ʃofaʒ*	'heating'	**p.**	*esklava*	'slavery'
f.	*nɛtwojœʁ*	'person who cleans, cleaner'	q.	*eskamote*	'to retract, conjure'
g.	*pase*	'to pass, proceed'	**r.**	*dãse*	'to dance'
h.	*tʁavaje*	'to work'	**s.**	*eskamotaʒ*	'retraction'
i.	*dãsœʁ*	'dancer'	**t.**	*ʃofe*	'to heat'
j.	*tʁavajœʁ*	'worker'	**u.**	*nɛtwojaʒ*	'cleaning'
k.	*eskamotœʁ*	'conjurer, one who makes things disappear'			

Procedures for morphological analysis

i. Do a complete morphological analysis of the data and provide a list of all roots and affixes, with their glosses.
ii. State whether the affixes are inflectional or derivational and provide one reason to justify your answer. What is the function of each affix?

Interactive morphological analysis problems on Kazakh and Sierra Popoluca

Those familiar with French may be interested in the French spellings below. Be sure, however, to analyze the phonetic transcriptions and not the orthographic forms.

a. *vide*
b. *dance*
c. *nettoyer*
d. *apprivoiser*
e. *chauffage*
f. *nettoyeur*
g. *passer*
h. *travailler*
i. *danceur*
j. *travailleur*
k. *escamoteur*
l. *vider*
m. *travaille*
n. *passage*
o. *esclave*
p. *esclavage*
q. *escamoter*
r. *dancer*
s. *escamotage*
t. *chauffer*
u. *nettoyage*

6. Ainu is a language isolate (a language with no known relatives) indigenous to Northern Japan and adjacent Russia. (Data here are drawn from Refsing 1986: 134.)

a. *wen*	'be bad'	*wenno*	'badly'
b. *parka*	'be fine, be good'	*pirkano*	'well'
c. *esikin*	'be kind, friendly'	*esikinno*	'kindly'
d. *araskay*	'be very able'	*araskayno*	'successfully'
e. *asin*	'be new'	*asinno*	'newly'

Like many other languages, Ainu does not have a separate adjective category. Qualities are expressed by verbs, like those in the left column above.

Do a complete morphological analysis of the data here.

i. For each lexical category (verb, noun, etc.), provide a list of roots in *italics* with their glosses in 'single quotes.'

ii. For each category, provide a list of affixes (again in *italics*, with appropriate hyphens) with glosses in 'single quotes' for translations, SMALL CAPS for grammatical terms. If you can think of a single-word gloss for your affix(es), use that. If not, provide an explanation of the meaning.

7. The Carib language, a member of the Cariban family, is spoken over the entire coastal area of Guiana. Other members of this language family are found all over northern South America, from Colombia to the mouth of the Amazon and from the coast of Guiana to far into the south and southwest of Brazil. (Data here are drawn from Hoff 1968; the colon is used to indicate vowel length, *y* indicates the palatal glide [j], and *ï* represents the high back unrounded vowel [ɯ].)

a. *e:ne*	'see'
b. *wose:ne*	'look at each other'
c. *ene:potï*	'see repeatedly'
d. *we:i*	'become'
e. *weipotï*	'become repeatedly'
f. *uxku*	'try'
g. *uxkupo:tï*	'try again and again'
h. *wose:nepo:tï*	'see each other all the time'
i. *ene:kepi*	'see no longer'
j. *se:kapo:tïʔma*	'tear completely to shreds'
k. *wo:mïʔma*	'go in all together'
l. *ema:mï*	'see day breaking'
m. *eka:numï*	'run'
n. *ïʔma:tï*	'run out of'
o. *se:kapo:tï*	'tear to shreds'
p. *enï:rï*	'drink'
q. *aki:ma*	'tease'
r. *ema:mïʔma*	'see dawn turning into daylight'
s. *wï:to*	'go'
t. *wo:mï*	'go in'
u. *aki:make:pï*	'stop teasing'
v. *ïʔmatïʔma*	'run out of completely'
w. *enï:rïʔma*	'drink up'
x. *se:ka*	'tear'
y. *wï:topo:tï*	'go repeatedly'

Do a complete morphological analysis of the data here.

i. For each lexical category (verb, noun, etc.), provide a list of roots in *italics* with their glosses in 'single quotes.'

ii. For each category, provide a list of affixes (again in *italics*, with appropriate hyphens) with glosses in 'single quotes' for translations, SMALL CAPS for grammatical terms. Different types of affixes (prefixes, suffixes, etc.) should be given in separate lists. If you can think of a single-word gloss for your affix(es), use that. If not, provide an explanation of the meaning. For the purposes of this problem, ignore vowel length.

8. Daga is spoken in the Owen Stanley Mountains of the Central District of Papua New Guinea. (Data for this problem were drawn from Murane 1974; the orthographic *y* indicates the palatal glide [j].)

a.	*mamana*	'my father'	**n.**	*goanana*	'my liver'
b.	*inaga*	'your mother'	**o.**	*nonu*	'our mouths'
c.	*yame*	'his eye(s)'	**p.**	*yamu*	'their eyes'
d.	*nanimu*	'their hands'	**q.**	*noya*	'your mouths'
e.	*goanaya*	'your livers'	**r.**	*naniga*	'your hand(s)'
f.	*pusinu*	'our feet'	**s.**	*yame*	'her eye(s)'
g.	*noga*	'your mouth'	**t.**	*inanu*	'our mother'
h.	*inana*	'my mother'	**u.**	*mamamu*	'their father'
i.	*done*	'its horn'	**v.**	*inaya*	'your mother'
j.	*pusina*	'my foot, my feet'	**w.**	*goaninu*	'our younger sibling'
k.	*yamga*	'your eye(s)'	**x.**	*tase*	'her older sibling'
l.	*evene*	'his friend'	**y.**	*mamanu*	'our father'
m.	*inase*	'its tracks'	**z.**	*yamya*	'your eyes'

Do a complete morphological analysis of the data here.

i. For each lexical category (verb, noun, etc.), provide a list of roots in *italics* with their glosses in 'single quotes.'

ii. For each category, provide a list of affixes (again in *italics*, with appropriate hyphens) with glosses in 'single quotes' for translations, SMALL CAPS for grammatical terms. Different types of affixes (prefixes, suffixes, etc.) should be given in separate lists. If you can think of a single-word gloss for your affix(es), use that. If not, provide an explanation of the meaning.

iii. Do you have any ideas about whether the roots here are bound or free?

9. Lezgian is a language of the Nakh-Daghestanian family spoken by about 400,000 people in southern Daghestand and northern Azerbaijan in the eastern Caucasus. (Data here are drawn from Haspelmath 1993: 107.)

a.	*čajxana*	'teahouse'
b.	*ktabxana*	'library'
c.	*küčeban*	'idler'
d.	*salar*	'kitchen gardens'
e.	*quš*	'bird'
f.	*sal*	'kitchen garden'
g.	*wak'ar*	'pigs'
h.	*čaj*	'tea'
i.	*qušar*	'birds'
j.	*qušarban*	'poultry farmer'
k.	*čapxana*	'printing plant'
l.	*ktab*	'book'
m.	*qahbexana*	'brothel'
n.	*nexir*	'herd of cattle'
o.	*čap*	'printing'
p.	*qahbe*	'prostitute'
q.	*nexirban*	'cattle herder'
r.	*wak'arban*	'swineherd'
s.	*salarban*	'kitchen gardener'
t.	*küče*	'street'
u.	*čaj*	'tea'

SIDEBAR 4.22

Lezgian symbol	IPA	Phonetic description
č	[tʃ]	
š	[ʃ]	
x	[χ]	voiceless uvular fricative
ü	[y]	
k'	[k']	velar ejective

Do a complete morphological analysis of the data here.

i. For each lexical category (verb, noun, etc.), provide a list of roots in *italics* with their glosses in 'single quotes.'

ii. For each category, provide a list of affixes (in *italics*, with appropriate hyphens) with glosses in 'single quotes' for translations, SMALL CAPS for grammatical terms.

10. Samala, also known as Ineseño Chumash, is a Native California language, indigenous to the Santa Ynez Valley near Santa Barbara, on the South Coast. It is a member of the Chumashan language family. (Data here are drawn from Applegate 1998. An apostrophe following *p* indicates an ejective bilabial stop.)

a.	*salaqwaʔy*	'prepare'
b.	*satɨk*	'cure'
c.	*suʔinu*	'believe'
d.	*siwon*	'play a musical instrument'
e.	*sixut*	'burn something'
f.	*sukepʼ*	'give someone a bath'
g.	*naln*	'go'
h.	*alaqwaʔy*	'be ready'
i.	*sunaln*	'send'
j.	*suweln*	'put someone to sleep'
k.	*atɨk*	'get well'
l.	*sutap*	'put something in'
m.	*ʔinu*	'be true'
n.	*iwon*	'make a sound'
o.	*kepʼ*	'take a bath'
p.	*sukitwon*	'take something out'
q.	*tap*	'enter'
r.	*ixut*	'be on fire'
s.	*kitwon*	'emerge'
t.	*saxkʰit*	'remember'
u.	*weʔn*	'sleep'
v.	*susaxkhɨt*	'remind'

Do a complete morphological analysis of the data here.

i. For each lexical category (verb, noun, etc.), provide a list of roots in *italics* with their glosses win 'single quotes.'

ii. For each category, provide a list of affixes (again in *italics*, with appropriate hyphens) with glosses in 'single quotes' for translations, SMALL CAPS for grammatical terms. If there is any allomorphy (changes in the shapes of any morphemes), first explain in words where each allomorph occurs, and then write a rule to describe the situation formally.

11. Burushaski is a language isolate (a language with no known relatives) spoken in Pakistan and India. (Data here come from Lorimer 1935, I: 29–34; the orthographic symbol š represents IPA [ʃ] and č represents [tʃ].)

		sg.	pl.
a.	'ruler'	*thʌm*	*thʌmo*
b.	'crest of spur'	*iriš*	*irišo*
c.	'millstone'	*sʌl*	*sʌlo*
d.	'lamb'	*ʌčʌs*	*ʌčʌso*
e.	'rope'	*gʌšk*	*gʌško*
f.	'bird'	*bʌlʌs*	*bʌlʌšo*
g.	'willow shoot'	*ʏʌšk*	*ʏʌško*
h.	'boy'	*hilɛs*	*hilɛšo*
i.	'hare'	*sər*	*səro*
j.	'butterfly'	*holʌlʌs*	*holʌlʌšo*
k.	'ox, bull'	*hər*	*həro*

Do a complete morphological analysis of the data here.

i. Make a list of all roots in each lexical category (nouns, verbs, etc.). Give the roots in *italics*. Give glosses in 'single quotes.'

ii. Make lists of all affixes that occur with each lexical category. Give the affixes in *italics*, with hyphens where appropriate. Give glosses in 'single quotes' if they are translations, and in SMALL CAPS if grammatical terms.

iii. If there are any changes in the forms of any morphemes when they are combined, describe in words the patterns you see. Write a rule or rules describing the changes.

5 Word Classes

Evidence from Grammatical Behavior

KEY TERMS

- Word
- Particular word classes (e.g., noun, verb, etc.)
- Open versus closed class
- Number
- Case
- Head/Dependent
- Paradigm
- Person
- Agreement
- Lexical versus grammatical class
- Particle
- Proximal versus distal

CHAPTER PREVIEW

We have seen that words are constructed by the principled combination of morphemes, and that this gives them internal structures that can be compared and contrasted across languages. This chapter begins the study of how words are then elements in higher-level structures, and how different types of words have different characteristics within such structures. It will describe how words fall into distinct classes, such as noun, verb, adjective, adverb, demonstrative, preposition, and quantifier. It will demonstrate that such classes are determined by the morphological and syntactic behavior of words, not by their meanings. The chapter will present the behavioral properties typical of the most common word classes cross-linguistically. It will further demonstrate the world's remarkable linguistic diversity in showing that not all languages have the same set of word classes; as a result, linguists need to determine which word classes are found in each language independently and which morphosyntactic properties define each class in each language. The ability to understand and identify these behavioral properties of words is a necessary step in conducting syntactic analysis and will thus be important in later chapters.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **state why word classes need to be identified by morphosyntactic behavior, rather than by meaning;**
- **identify the most common morphosyntactic properties that characterize the most common word classes in the languages of the world;**
- **state the major ways in which languages differ with respect to word classes;**
- **identify the major word classes in sentences in a data set;**
- **given a data set, present a clear argument that a set of words shares morphosyntactic properties and so constitutes a distinct class.**

5.1 Words

In this chapter we will move from the study of elements that compose the words of a language to the words themselves. ***A word is an independent, phonologically coherent linguistic unit, containing one or more morphemes, which can fill a particular slot in a sentence***. In a sentence such as *The boy will eat the red apple*, the word *will* can only occur between *boy* and *eat*; moving it can result in a different sentence, *Will the boy eat the red apple?*, or in an ungrammatical sentence: **The will boy eat the red apple* (this text follows standard linguistic practice in marking ungrammatical sentences with an asterisk preceding the first word). The word *will* is one member of a class of words, called **auxiliary verbs**, which can occupy only one of two slots in a sentence, the slot directly preceding the verb in a statement (*will eat*), or the slot at the beginning of the sentence in a question (*Will the boy eat?*). In English, all words are restricted syntactically in this way. Try moving the word *red* in the sentence above. You will see that a grammatical sentence occurs only if it is directly preceding a noun.

SIDEBAR 5.1

You can find definitions for key terms (and for bolded terms throughout this chapter) in the Glossary at the back of this book or on the student resources website. Additional online materials for this chapter include a study guide, vocabulary quizzes, an online review quiz, and a guide to analyzing unfamiliar languages.

5.1.1 Identifying Word Classes

We can classify words based not only on their syntactic positioning but also on their morphological behavior. Words such as *red* can be affixed by certain morphemes (*redd-er, redd-est*), but not others *(*red-tion, *redd-ed, *red-ment*). The same morphological behavior is shared by words such as *sweet, hungry, fast, sad, tall*, etc. These words are all members of the same **word class** in English, a class of words that share morphological and syntactic behavior. More specifically, these are members of the word class of **adjectives**.

Many of us were taught in school to identify word classes based on their meanings. For example, I was taught that a noun designates "a person, place, thing, or concept," while verbs are "action words." While these definitions are useful in making children aware of word classes and helping them to develop their linguistic intuitions, they are highly problematic as analytical tools used in linguistic analysis. Take, for example, the word *destruction*. Does this designate an action, a thing, or an abstract concept? How about *flip*? *Flip* is a noun in the sentence *He performed a beautiful flip*, but a verb in the sentence *He flipped the*

SIDEBAR 5.2
Syntax will be presented in detail in the next chapter. Here, we will refer to only the syntactic positioning of words, or how they are ordered with respect to other words in the formation of larger phrases.

pancakes. While it is clear that *flip* refers to an action in the latter sentence, it is not clear that it refers to a "thing" or to a "concept" in the former. The flip in the first example seems as much an action as the second.

When we begin to deeply explore the **lexicons** of the world's languages, we encounter many such ambiguous cases. Luckily, we are not restricted to semantic definitions when defining lexical classes. Returning to our *flip* sentences, it is perfectly clear that *flip* is a noun in the first sentence and a verb in the second. To see this, we need only look at the syntactic positioning and morphological behavior. In the first sentence, *flip* is the head of a **noun phrase**, where it combines with the adjective *beautiful* and the indefinite article *a*. Only nouns may occur in this syntactic slot. *Flip* can also be made morphologically plural in this phrase, e.g., *beautiful flips*; again, this is behavior shared only by nouns. In contrast to the noun *flip*, the verb *flip* inflects with the past-tense suffix *-ed*. It could also take other verbal suffixes and occur in combination with an auxiliary verb, e.g., *he is flipping the pancakes*; this behavior is shared only by verbs.

Interactive problem set: Criteria for nouns and verbs in English

We have seen that while semantic definitions of word classes leave us wanting, morphosyntax provides clear and concrete evidence that allows us to differentiate nouns from verbs in English. When we look at languages from all over the world, we find that the vast majority of languages have clear morphosyntactic criteria by which distinct lexical classes are defined (but see Textbox 5.1 for further discussion). Interestingly, ***languages differ in the particular sets of lexical classes that they have***. For example, there are many languages without a lexical class of **articles** (e.g., English *a* and *the*), while English lacks lexical classes of **classifiers** and **evidentials**.

TEXTBOX 5.1 **DO ALL LANGUAGES DISTINGUISH NOUNS FROM VERBS?**

There are a few languages where the evidence for distinct word classes is not as clear. For example, in some indigenous languages on the northwest coast of North America it is difficult to find morphosyntactic behavioral evidence that differentiates noun roots from verb roots. These languages have been central to debates about whether the distinction between nouns and verbs is universal, reflecting a core human conceptualization of the world. For discussion of one such language, see the Nuuchahnulth Language Profile, Section LP5.2.3.

5.1.2 Cross-Linguistic Differences

Languages differ not only in their inventories of lexical classes but also in the size of each lexical class. For example, while English has hundreds of adjectives, Jaruwara, an Arawá language of native South America, has only fourteen (Dixon 2004: 75). This does not mean that speakers of Jaruwara cannot express the concepts conveyed by adjectives in English. It is just that they express most of these concepts with verbs or with possessed nouns, rather than with lexical adjectives. Consider the following sentence in Jaruwara and its English translation.

(1) Jaruwara (Dixon 2004: 192)

o-tati	*kone*	*bite*	*nafi*	*sawa-wa*	*kawahake*
1SG.POSS-head	hair	small	all	be.white-REDUP	now

'All the small hairs on my head are white now.'

The English sentence uses two lexical adjectives, *small* and *white*. The Jaruwara sentence uses only one: *bite* 'small.' The concept of 'white' is conveyed with a lexical verb *sawa* 'to be white,' which here has the final syllable repeated or **reduplicated** (marked by REDUP in the morpheme gloss). This process, whereby all or part of a morpheme is repeated to signal a certain meaning, applies to verbs in Jaruwara, but never to adjectives. The fact that *sawa-wa* exhibits reduplication is one piece of evidence that demonstrates that it is a verb.

SIDEBAR 5.3
For further discussion and other examples of reduplication, see the Indonesian Language Profile, including Textbox LP12.2.

The example above shows that ***in order to determine the lexical class of a word in a language, we have to determine which grammatical properties characterize each class***. Although no two languages use exactly the same set of criteria to define their lexical classes, there are certain grammatical features that frequently characterize lexical classes in the languages of the world. What follows is a brief cross-linguistic overview of some of the grammatical features that typically characterize common lexical classes. Remember that there is no language that exhibits all the features discussed here, and there are many languages that use criteria not in these lists.

5.2 Nouns

The term* noun *refers to a grammatically defined word class, whose members can function as the heads of noun phrases. As will be discussed in the next chapter, noun phrases are often linked grammatically to verbs and other elements, and often take on roles such as subject or object. Nouns typically denote entities or concepts. Like verbs, adjectives, and adverbs, nouns constitute an **open word class** in most languages of the world. That is, one can easily incorporate new members into it through **borrowing** and other word-formation processes. Open classes can be contrasted with **closed word classes**, or those that are resistant to new members and whose members are often small in number (e.g., Jaruwara adjectives or English articles; the latter has only two members, *a(n)* and *the*).

SIDEBAR 5.4
For examples of languages with dual forms, see the Bardi and Manambu Language Profiles (LP8 and LP10).

It is common for nouns to inflect (i.e., have different morphological forms) based on the grammatical category of **number**. The majority of languages differentiate only **singular** number from **plural**, as in English *dog ~ dogs*. However, some languages also have other number categories, such as **dual** (exactly two), and paucal (a few).

SIDEBAR 5.5
Grammatical gender systems are described in the Tsez Language Profile, Section LP7.3.1, and in the Manambu Language Profile, Section LP10.2.3.

In some languages, nouns are assigned **grammatical genders**, a term that refers to grammatical systems that classify nouns into two or more types, which trigger distinct patterns of agreement on

articles, adjectives, verbs, or other word classes. Most people are aware of grammatical gender in the Romance languages. For example, in French a male student is referred to as *un étudiant* and a female student as *une étudiante*; the *e* at the end of both the article and the noun indicates feminine gender. While sexually male and female referents tend to be placed in different categories in grammatical gender systems, many inanimate and other asexual nouns are also classified in such systems. Many languages have more than two grammatical genders and some languages have more extensive systems with many more noun classes. In most languages, one cannot tell the grammatical gender of a noun from the form of the noun alone (e.g., French *légume* 'vegetable' is masculine, while *plume* 'feather' is feminine).

It is common for nouns to inflect for **case**, the morphological marking of the syntactic and (in some cases) semantic relationships that hold between the noun phrases and the verb of a sentence (see Textbox 5.2). The paradigm in Table 5.1 illustrates eight distinct case forms of Latin, five in the singular and three in the plural. (The phonological forms that result from case inflections are referred to as **declensions** in traditional grammar.)

TEXTBOX 5.2 **CASE**

In many languages, the form of a noun (and sometimes other elements within the noun phrase, such as adjectives or demonstratives) will vary depending on the syntactic and/or semantic relationship that holds between the noun and another word in the sentence (usually the verb). The Latin examples given in Table 5.1 illustrate different case forms of the Latin noun 'brother.' **Nominative** is the term for the case used when the noun is the subject of a clause, **accusative** is the case used when the noun is the object of the clause, **genitive** is the case used when the noun is a possessor (e.g., *brother's book*) or holds a similar relationship with another noun, and **locative** is the case used when the noun is a location (*on my brother*), etc.

TABLE 5.1 Declension of Latin *frāter* 'brother'

	Paradigm for *frāter* 'brother' in Latin	
	Singular	Plural
Nominative (subject)	*frāter*	*frātrēs*
Accusative (object)	*frātrem*	*frātrēs*
Ablative ('from')	*frātre*	*frātribus*
Dative ('to')	*frātrī*	*frātribus*
Genitive ('of')	*frātris*	*frātrum*

Moving on to syntax, in many languages a noun must be present in a noun phrase in order for modifiers to be used. For example, in English we cannot simply say *his three red*. We must have a noun in order to use the modifiers, e.g., *his three red bicycles*. In most languages, only a noun can occur in this position, as the **head** of a noun phrase (the modifiers are called **dependents**). The noun and the modifiers together form a single syntactic unit

SIDEBAR 5.6
Grammatical relations and semantic case roles are further discussed in Section 6.3. To further explore case, see the Finnish Language Profile, Section LP4.3, and the Tsez Language Profile, Section LP7.3.1.

called a noun phrase (discussed in the next chapter). In most languages the ordering of the noun with respect to its modifiers is quite restricted. Thus, in English we cannot move the noun to produce **his bicycle three red* or **bicycle his three red*. There is only one "slot," or position, in the noun phrase in which a noun may occur.

This brief discussion has mentioned only three common inflectional categories of nouns (number, gender, and case) and only one syntactic feature (the ability to head a noun phrase). There are many other morphosyntactic properties that can identify the class of noun in the world's languages. When a linguist is studying the grammar of a language, she or he must determine the particular morphological and syntactic features that identify the class of nouns in that language; no two languages will have exactly the same set of features as criteria.

5.3 Verbs

The term* verb *refers to a class of words that function as predicates, the structural centers of clauses. Verbs typically denote actions, events, activities, or states. In most languages, the class of verbs is a large and open lexical class, with the ability to incorporate new members. Verbs inflect for many different categories in the world's languages. Most typically, verbs inflect for **tense** (e.g., past, present, and future) and the related category of **aspect** (e.g., ongoing versus completed), for properties of their noun-phrase **arguments** (e.g., person, number, and gender), for **negation**, and for **mood** (e.g., declarative and interrogative). Inflectional morphology of verbs in English and Spanish is discussed in Textbox 5.3.

SIDEBAR 5.7
For an example of a language with a closed verb class, see the Bardi Language Profile (LP8).

Table 5.2 on page 115 gives a partial **paradigm** of a verb in Dolakha Newar, a Tibeto-Burman language spoken in Nepal. Note that there are distinct forms for the present and future tenses. The form of the verb also changes with the person and number of the subject noun phrase. Hence *wāl-a-gi* is used for 'I mix'; *wāl-a-gu* is used for 'we mix,' etc. This type of inflection, in which one word indexes semantic categories of another word, is referred to as **agreement** (see Textbox 5.4). We can say that the Dolakha verb "agrees" in person and number with the subject. In Dolakha Newar, this is true of (almost) every verb and is true only of verbs; agreement is a morphosyntactic feature which uniquely identifies verbs in this language.

SIDEBAR 5.8
Verb agreement is described for several languages in the Language Profiles: South Conchucos Quechua (Section LP6.3), Tsez (Section LP7.3); Bardi (Section LP8.2), Lowland Chontal (Section LP9.2), Manambu (Section LP10.3), and Seneca (Section LP13.5).

TEXTBOX 5.3 **VERB INFLECTIONS IN ENGLISH AND SPANISH**

English has only a small set of verbal inflections (i.e., inflectional morphemes that affix to verbs): a present tense, which is used only if the subject is third-person singular, a past tense, and two suffixes that are traditionally referred to as the past and present participles. The last two form compound tenses when combined with an auxiliary:

The exception proves the rule.
They proved that the Higgs Boson exists.
It was proven to be correct.
They are proving her theory.

English verbs are complicated, as different classes of verbs have undergone independent changes over time. For many verbs the past tense and the past participle have the same form (e.g., *he cooked dinner only once; breakfast was cooked daily*, where the former has the past tense and the latter the past participle; compare to: *he ate dinner only once; breakfast was eaten daily*).

Third-person singular present tense	*-s*
Past tense	*-ed*
Past participle	*-en*
Present participle	*-ing*

In other languages, such as Spanish, verbs have many inflected forms. The paradigm below represents less than a quarter of the inflected forms of a regular Spanish verb.

Even though English and Spanish differ greatly in their number of inflectional suffixes, in both languages only verbs can take these suffixes.

Partial paradigm of the Spanish verb *tomar* 'to take, to drink'

Meaning	Pronoun		Verb form
First-person singular present	*yo*	'I'	*tom-o*
Second-person singular present	*tú*	'you (familiar)'	*tom-as*
Third-person singular present	*él ella*	'he,' 'she'	*tom-a*
First-person plural present	*nosotros*	'we'	*tom-amos*
Second-person plural present	*vosotros*	'you (plural)'	*tom-áis*
Third-person plural present	*ellos*	'they (masculine)'	*tom-an*
	ellas	'they (feminine)'	

TEXTBOX 5.4 **AGREEMENT**

When the morphological form of the word varies depending on categories in another word in the same sentence, it is said to agree with that word in that category. In English, demonstratives agree in number with the accompanying noun, e.g., *that boy, those boys*. In many languages, verbs agree in person and number with the subject noun phrase. For example, in French 'I dance' is *je danse*, but 'we dance' is *nous dansons*, and 'you (plural) dance' is *vous dansez*. Thus, the form of the verb changes depending on the person and number of the subject. In other words, the French verb agrees with the subject in person and number, as do Spanish verbs (as shown in Textbox 5.3).

TABLE 5.2 Dolakha Newar verb forms in the present and future tenses

Dolakha Newar present and future-tense paradigms for the verb *wāl-* 'mix; knead'

Subject	Present	Future
First-person singular	*wāl-a-gi*	*wāl-i*
First-person plural	*wāl-a-gu*	*wāl-i*
Second-person singular	*wāl-a-n*	*wāl-i-na*
Second-person plural	*wāl-a-min*	*wāl-i-nan*
Third-person singular	*wāl-a-i*	*wāl-e-u*
Third-person plural	*wāl-a-hin*	*wāl-e-u*

There are a number of syntactic properties that can characterize verbs in the world's languages. ***In most languages, verbs occur in a fixed position in a neutral sentence***. For example, in English, the verb comes after the subject and before the object (if there is one), as in the sentence *John broke the lamp*. In many languages, the verb comes at the end of the sentence, as in Japanese:

(2) Japanese

boku	*ga*	*tomodachi*	*ni*	*hana*	*o*	*ageta*
1SG	NOM	friend	DAT	flower	ACC	give.PST

'I gave flowers to my friend.'

In other languages, the verb comes at the beginning of the sentence, as in Jacaltec, a Mayan language spoken in Guatemala:

(3) Jacaltec (Craig 1977: 149)

xul	*naj*	*pel*	*ewi*
come.PST	CLF	Peter	yesterday

'Peter came yesterday.'

In many languages, verbs occur in a fixed syntactic position with respect to **auxiliary verbs**. Auxiliary verbs form a small and fairly closed subclass of verbs. They often occur adjacent to the **main verb** (the verb that carries the more concrete semantic information) but can also occur in other positions in the clause. Auxiliary verbs can convey a range of meanings, such as negation, necessity, obligation, and ability. Some auxiliaries, in combination with the main verb, signal whether an event is ongoing, completed, or habitual (these types of distinctions are referred to as **aspect)**. The presence of an auxiliary verb sometimes determines the morphological form of a main verb. We can see this by comparing English *should go, had gone,* and *ought to go*. A list of some auxiliary verbs in English is given in (4).

SIDEBAR 5.9
For more on aspect, see the Manange Language Profile, Textbox LP3.8.

(4) Auxiliary verbs in English
has, have, had, do, did, does, shall, will, should, would, may, might, must, can, could, ought

STOP AND REFLECT 5.1 **ENGLISH NOUNS AND VERBS**

Now that we have seen some of the grammatical properties that distinguish nouns from verbs, consider the underlined words in the English sentences below. Which are nouns and which are verbs? What grammatical (i.e., morphological or syntactic) arguments can you provide to support your answer?

He promised his roommate he would clean the kitchen.
Most people thought the senator didn't follow through on her promises.
She likes reading to her children at bedtime.
His reading of the situation was different.

5.4 Adjectives

The term* adjective *refers to a word class with distinct grammatical behaviors, which functions to modify nouns. The class of adjectives can be either an open class, easily incorporating new members, or a closed class with a finite number of words, as in Jaruwara (discussed in Section 5.1 above).

In English and many other languages, the class of adjectives has two distinct syntactic positions: adjectives can occur within a noun phrase where they modify a noun, as in *the sour apple*. They can also occur as the complement to a **copula**, as in *the apple is sour*. This distributional pattern is found with all English adjectives (see Stop and Reflect 5.2). Sometimes quantifiers have this property (*all the books ~ that is all*), but they tend to be considerably more restricted (e.g., **the books are several*).

SIDEBAR 5.10
Copulas are further discussed in Section 6.2.3, and in the Manange Language Profile, Section LP3.2.2.

STOP AND REFLECT 5.2 **ADJECTIVES INSIDE AND OUTSIDE NOUN PHRASES**

Each of the following English sentences has an adjective underlined. In which sentences is it modifying a noun within a noun phrase and in which is it the complement of a copula? Check your answers in Sidebar 5.13 on the next page.

a. *The kids were really smart.*
b. *She gave him red roses on his birthday.*
c. *There was hot soup on the table when they came in.*
d. *He is never late for class.*

In many languages, the form of the adjective varies depending on properties of the noun, such as number, gender, or case. Thus, adjectives in such languages can be said to agree with the noun. In Russian, adjectives agree with the noun in number, gender, and case, as the paradigm in Table 5.3 shows.

Adjectives also often have forms for degree, such as comparative and superlative (e.g., *big, bigger*, and *biggest*).

TABLE 5.3 Inflection of the Russian adjective *novyj* 'new' (Corbett 2004: 202)

	Masculine	Feminine	Neuter	Plural
Nominative	novyj	novaja	novoe	novye
Accusative	*	novuju	novoe	*
Genitive	novogo	novoj	novogo	novyx
Dative	novomu	novoj	novomu	novym
Instrumental	novym	novoj(u)	novym	novymi
Locative	novom	novoj	novom	novyx

*These forms depend additionally on animacy.

In many languages, words that express properties of nouns are not members of a lexical class of adjectives but are actually verbs or nouns. For example, in Dolakha Newar, all color terms are lexical verbs. Consider example (5).

SIDEBAR 5.11
For a discussion of a language with two classes of adjectives that are distinct from both nouns and verbs, see the Manange Language Profile, Section LP3.3.3.

(5) Dolakha Newar

āmp	*heŋgar-a*
mango	red-3SG.PST

'The mango became red/reddened.'

In (5), the word for 'red' takes verbal inflection, specifically the suffix for third-person singular past. To produce the noun phrase 'red mango,' a different suffix is needed and the color term is placed before the noun: *hẽga-u āmp*. Note that any verb can be transformed into a noun modifier in this way. For example, compare *mi yer-a* 'the man came' and *ye-u mi* 'the man who came.' It is clear that the word for 'red' in Dolakha Newar has the same morphological and syntactic patterns as verbs do, and that it is therefore, in fact, a verb.

SIDEBAR 5.12
Answers to Stop and Reflect 5.2:

a. Copula complement
b. Modifies noun (*roses*) in a noun phrase
c. Modifies noun (*soup*) in a noun phrase
d. Copula complement

5.5 Adverbs

Like adjectives, the word class of adverb can be either open or closed. ***The term adverb is a cover term for words that are not lexical nouns, verbs, or adjectives, but which still have lexical (as opposed to grammatical) content*** (Payne 1997: 69). Semantically, adverbs tend to be modifiers of verbs, clauses, or sentences or are used to indicate speaker attitude (*Incredibly, she forgot her keys again!*), **stance** (*He definitely won't pay!*), or the type or source of evidence (*Apparently they've already left*).

The extent to which adverbs, or subclasses of adverbs, demonstrate consistent morphosyntactic behavior varies across languages. Often, they can be defined by their absence of grammatical properties: adverbs usually don't inflect; they don't occur within a noun phrase (unless adjacent to an adjective); and they don't occur with modifiers other than other adverbs. Some adverbs demonstrate considerably more freedom of positioning than do nouns, verbs, or adjectives. We can see this in the English sentences in (6).

(6) *Slowly John opened the envelope.*
John slowly opened the envelope.
John opened the envelope slowly.

No other word class in English has this degree of flexibility in positioning.

5.6 Adpositions: Prepositions and Postpositions

We now move from our discussion of **lexical word classes** (those that signal a vast array of meanings) to a discussion of **grammatical word classes** (those that function grammatically and are more limited in the range of meanings they express). While lexical word classes are open in most languages, ***grammatical word classes are generally closed***, only admitting new members on rare occasion.

Most independent words that function grammatically do not inflect but have a single morphological form; these are referred to as **particles**. There are many types of particles, and particles may be found in a wide variety of grammatical word classes.

SIDEBAR 5.13
A discussion of particles with a range of different functions can be found in the Seneca Language Profile, Section LP13.5.4.

Prepositions *and* postpositions (*or* adpositions*) are (usually) particles that occur with a noun phrase and that indicate the grammatical, spatial, temporal, or logical relationship of the noun phrase to another element of the clause*. English has prepositions; examples of prepositions in English are *on, of, with, by, under, like*, and *to*.

Prepositions differ from postpositions in their linear ordering with respect to the noun. Very simply, prepositions occur before the accompanying noun phrase, while postpositions occur after it. In the following English examples, the prepositions are underlined and the accompanying noun phrases are in square brackets:

(7) *I went <u>to</u> [the beach].*
The girl <u>with</u> [the umbrella] was still getting wet.
You'll find the key <u>under</u> [the mat].
He plays <u>like</u> [a professional athlete].

Now consider the Japanese sentence below:

(8) Japanese (Shibatani 1990: 265)

taroo	*wa*	*[tosyokan]*	*<u>ni</u>*	*itta*	*ga,*	*hon*	*wa*	*yomanakatta*
Taroo	TOP	library	to	go.PST	but	book	TOP	read.NEG.PST

'Taroo went to the library but did not read a book.'

Note that the word *ni* 'to' follows the noun *tosyokan* 'library' and is thus a postposition. Therefore, Japanese exhibits an ordering that is opposite to that used in English.

5.7 Quantifiers and Numerals

Quantifiers usually occur within the noun phrase where they indicate a quantity of the object denoted by the noun. Languages differ as to how many quantifiers they have, their structure, and their grammatical properties. Most languages allow only one quantifier in a single noun phrase; the class of quantifiers can then be identified as the set of words which can fill that single syntactic position.

In most languages, **numerals** form a word class distinct from quantifiers. In English, we can note that while two quantifiers cannot co-occur in a single noun phrase (e.g., we cannot say ***many all boys*), a quantifier and a numeral may co-occur (*all three boys*). Numerals can also take affixes to convert them from cardinal numbers (e.g., *seven*) to ordinal numbers (*seven-th*). This grammatical behavior can distinguish numerals from other quantifiers in the language.

5.8 Demonstratives

Demonstratives form a fairly closed set of words that occur within the noun phrase and which have a* deictic *("pointing") function. Demonstratives can be used to "point" to something in the immediate environment (e.g., *this shirt is really ugly*), to knowledge shared by the speaker and hearer (*That was outrageous last night!*), or to something that has just been said in the discourse (*That's ridiculous! I never want to hear you say that again*).

SIDEBAR 5.14
For more on **deictic expressions**, see Section 7.2.

Languages differ in the size of the demonstrative class, as well as in the distinctions which they draw. Perhaps all languages minimally have a distinction between **proximal** demonstratives (e.g., *this*), which indicate things closer to the speaker, and **distal** demonstratives (e.g., *that*), which indicate things farther from the speaker. Many languages make further distinctions; see Textbox 5.5 for one such example.

TEXTBOX 5.5 SINHALA DEMONSTRATIVE DISTINCTIONS

Sinhala, the national language of Sri Lanka, has four levels of demonstratives: one is used if the referent is close to the speaker, another if the referent is close to the hearer, a third if the referent is visible but not close to either one, and a fourth if the referent is not visible. These forms are illustrated to the right. Note that the last example is even used if the child is under the table and pulling on the speaker's leg.

meyaa laməyek	'this is a child' (in the vicinity of the speaker)
oyə laməyek	'that is a child' (in the vicinity of the hearer)
arə laməyek	'that is a child' (not near either the speaker or the hearer, but visible)
eeya laməyek	'that is a child' (not visible to the speaker)

5.9 Articles

Articles form a class of small grammatical particles that obligatorily occur in some noun phrases. English distinguishes between the **indefinite** article *a(n)* and the **definite** article *the* (see Textbox 5.6). Articles signal different meanings in different languages.

In some languages, articles take different forms depending on the class of the head noun. The French definite article, for example, has three forms: one used with singular masculine nouns (*le*), one used with singular feminine nouns (*la*), and one used with plural nouns *(les*).

TEXTBOX 5.6 DEFINITE AND INDEFINITE ARTICLES IN ENGLISH

In English, the indefinite article is used when the speaker judges that the hearer will not be able to identify the referent of a noun phrase, e.g., in *A man came in*, there is no assumption that the hearer should know the man. Compare this with the sentence *The man came in*. Here, the hearer is expected to know which man is being referred to. This distinction (referred to as definiteness) will be discussed again in Chapter 9 on discourse.

5.10 Conjunctions

Conjunctions are grammatical particles that conjoin two or more words, phrases, or clauses at the same level of structure. Conjunctions can therefore be identified by their position between two elements of the same syntactic type. For example, the conjunction *and* in English can be used to conjoin words, phrases, and clauses:

(9)

Nouns:	[*Cats*] *and* [*dogs*] *make good pets.*
Verbs:	*They* [*eat*] *and* [*drink*] *too much.*
Adjectives:	*My cat is* [*black*] *and* [*white*].
Adverbs:	[*Slowly*] *and* [*carefully*] *she filled the glass.*
Noun phrases:	*They brought* [*chocolate cookies*] *and* [*lemon cakes*].
Prepositional phrases:	[*Over the river*] *and* [*through the woods*].
Verb phrases:	*We* [*ate chocolate*] *and* [*drank champagne*].
Clauses:	[*Robin ate chocolate*] *and* [*Chris drank champagne*].

Note that we cannot substitute the conjunction *but* into all of the sentences above, only those where verbs are involved.

5.11 Pronouns

Pronouns appear as the sole element of a noun phrase; they do not co-occur with modifiers, thus they are distinct from nouns (see Textbox 5.7). Thus in English, the phrases **the you, *big he*, and **some us* are highly ungrammatical. Pronouns are so called because they may substitute for an entire noun phrase, e.g., *The man with the yellow hat rescued Curious George; he always does*.

TEXTBOX 5.7 **NOMINALS**

Pronouns and nouns are quite distinct in that nouns can co-occur with modifiers while pronouns cannot. However, they do share the syntactically powerful property of serving as the head of a noun phrase. The term **nominal** can be used as a cover term for nouns and pronouns (and sometimes other things beyond the scope of this chapter).

Languages have distinct pronouns to refer to the speaker, the hearer, and others. These are referred to as **personal pronouns**. Thus, we consistently find pronouns for **first person** (refers to the speaker: *I, we*), **second person** (refers to the addressee: *you*), and **third person** (refers neither to the speaker nor to the hearer: *he, she, it, they*). Textbox 5.8 describes another type of pronoun distinction as well. As these examples demonstrate, English distinguishes singular from plural pronouns in the first and the third person, but not in the second person (English *you* can refer to one or more). English pronouns also distinguish case to a limited extent. For example, we can contrast the first-person pronouns *I, me*, and *my*. In some languages, personal pronouns distinguish many more cases than these; in others, pronouns do not distinguish case at all.

STOP AND REFLECT 5.3 **ENGLISH *Y'ALL***

In some varieties of English, predominantly spoken in the American South, the pronoun *y'all* has developed from *you all*. In what way does this innovation regularize the system of English personal pronouns?

TEXTBOX 5.8 **INCLUSIVE AND EXCLUSIVE PRONOUNS**

It is not unusual for languages of the world to contrast the categories of **inclusive** and **exclusive** in the first-person plural pronouns. In English, the first-person plural pronoun *we* can either include the hearer (inclusive: *you and I*) or exclude the hearer (exclusive: *She and I, but not you*). In other languages, distinct pronouns can occur.

Dolakha Newar

thiji	'we'	(inclusive: you and I and possibly others)
isi	'we'	(exclusive: not you, but I and others)

Another example of an inclusive/exclusive distinction can be found in the Bardi Language Profile, Textbox LP8.5.

In addition to personal pronouns, there are also **demonstrative pronouns**. These are simply demonstratives which occur in the syntactic position of pronouns, that is, as the head of a noun phrase without modifiers, as in the sentence *I hate <u>that</u>*.

Interrogative pronouns are a subset of the interrogative words (or "question words") of a language that occur in the syntactic position of pronouns. Thus, *who* is an interrogative pronoun in *Who let the dog out?*, while *which* is an interrogative word, but not an interrogative pronoun, in *Which class did you take?*

5.12 Other Word Classes

This chapter has focused primarily on word classes found in English and has outlined some of the properties of word classes including noun, verb, adjective, adverb, demonstrative, preposition, and quantifier. There are quite a few other word classes in the world's languages that English does not have. For example, some languages have **numeral classifiers**, words that obligatorily occur with a numeral but that vary with semantic properties of the noun (see Textbox 5.9).

TEXTBOX 5.9 MANDARIN CHINESE NUMERAL CLASSIFIERS

In Mandarin Chinese, numeral classifiers are obligatory between a numeral and a noun. Note how the classifier varies with the animacy, size, shape, and function of the noun:

tiáo: long and skinny things	*sān tiáo yú*	'three fish'
zhāng: flat things	*sān zhāng dìtú*	'three maps'
zhī: small animals	*sān zhī gǒu*	'three dogs'
bǎ: things with handles	*sān bǎ yǔsǎn*	'three umbrellas'
běn: volumes	*sān běn shū*	'three books'

SIDEBAR 5.15
A description of a class of ideophones can be found in the Goemai Language Profile, Textbox LP2.2.

Other languages have **evidentials**, words that express the source of a speaker's knowledge for the content of the utterance and their degree of certainty that the information is true. Other languages have **ideophones**, words that convey a sensory perception of a color, size, shape, etc. There are many other word classes found in the world's languages as well; an exhaustive list is beyond the scope of the current chapter.

CHAPTER SUMMARY

The world's languages have a wide variety of word classes that reflect the diversity of meanings and relations that people express in language. They are characterized by regular grammatical properties that allow them to act as the building blocks for phrases, sentences, and other utterances. Thus, one must examine these grammatical properties, rather than meanings, to determine the classification of words. Not all languages have the same set of word classes. Each language must be examined independently to determine which word classes it has, and each class must be indentified based on the shared morphological and syntactic properties of the words in the class. Table 5.4 lists each of the word classes we have discussed, together with some of the morphological and syntactic properties that each class may exhibit.

Flashcards for English word classes

TEXTBOX 5.10 DATA AND METHODS IN GRAMMATICAL ANALYSIS

Linguists use a number of different methods for investigating grammar, (i.e. morphology, word classes, and syntax). These include: introspection on one's native language, elicitation of grammaticality judgments from native speakers, experiments, analysis of recorded discourse, and quantitative methods applied to large corpora of authentic language use.

Introspection on one's own language and the elicitation of grammaticality judgments from others both require people to reflect on their native language, compare examples, and determine whether or not particular combinations are grammatical. These methods can produce insightful and beneficial results. On the other hand, thinking up examples in the abstract removes the rich context that plays a strong role in shaping linguistic choices. This means that speakers might not think of all the potential environments in which a given example might occur, and so judge a form to be ungrammatical that might actually be attested. Conversely, when speakers are tasked with considering increasingly complicated sentences over a period of time, they sometimes lose track of their grammatical intuitions and can assess sentences as grammatical that might never actually occur. To address these problems, researchers have developed controlled experimental methods for the collection and analysis of grammaticality judgments, which provide a stronger empirical basis for claims regarding the nature of grammatical knowledge.

Another essential method in linguistics is the recording, transcription, and analysis of naturally occurring discourse. Since speech occurs in a particular context to meet the communicative aims of the speakers, analyzing discourse data allows one to study how context shapes the lexical and structural choices that speakers make as they converse. Native speakers who examine such data can provide deeper context-based insights and nuance to the analysis. Of course, one would need to wade through a lot of discourse data to assemble, for example, a complete paradigm of an irregular verb in Italian, a task many native speakers could accomplish in a manner of minutes. Different methods are needed to answer different types of questions.

Increasingly sophisticated computer technologies have led to the development of powerful new computational tools that linguists can apply to very large data sets in order to identify statistically significant patterns. This comparatively new field is referred to as **corpus linguistics**. An example of an insight from corpus linguistics related to word classes in English discourse is that adjectives beginning with the prefix *a-* (such as *afraid, alive*, or *alone*) only rarely modify nouns within a noun phrase (**the alive bird*); they function as complements of copulas or appear elsewhere in the predicate more than 98 percent of the time (Biber et al. 1999: 508). (Insights from corpus linguistics for second language acquisition are discussed in Section 15.2.2.)

All of these methods are useful and all have advantages and disadvantages. They are complementary, answer different types of questions, and expand our theoretical perspectives in different ways.

TEXTBOX 5.11 GLOSSING CONVENTIONS USED IN THIS CHAPTER

Convention	Meaning	Convention	Meaning
1	first person	NOM	nominative
3	third person	POSS	possessive
ACC	accusative	PST	past tense
CLF	classifier	REDUP	reduplication
DAT	dative	SG	singular
NEG	negation	TOP	topic

TABLE 5.4 Summary of common morphological and grammatical properties of word classes

Class	Common morphological categories	Common syntactic properties
Noun	Number (singular, plural, etc.), gender (masculine, feminine, neuter, etc.), case (nominative, accusative, locative, etc.), person of possessor (my, your, etc.)	May function as head of a noun phrase and so occur with modifiers, such as adjectives (*black cat*), quantifiers (*many years*), and demonstratives (*those books*)
Verb	Tense (past, present, etc.), aspect (completed, ongoing, etc.), person/number/gender of arguments, negation, mood (declarative, interrogative, etc.)	Often restricted in position with respect to arguments (e.g., sentence-initial in Jacaltec, sentence-medial in English, sentence-final in Japanese); may occur in combination with auxiliary verbs
Adjective	Comparative (*happier*); superlative (*happiest*); number, gender, or case of modified noun	May be found within the noun phrase modifying a noun (*happy people*) or as a complement to a copula (*they are happy*); may co-occur (*big shiny green leaves*)
Adverb	Absence of morphological inflection	Some have freedom of positioning
Adposition	Usually particles	Precedes (preposition) or follows (postposition) a noun phrase
Quantifiers	Sometimes have common nominal morphology, such as case-marking	Like adjectives, some can occur within a noun phrase (*all people*) or as a copula complement (*that is all*), but the latter position can be quite restricted
Numerals	Ordinal versus cardinal	Usually within a noun phrase; in some languages, must co-occur with numeral classifiers
Demonstratives	Distinguish at least proximal (*this*) from distal (*that*); may inflect for various properties of the noun, such as number (*this ~ these*)	Occur within a noun phrase; may not co-occur
Articles	Usually distinguish indefinite (*a*) from definite (*the*)	Obligatorily occur in many noun phrases
Conjunctions	Usually particles, so do not vary in form	Occur between syntactic elements of the same type (nouns, noun phrases, etc.) which they conjoin (*apples or oranges*)
Pronouns	Distinguish person (1st, 2nd, 3rd), and often distinguish number (singular, plural), case (nominative, accusative, etc.), and other morphological categories of nouns	Occur as the only element in the noun phrase

SUGGESTIONS FOR FURTHER READING

Corbett, **Greville G.** 2013. "Systems of gender assignment." In **Dryer**, **Matthew S.** and **Martin Haspelmath** (eds.), *The World Atlas of Language Structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at: http://wals.info/chapter/32.)

This short article provides an overview of the types of grammatical gender assignment in the world's languages and the role of semantics in this process. An interactive map allows for detailed geographic exploration of different categories.

Dixon, **R. M. W.**, and **Alexandra Aikhenvald**. 2007. *Word: A cross-linguistic typology*. Cambridge University Press.

This volume comprises a set of case studies, each of which presents argumentation for word classes in different languages of the world.

Jones, **Christian**, and **Daniel Walker**. 2015. *Corpus linguistics for grammar: A guide for research*. Routledge Corpus Linguistics Guides. New York: Routledge.

This book is a useful how-to guide for students wanting to learn how to apply quantitative statistical methodologies to the analysis of grammatical patterns in large data sets.

Payne, **Thomas**. 1997. *Describing morphosyntax: A guide for field linguists*. Cambridge University Press.

Chapter 3 of Payne (1997), a volume aimed at upper-level undergraduate students, provides a more extensive discussion of criteria for identifying nouns, verbs, modifiers, and adverbs cross-linguistically.

Velupillai, **Viveka**. 2012. "The lexicon and its classes." In *An introduction to linguistic typology*. Amsterdam and Philadelphia: John Benjamins. 115–153.

This chapter provides a more in-depth introduction to word classes in the world's languages.

EXERCISES

1. Each of the following sentences has one word given in bold. State the word class of each bolded word and then give at least two pieces of evidence (morphological or syntactic) that justifies your analysis.

Example: *I just* ***oiled*** *the furniture.*
Word class: Verb
Evidence: (i) The verb carries the past-tense suffix *-ed*. (ii) It follows the subject and directly precedes the object. (iii) It is preceded by the adverb *just*.

a. *My nephew often* ***drives*** *to Berkeley.*
b. *They are planning to make the journey in two long* ***drives****.*
c. *The grass is always* ***greener*** *on the other side of the fence.*
d. *He walked onto the* ***green****.*
e. ***Usually*** *she is home by seven.*
f. *It is the* ***usual*** *routine.*

Now do the same for the following quote, attributed to comedian Groucho Marx:

Time ***flies like*** *an arrow;* ***fruit flies like*** *a banana.*

g. ***flies*** in *Time flies like an arrow.*
h. ***like*** in *Time flies like an arrow.*
i. ***fruit flies*** in *fruit flies like a banana.*
j. ***like*** in *fruit flies like a banana.*

2. Consider the following sentences:

   a. *John ran up a bill.*
   b. *John ran up a hill.*

   Note that Example (c) is acceptable, while Example (d) is not:

   c. *John ran a bill up.*
   d. **John ran a hill up*

   Use what you know about word classes to explain this variation in behavior. Then come up with three similar pairs of sentences that show the same patterns.

3. Below is an excerpt from the poem "Jabberwocky" by Lewis Carroll, an author who was noted for using made-up words in his work. Read the lines, with particular attention to the made-up words that are bolded and underlined, then answer the questions below.

   'Twas brillig, and the slithy toves
   Did **gyre** and **gimble** in the **wabe**:
   All **mimsy** were the **borogoves**,
   And the mome raths outgrabe.

   "Beware the Jabberwock, my son!
   The jaws that bite, the claws that catch!
   Beware the Jubjub bird, and shun
   The **frumious** Bandersnatch!"

   He took his **vorpal** sword in hand:
   Long time the manxome foe he sought –
   So rested he by the Tumtum tree,
   And stood awhile in thought.

   And, as in **uffish** thought he stood,
   The Jabberwock, with eyes of flame,
   Came whiffling through the **tulgey** wood,
   And burbled as it came!

   One, two! One, two! And through and through
   The vorpal blade went snicker-snack!
   He left it dead, and with its head
   He went **galumphing** back.

   "And, has thou slain the Jabberwock?
   Come to my arms, my beamish boy!
   O **frabjous** day! Callooh! Callay!"
   He chortled in his joy.

   Examine the grammatical properties of each of the bolded words; what word class do you think each word belongs to? Make sure to use morphological or syntactic evidence to support your answer.

4. State the word class for each of the following English words (do not use the cover term "determiner"):
   a. *these*
   b. *a*
   c. *some*
   d. *through*
   e. *should*
   f. *might*
   g. *nine*
   h. *their*
   i. *the*
   j. *or*

5. Examine the following sentences:

a. *Leslie is working, and so is Nancy.*
b. *Philip went bankrupt, and so did Max.*
c. *Lucy had seen the dog, and so had her mother and her neighbors.*
d. *Robin will avoid the construction, and so will Pat.*

i. Construct three other sentences using the *and so* construction, varying the word that follows *and so*.
ii. Members of what lexical category must follow *and so*?

6. Consider the following noun phrases in Italian:
Procedures for the Grammatical Analysis of Unfamiliar Languages

un chilo di farina	'a kilo of flour'
una storia sulla infanzia	'a story about childhood'
quei dieci libri verdi	'those ten green books'
quello specchio	'that mirror'
molti problemi difficili	'many difficult problems'
il specchio di mio fratello	'my brother's mirror'
una maglia verde	'a green sweater'

Provide the English translation of each of the following words:

farina
infanzia
maglia
mia/mio
problemi
specchio
storia
verde/verdi

i. Is *chilo* a quantifier or a noun? How do you know?
ii. *Quei* and *quello* are members of what word class?
iii. *Un, una*, and *il* are members of what word class?
iv. *Sulla* is a member of what word class?
v. Based on the examples presented, which of the following statements are true?

a. Possessive pronouns precede the noun.
b. Demonstratives precede numerals.
c. Nouns cannot be modified by both articles and possessive expressions.
d. The noun is always the final element in the noun phrase.
e. Possessive expressions reflect the grammatical gender of the following noun.
f. Adjectives follow nouns.
g. The form of the demonstrative changes with the number of the noun.
h. Numerals must directly precede adjectives.

7. Consider the following sentences in Russian (based on Comrie 1979: 109–111):

a. *rabótnik zaščiščájet žénščinu*	'The workman defends the woman.'
b. *rabótniki zaščiščájut žénščinu*	'The workmen defend the woman.'
c. *rabótnik zaščiščájet žénščin*	'The workman defends the women.'
d. *rabótniki zaščiščájut žénščin*	'The workmen defend the women.'
e. *stáryj rabótnik zaščiščájet ženščinu*	'The old workman defends the woman.'
f. *stáraja mát' zaščiščájet ženščinu*	'The old mother defends the woman.'

i. List *all* Russian forms for each of the following words.
'workman'
'workmen'
'woman'
'women'
'defend'
'old'
'mother'

ii. What is the word class of *zaščiščájet?* When is *zaščiščájet* used, as opposed to *zaščiščájut?* What is the name of this grammatical category?
iii. Based on the data above, what grammatical category does the Russian noun inflect for?
iv. Based on the data above, what grammatical category does the Russian adjective inflect for?

8. The following examples illustrate some properties of nouns, verbs, and adjectives in Dolakha Newar. Analyze each sentence, dividing words into morphemes when appropriate. (*Note*: the form *juu* shortens to *ju* by a rule that is not important for the current problem.)

a.	*misāmi ŋila.*	'The/a woman laughed.'
b.	*misāmi ŋileu.*	'The/a woman will laugh.'
c.	*ŋilgu misāmi*	'The/a laughing woman'
d.	*misāmi ḍaktar jura.*	'The/a woman became a doctor.'
e.	*misāmi ḍaktar jueu.*	'The/a woman will become a doctor.'
f.	*misāmi juu ḍaktar*	'The/a woman doctor' (i.e., 'The/a woman who became a doctor.')
g.	*misāmi dosari jura.*	'The woman became pregnant.'
h.	*misāmi dosari jueu.*	'The/a woman will become pregnant.'
i.	*dosari misāmi*	'The/a pregnant woman'

i. State the properties by which verbs can be identified as a distinct lexical class in this language.
ii. Based on the data given, is there evidence for distinguishing between nouns and adjectives? Why or why not?

Now consider the data in (j) through (m).

j.	*ḍwākau muca*	'The/a big child'
k.	*cicāu muca*	'The/a little child'
l.	*muca ḍwākara.*	'The/a child grew.'
m.	*sabun cicāra.*	'The/a soap shrank.'

iii. Based on the data given, are the lexemes for 'big' and 'small' in this language nouns, verbs, or adjectives? Explain.

9. The table below presents a partial verb paradigm from Dzala, a Tibeto-Burman language spoken in Bhutan. Divide each word into its composite morphemes, noting any allomorphic variation. Then answer the questions below.

Transcription note: A grave accent over a vowel indicates low tone.

	Imperative	Prohibitive	Future	Infinitive
	"verb!"	"don't verb!"	"will verb"	"to verb"
'sit'	oma	mooma	omgyu	omma
'lie down'	gana	magana	gangyu	ganma
'wake'	làŋa	màlàŋa	làŋgyu	làŋma
'go'	broga	mobroga	brogyu	brogma
'say'	ɲèe	mèɲèe	ɲègyu	ɲèma
'scratch'	ŋròpa	mòŋròpa	ŋròpkyu	ŋròma
'tell'	ʃata	maʃata	ʃatkyu	ʃatma
'give'	bie	mibie	bigyu	bima

i. Provide a list of all roots and affixes in the data. If there is allomorphic variation, list all occurring forms.
ii. How does the prohibitive verb differ from the imperative verb? What is the underlying meaning of the prefix found in the prohibitive forms?
iii. Consider the forms of the imperative suffix, and add to these the form *zama* 'eat' from *zama* 'to eat.' Which allomorph of the imperative should be taken as basic? Why? What conditions the allomorphic variation?
iv. Consider the prefixes found in the prohibitive verbs. Which prefix would you expect to find with the following verb roots: *ʃor-* 'lose,' *be-* 'do,' and *lòg* 'pour'? What is the term for the primary phonological process illustrated here?
v. Now consider the forms of the future suffix. Which allomorph is basic? State in clear prose the conditions under which the non-basic allomorph appears.
vi. In which forms do you find allomorphic variation in the roots? Why do you think this variation occurs?

6 Syntax

Words in Combination

KEY TERMS

- Clause
- Constituent
- Phrase: noun phrase, adpositional phrase, verb phrase
- Argument: core versus oblique
- Transitivity: intransitive, transitive, ditransitive
- Grammatical relations: subject, object, indirect object
- Sentence
- Complex sentence
- Coordination versus subordination
- Adverbial, complement, relative clause

CHAPTER PREVIEW

The previous four chapters have shown how sounds are produced and patterned, how they combine into morphemes, and how morphemes combine into words. We now continue up the hierarchy to increasingly complex levels of structure by examining syntax: the combination of words into phrases, clauses, and sentences, and the grammatical principles and relationships that underlie these structures. Syntax is critical to communication as it allows us to talk about events, describe situations, and attribute states, actions, or activities to particular individuals or entities. This is done in part through grammatical relationships between verbs and noun phrases. These relations are grammatically marked and are independent of the semantic relationships between verbs and their arguments. The principles of syntactic organization also allow us to express complex relationships between events or situations. This is done through the combination of clauses into sentences through a variety of means.

Like the previous three units, this chapter emphasizes processes of analysis and argumentation. Each language is unique in the range of grammatical phenomena that can be used to identify and relate elements at every level of the syntax; each language needs to be examined independently, with the syntactic structures justified by the language-particular facts.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **identify syntactic constituents in a data set;**
- **present arguments for constituency;**
- **differentiate among intransitive, transitive, and ditransitive verbs;**
- **identify core and oblique arguments;**
- **provide evidence that a noun phrase is a subject, object, or indirect object;**
- **state the difference between coordinate and subordinate clauses;**
- **differentiate adverbial, complement, and relative clauses in English.**

6.1 Introduction

Syntax ***refers to the set of grammatical structures that allow for the combination of words into phrases and sentences***. As with other aspects of language, syntactic structures are principled and systematic, with the potential for detailed analysis and description. Words that occur in phrases and sentences can be shown not only to have semantic, or meaningful, relationships to each other but also to have intricate grammatical relationships to each other. Syntax is important because it provide speakers with a regular structure or framework for conveying relationships between people, things, or ideas and the states, events, or activities that they are involved in. The regularity of this framework within a language allows speakers to quickly produce and process the information. It also allows for the marking of particular grammatical categories that have arisen over time through repeated use by speakers. This process of grammaticalization, as well as the process of syntactic change, will be discussed more fully in Chapter 13. Textbox 6.1 introduces a longstanding theoretical debate in the field.

SIDEBAR 6.1

You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary flashcards, and interactive problem sets. In addition, the resource entitled "Procedures for Grammatical Analysis of Unfamiliar Languages," which is available in the website materials for Chapter 5, is highly relevant to the linguistic analysis in this chapter as well.

TEXTBOX 6.1 **FUNCTIONAL VERSUS FORMAL APPROACHES TO SYNTAX**

This book approaches linguistics from a typological and functional perspective. Within syntax, functional approaches examine the relationship between particular syntactic structures and how they are used in discourse interaction, and especially seek to explore how the **functions** have shaped the structures. That is, they seek to explain syntactic structures based on how they are used.

A very different perspective is found in approaches to syntax grounded in **formal theory**. These approaches seek to explain syntactic structures independently of function, instead constructing formal models of linguistic knowledge based on abstract categories, structures, and principles. In some theories, such models are posited to represent a single Universal Grammar that is considered to be part of humankind's genetic endowment. Language-specific variation is brought about through specific modifications of the model. Radford et al. (2009) is an introductory textbook written from this perspective. See also Section 14.10, for a discussion of formal and functional approaches in the study of how children acquire language.

6.2 Constituent Structure

One of the central aspects of linguistic design is hierarchical structure: units contain units that contain units. We have seen so far that there are units called words that contain smaller units called morphemes, which are made up of smaller units called phonemes. We will now move up from the word level to see that words combine into **phrases**, that phrases combine into **clauses**, and that clauses combine into **sentences**, leading us to progressively more complex structures.

SIDEBAR 6.2
In several places throughout the chapter, you will be directed to apply what you learn to short data sets. Answers are available on the companion website, and indicated by the website icon ().

Completing these data sets as you work through the chapter is highly recommended, as it will increase your understanding of the unit and improve your skills of linguistic analysis.

Consider the English sentence in (1):

(1) *The kids arrived at the house*.

Our intuitions tell us that the two words *the* and *kids* form a single unit. By contrast, *kids* and *arrived*, to the exclusion of *the*, do not. You can sense that there is a natural break between *kids* and *arrived*, as indicated by the symbol | in (2). The starred example, indicating a break between *The* and *kids*, does not seem natural.

(2) **a.** *The kids | arrived at the house*
b. **The | kids arrived at the house*

SIDEBAR 6.3
Remember that when discussing grammar, an asterisk (*) in front of a phrase marks an example as "starred"; i.e., it indicates that speakers find it to be ill-formed or ungrammatical.

Observe that *arrived at the house* forms a unit, as it tells us something about the kids, specifically what they did. We can also note that *at the house* is optional; it can be left off and the result would still be the grammatical sentence *The kids arrived*. Of course, we would have to leave off the entire phrase. We couldn't say, for example, **the kids arrived at* and remove only *the house*. So *at the house* appears to be a single unit, separate from *arrived*:

(2) **c.** *arrived | at the house*
d. **arrived at | the house*

We are not finished, however, as *the house* is a smaller unit yet, with the definite article *the* pertaining to *house* and not to *at*.

(2) **e.** *at | the house*
f. ** at the | house*

If we put each of these units within square brackets, we can represent the hierarchical structure visually, as in (2g). The outermost set of brackets encloses the sentence as a whole:

(2) **g.** [[*The kids*][*arrived* [*at* [*the house*]]]]

The term **constituent** simply refers to a subpart of a higher unit. Our sentence contains two major syntactic constituents: [*the kids*] and [*arrived at the house*]. The latter contains two constituents, the verb *arrived* and the phrase [*at the house*]. This in turn contains two constituents: the preposition *at* and the phrase [*the house*]. Finally, [*the house*] has two

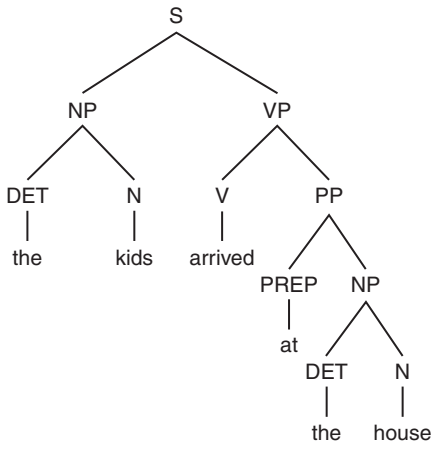


Figure 6.1 Labeled tree diagram for *The kids arrived at the house*

constituents: the definite article *the* and the noun *house*. Another way to represent the constituent structure of this sentence would be to use a branching **labeled tree diagram**, where every node connecting two branches represents a constituent, labeled for its phrase type and the lexical class of each word. Figure 6.1 presents the labeled tree diagram for Example (2g). Abbreviations used in tree diagrams are given in Textbox 6.2.

TEXTBOX 6.2

The following abbreviations are standard in labeled tree diagrams:

S	clause or sentence	DET	determiner
NP	noun phrase	ART	article
VP	verb phrase	QUANT	quantifier
PP	prepositional phrase	DEM	demonstrative
N	noun	PREP	preposition
V	verb	POST	postposition
ADJ	adjective	NUM	numeral
ADV	adverb		

We have arrived at this analysis of the sentence's **constituent structure** largely by using speaker intuition. As scientists, however, it is important to move beyond the level of intuition and to provide argumentation based on the structural facts of the language. We will now provide such evidence for the three major types of **phrasal constituents** that are found in English. These are the noun phrase (NP), the prepositional phrase (PP), and the verb phrase (VP).

6.2.1 The Noun Phrase

A noun phrase is a grammatically coherent syntactic constituent containing a head noun or a pronoun and optionally one or more modifiers. The noun or pronoun is the **head** of the noun phrase, or the element that determines the type of syntactic constituent and

which is required in order for the modifiers, or **dependents**, to appear. Thus, in English one cannot just say **the three big*, leaving out the head noun. Typical dependents found in the noun phrase include demonstratives, numerals, adjectives, articles, quantifiers, possessors, **adpositional phrases** (such as *with a hammer*), and **relative clauses** (such as *who came late*). Textbox 6.3 gives some further examples of noun phrases in English, with dependent elements underlined.

There are a number of ways to determine that noun phrases are grammatically coherent units. In most languages the elements of the noun phrase must form a contiguous group that behaves as a single unit. Here we will consider three distinct arguments that illustrate the coherence of the noun phrase in English and hence its status as a syntactic constituent in English. We will then look at a fourth argument for the coherence of the noun phrase in some other languages.

First, a noun phrase can appear in any noun-phrase slot in a sentence, providing it fits semantically. When noun phrases switch positions, they do so as complete wholes, as illustrated in (3):

(3) **a.** [*My best friend*] *called* [*the doctor*] *for* [*me*].
b. [*The doctor*] *called* [*my best friend*] *for* [*me*].
c. [*I*] *called* [*the doctor*] *for* [*my best friend*].

SIDEBAR 6.4
Argument 1: When noun phrases are moved, they move as cohesive units.

It is not possible to move only part of a noun phrase. We never find, for example, **my the doctor called best friend for me*. The fact that the elements of a noun phrase form a cohesive group which acts as a unit (all elements move together) demonstrates that the noun phrase is a syntactic constituent. This argument is summarized in Sidebar 6.4.

A second argument that a noun and its dependent modifiers form a single syntactic constituent is that if one chooses to use a pronoun, it replaces not just the noun but all of the dependents as well. Consider the sentence in (3a). We can replace the initial noun phrase *my best friend* with the pronoun *she*, i.e., *She called the doctor for me*. However, one can never say **my she* or **my best she*. This shows that pronouns replace entire noun phrases, not just pieces of them. So again we find evidence that the noun phrase works as a cohesive unit. This argument is summarized in Sidebar 6.5.

SIDEBAR 6.5
Argument 2: When a pronoun is used, it replaces an entire noun phrase, not part of it.

TEXTBOX 6.3 **DEPENDENTS OF THE ENGLISH NOUN PHRASE**

Possessors	*my dog; Susan's play*
Articles	*the truth; an insult*
Demonstratives	*those words; that cookie*
Numerals	*fifty representatives*
Quantifiers	*some flowers; many nights*
Adjectives	*blue dress; complex structures*
Prepositional phrases	*the man with one black shoe*
Relative clauses	*The woman who just arrived*

Note: The English noun phrase can only have one of the following elements: article, demonstrative, possessor. Thus the phrases **the your book* and **a that flower* are ungrammatical. The cover term for these three categories is **determiner**.

A third argument for the syntactic unity of the noun phrase is that in most languages of the world, the order of elements in the noun phrase is fixed. For example, in English we say *those three red books on the table*. We cannot shift the order of modifiers to **three those red on the table books*, or **red three on the table books those*, etc. The noun phrase thus has internal structuring, a feature of cohesive units. Textbox 6.4 describes English noun-phrase ordering using a syntactic template.

TEXTBOX 6.4 **SYNTACTIC TEMPLATES**

One way to describe the ordering of elements in a syntactic constituent is to use a **template**, which represents the structure of a phrase schematically. It lists all of the elements that could possibly occur in a constituent in the order in which they occur. Optional elements are placed in parentheses. The template for the English noun phrase is as follows:

(DET) (QUANT) (NUM) (ADJ*) N (PP*) (REL)

The following abbreviations are standard: NP noun phrase, DET determiner, QUANT quantifier, ADJ adjective, N noun, PP prepositional phrase, REL relative clause. An asterisk placed after the category name indicates that you can have more than one of that type of element in a single phrase. For example, we can have more than one adjective, as in *the big black books.*

It is important to note that the ordering discussed thus far is specific to English. Other languages have other set orders of noun-phrase elements. For example, in Mandarin Chinese, noun-phrase elements have the order represented in the template in (4):

(4) Noun-phrase template for Mandarin Chinese

(DEM) (NUM) (CLASSIFIER) (ADJ)* (NOMINALIZER) NOUN

A noun phrase of this structure is illustrated in (5a):

(5) a.	*nà*	*sān*	*dūo*	*měilì-de*	*hūa*
	DIST.DEM	three	CLF	beautiful-NMLZ	flower

'those three beautiful flowers'

Alternate orders are ungrammatical, as illustrated in (5b):

(5) b.	**sān*	*dūo*	*nà*	*hūa*	*měilì-de*
	three	CLF	DIST.DEM	flower	beautiful-NMLZ

SIDEBAR 6.6

Argument 3: The order of elements within noun phrases is fixed, showing that noun phrases have internal structure, which indicates that they are grammatical units.

SIDEBAR 6.7

For a detailed look at noun phrases in another language, see the Goemai Language Profile (LP2).

The fact that the order of noun-phrase elements is fixed reveals that noun phrases have an internal grammatical structure. Such structuring is evidence that noun phrases are cohesive syntactic units. This argument is summarized in Sidebar 6.6.

In some languages, there is other grammatical evidence for the unity of the noun phrase. For example, in many languages elements of the noun phrase "agree" for number, gender, or other categories. In Italian, the indefinite article agrees in gender with the noun it modifies. In other words, the form of the indefinite article depends upon whether the noun is masculine or feminine. The examples in (6) illustrate this agreement.

SIDEBAR 6.8
A list of the grammatical glosses used in each chapter is provided after the chapter summary.

SIDEBAR 6.9
Argument 4: Elements of the noun phrase can agree for gender, indicating that they are grammatically related members of cohesive units.

This pattern of gender agreement applies only to elements within the noun phrase, never to elements outside of it. This behavior shows that the elements in the noun phrase are related grammatically and hence that the noun phrase is a grammatically cohesive unit. This argument is summarized in Sidebar 6.9, and all arguments thus far are reviewed in Textbox 6.5.

Try out the short exercises in Stop and Reflect 6.1 to check your understanding of the noun phrase before moving on to the next section.

(6)	**a.**	*un*	*gatto*	'a male cat'
		INDF.M	male.cat	
	b.	*una*	*gatta*	'a female cat'
		INDF.F	female.cat	

STOP AND REFLECT 6.1 **ENGLISH NOUN PHRASES**

For (a) through (c) below, place brackets around each complete noun phrase and label the category of each word. Answers are available on the website.

Hint: If you are not sure where the boundaries are, try replacing the noun phrase with a pronoun. You can only do this with whole noun phrases, not with parts.

Model: [*My brother*] *ate* [*those fried green tomatoes*].
POSS N DEM ADJ ADJ N

Compare the example with pronouns: [*He*] *ate* [*them*]

a. *Her friends brought six chocolate cakes to the party.*
b. *The whole group admired the presents on the table.*
c. *Her favorite present was from her father.*

TEXTBOX 6.5 **SYNTACTIC ARGUMENTATION**

While it was possible for us to intuitively sense that noun phrases are coherent syntactic units in English, we have also been able to confirm our intuitions with four arguments based on morphosyntactic behavior:

- **Argument 1**: Noun-phrase elements form a cohesive unit that functions as a group.
- **Argument 2**: When a pronoun is used, it replaces all noun-phrase elements.
- **Argument 3**: Noun-phrase elements have a fixed internal order.
- **Argument 4**: Agreement illustrates that noun-phrase elements are grammatically related.

Since linguists take a scientific approach to language, it is important not to rely solely on intuition – which can be uncertain and variable – but to provide concrete evidence for claims about linguistic structure. Intuition can point in the right direction, but only with argumentation based on linguistic evidence can we reach our goal of a scientific analysis of language.

One of the skills students develop when studying syntax is how to use arguments such as these to prove that a particular combination of words constitutes a syntactic constituent. Such arguments (i.e., cohesiveness, replacement by a pronoun, fixed ordering of elements, and agreement) are sometimes called **constituency tests**.

6.2.2 The Adpositional Phrase

An **adpositional phrase** is a syntactic constituent consisting of an adposition (preposition or postposition), which is the head of the constituent, and a dependent noun phrase. There are two types of adpositional phrases. In **prepositional phrases** the preposition *precedes* the noun phrase, while in **postpositional phrases** the postposition *follows* the noun phrase. Languages usually have either prepositional phrases or postpositional phrases, but not both. The noun phrase that occurs in an adpositional phrase is called the **object of the adposition**.

In most languages of the world, adpositions cannot occur without an accompanying noun phrase. Thus, while we can easily say *He came from the house* in English, the sentence **he came from*, which lacks the dependent noun phrase, is ungrammatical. The same is true in Mandarin Chinese. Example (7a) has a prepositional phrase, set off by square brackets:

(7)	**a.**	*Wǒ*	[*gēn*	*tā*]	*chǎojìa*	*le*
		1SG	with	3SG	argue	PFV
		'I argued with him.'				

The sentence is not grammatical if either the noun phrase or the preposition is absent, as shown in (7b) and (7c):

(7)	**b.**	Noun phrase absent			
		**Wǒ*	*gēn*	*chǎojìa*	*le*
		1SG	with	argue	PFV

(7)	**c.**	Preposition absent			
		**Wǒ*	*tā*	*chāojìa*	*le*
		1SG	3SG.M	argue	PFV

The same is true of languages with postpositions. Consider Example (8), which illustrates this phenomenon in Japanese. Here there is an **instrumental** postposition, which translates into English as 'with':

(8)	**a.**	*Taroo*	*wa*	[*pen*	*de*]	*e*	*o*	*kaita*
		Taro	TOP	pen	INST	picture	ACC	draw.PST
		'Taro drew a picture with a pen.'						

Again, we see that both the postposition and the noun phrase are required for a grammatical sentence; it is not possible to omit either one:

(8)	**b.**	Noun-phrase absent				
		**Taroo*	*wa*	*de*	*e*	*o*	*kaita*
		Taro	TOP	INST	picture	ACC	draw.PST

(8)	**c.**	Postposition absent				
		**Taroo*	*wa*	*pen*	*e*	*o*	*kaita*
		Taro	TOP	pen	picture	ACC	draw.PST

SIDEBAR 6.10
Obligatoriness (the requirement that particular elements are present to create a grammatical phrase) is a constituency test that applies to some (but not all) types of constituents.

We have seen that adpositions require the presence of a noun phrase to form a syntactically complete unit. Hence the adposition and the noun phrase together form a syntactic constituent.

A second argument for the adpositional phrase as a syntactic constituent is that the ordering between the noun phrase and the adposition is fixed. Thus, one can say in English *Hit it with a hammer* but not **Hit it a hammer with*. (At this point you might be thinking about some seeming counterexamples to this claim, like the English sentence *Eat it up!* However, *up* in this sentence is actually not a preposition but a verb particle. For more on this, see Textbox 6.6.) Again, this is also true in Mandarin Chinese; *cóng táiběi* means 'from Taipei'; the reverse order which puts the preposition after the noun phrase is ungrammatical: **táiběi cóng*. Since elements of the adpositional phrase occur in a fixed order, we see that it is a syntactic constituent.

TEXTBOX 6.6 ENGLISH PREPOSITION OR VERB PARTICLE?

In English syntax, we have to be careful to differentiate **prepositions**, which head prepositional phrases, from homophonous **particles** that occur in **particle verbs**. Particle verbs are compounds that combine a verb with a particle that historically developed from a preposition, but no longer functions as one. Consider the following English sentences:

a. *Sonia walked out the door.*
b. *Sonia handed out the candy.*

In example (a) there is a prepositional phrase *out the door*, which contains a preposition *out* followed by a noun phrase *the door*. The preposition indicates the direction of the movement from an inside location outward; it can be simply contrasted with *in the door* which indicates movement in the opposite direction. Now consider example (b). Native English speakers will intuitively know that *out the candy* is not a prepositional phrase in the same way that *out the door* is in (a). Rather, *out* is part of the particle-verb compound *handed out*. We can find syntactic proof for this intuition in the fact that the (b) sentence can be restated with the word *out* positioned after the noun phrase, i.e., *Sonia handed the candy out*. The same is not true of example (a). The sentence **Sonia walked the door out* is decidedly odd, and even if one can think of a context where it would make sense (e.g., bringing a door out by walking it), it is not the semantic equivalent of the sentence in (a).

Also, notice that while substituting *in* for *out* in example (a) simply indicates a change in direction, substituting *in* for *out* in sentence (b) results in a sentence with an entirely different meaning. This is because *hand in* and *hand out* are each unique compounds in the language with meanings that are not simply derivative from the sum of their parts. This is further evidence that *hand out* is a compound and not a verb followed by a preposition.

SIDEBAR 6.11
Contiguity of elements – the requirement that they be adjacent with no intervening material – is another useful test for constituency.

Another argument for the adpositional phrase as a syntactic unit is that in most languages the adposition and the noun phrase must be contiguous; one cannot place other elements between them. For example, in English we cannot say **He arrived at suddenly the house*. Even though adverbs like *suddenly* can occur in a number of positions in the sentence, they cannot be placed between the elements of a prepositional phrase. Again this is true for Mandarin: one cannot say **cóng kè táiběi*, inserting *kè* 'suddenly' between the preposition and the noun.

We have presented three arguments for the syntactic unity of the adpositional phrase: obligatoriness, ordering, and contiguity. Thus, we may conclude that the adposition and noun phrase together form a small but tightly constructed syntactic constituent, the adpositional phrase. Textbox 6.7 gives templates for both prepositional and postpositional phrases.

TEXTBOX 6.7 **TEMPLATE FOR THE PREPOSITIONAL PHRASE**

The English prepositional phrase has a simple template:

PREP NP

Here PREP is the abbreviation for "preposition" and NP for "noun phrase." The abbreviation of "prepositional phrase" is PP. Prepositional phrases can have many structures, but that is because noun phrases can have many structures; at the higher level of the constituent represented here, the structure is simple.

The template for a postpositional phrase (also abbreviated PP) is simply:

NP POST

6.2.3 Other Types of Syntactic Constituents

Most languages of the world have noun phrases and adpositional phrases. However, there are also other types of syntactic constituents that are less universal. Each language needs to be examined independently in order to determine which syntactic constituents form the building blocks of the syntax.

While noun phrases and adpositional phrases are probably the most common types of phrases cross-linguistically, there are other types as well. For example, an adverb and an adjective together can form an adjective phrase (e.g., English *very well*), or in Mandarin, a numeral and classifier can form a classifier phrase (e.g., *sān dǔo* 'three (flowers)').

English has clear evidence for a **verb phrase**, a syntactic constituent consisting of a verb as the head of the phrase, and optional dependents including adverbs, prepositional phrases, object noun phrases, and indirect objects in prepositional phrases. Examples of English verb phrases are given in Textbox 6.8; a short exercise to check your understanding appears in Stop and Reflect 6.2.

STOP AND REFLECT 6.2 **LABELED TREE DIAGRAMS**

Draw labeled tree diagrams for each of the sentences in Textbox 6.8, labeling the phrase types and word class for each word. Check your work with the answers posted on the website for your learning and skill development.

Answers to Chapter 6 Stop and Reflect boxes

TEXTBOX 6.8 **ENGLISH VERB PHRASES**

In the following sentences, each verb phrase is put into square brackets and marked as "VP." The major constituents of the verb phrase are labeled with the following abbreviations: NP noun phrase, PP prepositional phrase, ADV adverbial, ADJ adjective.

TEXTBOX 6.8 (*cont.*)

a. *My parents* [*live in Sonoma*] vp
V PP

b. *She* [*drives to the mountains annually*] vp
V PP ADV

c. *My kids* [*always carve pumpkins at Halloween*] vp
ADV V NP PP
OBJECT

d. *My Aunt Helen* [*gave her dog to my mom*] vp
V NP PP
OBJECT INDIRECT OBJECT

e. *Carlos* [*is amazing*] vp
V ADJ

Verb phrases obligatorily contain a **predicate** (in English always a verb), the structural center of the clause. A special type of verb is a **copula**, which denotes a relation between two noun phrases or between a noun phrase and an adjective. The copula in English is *be*. The noun phrase or adjective that follows a copula is called the **copula complement** (sometimes also the **predicate nominal** or **predicate adjective**). In the sentence *Carlos is amazing, amazing* is the copula complement (predicate adjective). In the sentence *Kobin is a top scholar*, the noun phrase *a top scholar* is the copula complement (predicate nominal).

SIDEBAR 6.12
See the Manange Language Profile (LP3) for further discussion of copula clauses, including a practice activity with answers.

We will now explore two arguments for the status of the verb phrase as a syntactic constituent in English. First, the order of elements within a verb phrase is relatively fixed. For example, we cannot place elements other than an auxiliary or adverb before the verb, e.g., **She with the food drive helps* and **Everyone would boxes of chocolates give* are decidedly incorrect. Similarly, placing a prepositional phrase between the verb and a noun phrase results in an ungrammatical sentence: **My kids baked for Halloween cookies*. These types of tests constitute clear evidence that the verb phrase is a unit that has internal structure.

A second argument that the English verb phrase forms a syntactic constituent is that it can be replaced with the **pro-verb** *do*. Note that the entire verb phrase is replaced by *do*, not part of it, as the examples in (9) illustrate. (Although some of the starred sentences in the examples below may be grammatical in other contexts, they are not possible utterances in the exchanges given here.)

(9) **a.** *Who lives in Sonoma*?
My parents do.
**My parents do in Sonoma.*

b. *Does she drive to the mountains*?
She does.
**She does to the mountains.*

c. *My kids baked cookies for Halloween.*
They did?
*****They did cookies?*
d. *Frida gave her dog to Frank.*
She did?
*****Did she her dog?*

By replacing the verb phrases with pro-verbs, as in (9), we can see that the verb phrase in English is treated as a single cohesive unit; thus, it is a syntactic constituent. The template for the English verb phrase is given in Textbox 6.9.

TEXTBOX 6.9 **ENGLISH VERB PHRASE TEMPLATE**

The structure of the English verb phrase can be represented by the following template:
(ADV) V (ADV) (NP) (PP*) (ADV)

Note that adverbs can come in multiple positions.

However, ***not all languages have verb phrases***. The grammatical arguments that illustrate the cohesiveness of the verb phrase in English do not automatically apply to other languages. Every language must be analyzed independently to determine the set of phrasal constituents and their particular grammatical features.

6.2.4 Recursive Structures in Syntax

An interesting syntactic design principle is **recursion**, the ability for a phrasal constituent to embed another phrasal constituent of the same type within it. We can see this by examining the templates of the English noun phrase and the English prepositional phrase:

NP: (DET) (QUANT) (NUM) (ADJ*) N (PP*) (REL)

PP: PREP NP

Notice that the noun phrase can contain a prepositional phrase and that a prepositional phrase obligatorily contains a noun phrase. This allows sentences such as (10), where a prepositional phrase contains a noun phrase that contains a prepositional phrase that contains a noun phrase that contains a prepositional phrase.

(10)

I will meet you at the top of the steps to the library.	
at the top of the steps to the library	PP
the top of the steps to the library	NP
of the steps to the library	PP
the steps to the library	NP
to the library	PP
the library	NP

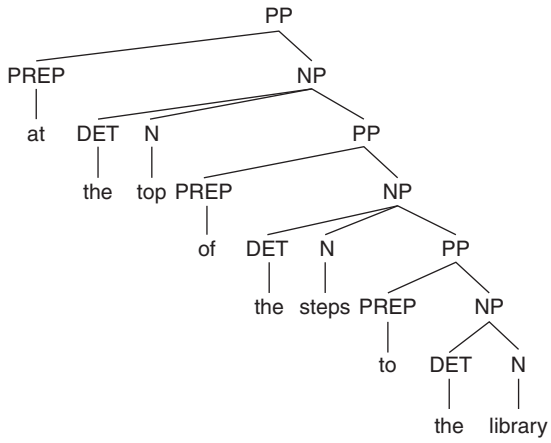


Figure 6.2 Labeled tree diagram for *at the top of the steps to the library*

The structure can be explicitly represented by a labeled tree diagram. The elements of each phrase are represented on a unique level of the tree, as in Figure 6.2.

We can see that each phrase type is recursively embedded into the other. In principle, this recursion could go on infinitely; however, human cognitive constraints on memory – as well as physical constraints on production – make excessively long recursive structures impractical as mediums of communication. Nevertheless, the ability to embed one complex element into another allows for great structural flexibility and expressive power in human language.

6.3 The Clause

We will now move up from the phrase to the next higher level of syntactic organization: the clause. A **clause** can be defined as a syntactic unit typically consisting of a verb (in some languages within a verb phrase), its noun-phrase arguments, and optional adverbial elements (usually adverbs and adpositional phrases). As with other syntactic units, clauses have internal organization. For example, in most languages the elements of the clause occur in a relatively fixed order. Usually clauses occur as contiguous units; they are not divided by other inserted elements that are not part of the clause. Clauses can also have other restrictions; for example, typically only one tense can be specified per clause.

We can see evidence for these facts in English. For example, the typical order for a verb and its noun-phrase arguments in English is Subject-Verb-Object (SVO), as in (11). SVO is

only one of the dominant **constituent orders** in the world's languages. For more on this key typological distinction, see Textbox 6.10.

(11) *The band* (subject) *played* (verb) *my favorite song* (object)

Note that other orderings result in ungrammatical sentences; e.g., **played my favorite song the band* is ungrammatical.

TEXTBOX 6.10 **CONSTITUENT ORDERING IN THE WORLD'S LANGUAGES**

When we think about the relative ordering of subjects, verbs, and objects, we realize that logically there are only six possible orders: SVO, SOV, VSO, VOS, OSV, and OVS. While all six orders have been attested in the world's languages, they occur with very different frequencies: SVO and SOV are by far the most common types. In one study of 1,377 languages (Dryer 2013), 565 had SOV as the dominant order of constituents, while 488 were SVO. Considerably less common were languages with a dominant order of VSO (95 languages). The other three orders were remarkably rare: 25 were VOS, 11 were OVS, and 4 were OSV. Other languages (189) have no dominant order. A seminal article that first identified these and other numerical patterns was Greenberg (1963). Greenberg noted an important commonality between the three most common orders. What is it?

In the Language Profiles, Manange and Manambu are SOV languages, Goemai and Finnish are SVO, while Nuuchanulth and Chontal place the verb first and then have some flexibility in whether the object precedes or follows the subject. Both South Conchucos Quechua and Bardi have no dominant order; for discussion, see especially the Bardi Language Profile, Section LP8.2.7. As noted there, it is not always easy to establish a dominant order, especially in a language where noun-phrase arguments are not regularly expressed.

We can see the contiguity of clausal elements if we put two clauses together with a conjunction, as in (12).

(12) *Chris carried the popcorn and Robin carried the drinks.*

The two clauses must occur in a strict linear order: first one then the other. We can't scramble their elements, as shown by the ungrammatical nature of **Chris the drinks carried the popcorn and Robin carried* or **Chris carried carried the popcorn and Robin the drinks.*

Finally, the fact that clauses in English can have only one tense is illustrated by the inability of the future auxiliary *will* to occur in the same clause as the third-person singular present-tense morpheme *-s*. Thus, while both *Camille will play her violin* and *Camille plays her violin* are acceptable, **Camille will plays* is not. This restriction does not hold over separate clauses. So we can say *Camille plays today at 4 and she will play again tomorrow*. ***There is a grammatical uniformity within each clause (e.g., the entire clause is in future tense), which we can describe using statements of grammatical regularity, or rules***. The elements in a clause are grammatically unified, demonstrating that the clause is an important unit in grammar.

We will now look in more detail at the grammatical relationships between elements of the clause, beginning with verbs and their arguments.

6.3.1 Arguments and Transitivity

The term **argument** refers to a noun phrase, but rather than emphasizing its internal constituent structure, the term ***emphasizes the grammatical status of the argument***

in relation to the verb. There are two types of arguments: **core arguments** and **oblique arguments**. (See Textbox 6.11 on the meaning of the word *argument*.)

TEXTBOX 6.11 **ARGUMENT**

The word *argument* has both technical and non-technical uses in linguistics and you will see both in this chapter. The technical meaning is the one presented here, a noun phrase of a particular grammatical status in relation to a verb. *Argument* is also used in its non-technical sense of advancing evidence in favor of a conclusion. Both terms are used throughout this chapter and throughout the book.

Core arguments are those that have a grammatical relationship with the verb; this can be determined by their grammatical behavior, such as the ability to take certain types of affixes, the ability to trigger affixation on the verb, and their ordering in the clause with respect to other elements.

Oblique arguments do not have a grammatical relationship with the verb. They may instead be grammatically linked to a preposition or a postposition, although they don't need to be. In many languages, oblique arguments have more freedom of positioning than core arguments. Oblique arguments also convey information external to the strict verbal semantics, such as the location of an event, its time, or the instrument used to carry out an action. Try out the exercise given in Stop and Reflect 6.3 to check your understanding of core versus oblique arguments.

Each argument in the English sentences in (13) has been marked for its core or oblique status:

(13) **a.** *She ate her french fries with a fork.*
core core oblique

b. *My mother arrived at the airport this morning.*
core oblique oblique

c. *The ball hit the goal post.*
core core

d. *I gave a dollar to my son for ice cream.*
core core core oblique

STOP AND REFLECT 6.3 **CORE AND OBLIQUE NOUN PHRASES**

The noun phrases in each of the following examples are underlined. Determine whether each noun phrase is core or oblique. Also note the transitivity of the verb. Answers can be found on the website.

Answers to Chapter 6 Stop and Reflect boxes

a. *He left with his friends.*

b. *They will meet us at the restaurant.*

c. *Tomorrow I will drive from San Francisco to Los Angeles.*

d. *She gave the letter to her boyfriend.*

SIDEBAR 6.13
Sometimes a given verb can be used either intransitively (e.g., *she ate*) or transitively (*she ate the mango*). Such verbs are called **ambitransitive**. Further discussion of this can be found in the Manambu Language Profile, Section LP10.2.4.

A brief comparison of the examples in Table 6.1 shows that clauses can differ in the number of core arguments. Some verbs take only one core argument, other verbs take two, and a smaller number of verbs take three. This property of verbs is referred to as **transitivity**. Verbs that can take at most one core argument are referred to as **intransitive**; verbs that can take at most two core arguments are referred to as **transitive**; and verbs that can take at most three core arguments are referred to as **ditransitive**. Verbs of each type are illustrated in Table 6.1, together with the number of core arguments and example sentences with the core arguments underlined.

6.3.2 Grammatical Relations: Subjects

We have seen that verbs have a certain number of core arguments based on their transitivity. Now we will examine how the ***various core arguments have different* grammatical relations *with the verb***. We will begin our discussion using English and the grammatical relation of **subject**. Subjects are one type of core noun phrase. In the sentences in (14) – taken from the Santa Barbara Corpus of Spoken American English – the subjects are in bold, while objects are underlined.

(14)
a. *I need new filters.* (SBC: 001)
b. *Do* ***you*** *remember the date?* (SBC: 008)
c. ***She*** *wants everything on her terms.* (SBC: 006)
d. ***Me and mom*** *always accused her of being lazy.* (SBC: 001)

TABLE 6.1 Examples of intransitive, transitive, and ditransitive verbs and sentences

Transitivity	Number of core arguments	Example verb	Sample sentence with arguments underlined
Intransitive	1	'sneeze'	*I sneezed.*
Intransitive	1	'go'	*Sam went to Russia.*
Intransitive	1	'grow'	*Tomatoes never grow well here.*
Transitive	2	'push'	*Carl pushed the wheelbarrow.*
Transitive	2	'build'	*We built our house last year.*
Transitive	2	'lift'	*They lifted the table onto the truck.*
Ditransitive	3	'give'	*Angelo gave fifty dollars to the foodbank.*
Ditransitive	3	'teach'	*He teaches math to high school students.*
Ditransitive	3	'tell'	*Mike told that story to my children.*

Note that the subjects in these sentences consistently precede the verb. This is the usual position for subjects in English statements (although it is possible to change the order for stylistic effect).

Another grammatical feature of English subjects is that they trigger the use of the suffix *-s* on the verb. This suffix is used when the subject is both third-person and singular, as in (14c). Note that we can't use the *-s* suffix when the subject is: first-person, as in (14a); second-person, as in (b); or third-person plural, as in (d). Notice also that the *-s* suffix is not triggered by *her* in (d), even though it is a third-person-singular core argument. This is because *her* is the **object** of the verb *accused*, not the subject (hence the use of *her*, the object form of the pronoun, as opposed to *she*, the subject form). The verb agrees with third-person-singular subjects – rather than objects – in the present tense, as in (c).

From this brief exercise, we have identified two grammatical properties that are shared by English subjects:

i. English subjects occur before the verb in stylistically neutral statements.
ii. English subjects trigger third-person-singular agreement in the present tense.

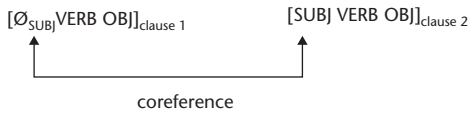
There are a number of other grammatical features of subjects in English. Consider the fabricated sentences in (15), both of which have the subject omitted in the first clause.

(15) **a.** *Removing his sunglasses*, **Adam** *watched Sam.*
b. *Removing his sunglasses*, **Sam** *watched Adam.*

In each case, it is necessarily the one who is watching (the subject of the second clause) who also removes his sunglasses. When the subject of an initial clause is omitted in this fashion, the omitted subject is necessarily **coreferential** with (that is, refers to the same entity as) the subject of the following clause.

We can represent the grammatical relationships between the two subjects as in (16). A null sign is used to indicate that the subject of the initial clause has been omitted.

(16)



We have thus uncovered a third property of grammatical subjects in English:

iii. When combining clauses in a certain way, omitted subjects are necessarily coreferential with the subject of the following clause.

Languages across the world differ in the grammatical properties that define subjects. In Nepali, verb agreement indexes the person, number, and – for second and third persons – the honorific status of the subject. The Nepali paradigm in (17) illustrates these various verb forms in the present tense. Note that we find verb agreement with subjects of both intransitive verbs (e.g., *sutnu* 'sleep') and transitive verbs (e.g., *khānu* 'eat').

(17)

	sutnu 'to sleep'	*khānu* 'to eat'
1SG	sut-chu	khān-chu
1PL	sut-chãũ	khān-chãũ
2SG	sut-chau	khān-chau
2PL	sut-chau	khān-chau
2HON	sut-nu-huncha	khā-nu-huncha
3SG	sut-cha	khān-cha
3PL	sut-chan	khān-chan
3HON	sut-nu-huncha	khā-nu-huncha

In Korean, there is a case-marker *-ka* that is found only on subjects. We find it suffixed to both subjects of intransitive verbs, as in (18a), and subjects of transitive verbs, as in (b).

(18) **a.** *mulkoki-ka* *iss-ta*
fish-NOM exist-DECL
There's a fish.' (lit. 'A fish exists (there)')

b. *nay-ka* *ttwukkeng-ul* *yel-ess-e*
1SG-NOM cover-ACC open-ANT-IE
'I opened the cover.'

SIDEBAR 6.14
The examples in (18) are taken from recordings of parent–child discourse as part of a larger study on Korean language acquisition by Professor Patricia Clancy, at the University of California, Santa Barbara. The utterances were produced by a child named Wenceng, at age 2 years and 1 month.

Case-markers with this distribution are said to mark **nominative** (i.e., subject) case. Korean is unlike English in this regard. Korean differs from both English and Nepali in having case-marking, but not verb agreement. It is similar to Nepali, however, in placing the verb at the end of the clause and allowing flexibility in the word order of the subject and the object.

This brief discussion illustrates that languages differ in the grammatical properties that define the subject grammatical relation. While some languages may have a number of grammatical properties that define this relation, others might have only one, or even none. In the latter case, we would say that those languages lack the subject category.

6.3.3 Grammatical Relations: Objects

Transitive and ditransitive verbs have **objects**. Objects are also a type of core argument, but ***objects have different grammatical properties from subjects***. Consider again our examples of transitive clauses in English; objects are underlined.

(19) **a.** *I need new filters.*
b. *She wants everything.*
c. *Me and mom always accused her.*
d. *Adam removed his sunglasses.*
e. *Sam watched Adam.*

In English, objects directly follow the verb; these are called **direct objects**. We can see that English grammatically distinguishes subjects from direct objects in part by their ordering: in stylistically neutral declarative sentences, subjects precede the verb and objects follow the verb. English is thus described as having SVO (Subject-Verb-Object) constituent order.

English also distinguishes direct objects from **indirect objects**. By definition, ***indirect objects occur only with ditransitive verbs***. In English, indirect objects differ from direct objects in that they can occur in two positions: in prepositional phrases following the prepositions *to* or *for* and in so-called **double-object constructions** where they immediately follow the verb. We can see these two possibilities in the related sentences in (20). *Veronica*, the indirect object, occurs following the preposition *to* in (20a), and in the first position of the double-object construction in (20b).

(20) **a.** *The Dean gave the prize to Veronica.*
b. *The Dean gave Veronica the prize.*

In English, only indirect objects have the ability to occur in this pairing of positions.

STOP AND REFLECT 6.4 **DITRANSITIVE CLAUSE STRUCTURES**

In each of the ditransitive sentences below, identify the direct object and the indirect object. Then restate the sentence using a double-object construction to confirm your analysis. You can check your answers on the website.

Answers to Chapter 6 Stop and Reflect boxes

a. *John handed the baby to his mother.*
b. *He taught French to sixth-graders.*
c. *She brought flowers for her sister.*
d. *He told his version of events to the police officer.*

Do the following sentences have indirect objects? How do you know?

e. *He drove me to Portland.*
f. *He worked my shift for me.*

In many languages, case-marking is used to differentiate direct and indirect objects. ***Case-markers that indicate direct objects are called*** **accusative**, ***while those that indicate indirect objects are called*** **dative**. We can see case-marking differentiating these two classes of objects in the Japanese sentences in (21). Note that direct objects occur with the accusative case-marker regardless of whether they are objects of transitive (21a) or ditransitive (21b) verbs.

(21) **a.** *watashi* *wa* *toofu* *o* *tabeta*
1SG TOP tofu ACC eat.PST
'I ate tofu.'

b. *Erika* *wa* *Mika* *ni* *hon* *o* *kashita.*
Erika TOP Mika DAT book ACC lend.PST
'Erika lent a book to Mika.'

Nez Perce, a Native American language spoken in eastern Oregon and western Idaho, also has an accusative case-marker, as illustrated in (22).

(22) Nez Perce (Phinney 1934: 368)

Kaa	*wéetú*	*núu-ne*	*hi-nées-qicχ-ne*
and	not	we-ACC	3.NOM-PL.OBJ-take.care-PST

'And he didn't take care of us.'

SIDEBAR 6.15
The symbol χ indicates a voiceless uvular fricative.

SIDEBAR 6.16
See the Manambu Language Profile, Textbox LP10.7, for a discussion of objects in Spanish (which is similar to Manambu in this respect).

SIDEBAR 6.17
Discussions of languages with ergative grammatical patterns are found in the following Language Profiles: Manange (LP3), Tsez (LP7), and Bardi (LP8).

Example (22) also illustrates a verbal prefix *nees-*, which is used when the direct object is plural (i.e., it "agrees in number" with the object). Thus in Nez Perce, both case-marking and agreement index the direct object grammatical relation. ***There are many other grammatical properties related to categories of object;*** each language needs to be examined independently to determine which criteria (if any) distinguish between types of objects.

6.3.4 Other Grammatical Relations

While subjects, objects, and indirect objects are familiar from English and most European languages, these are not the only core grammatical relations that are found in the world's languages. For example, it is quite common to have grammatical properties that pertain only to the "subject" of transitive verbs, but not to the "subject" of intransitive verbs. We refer to this grammatical relation as **ergative**.

6.3.5 Grammatical Relations versus Semantic Case Roles

Up to this point, we have been looking solely at grammatical relations between arguments and verbs, that is, the grammatical properties (such as agreement, case, order, etc.) that characterize sets of core arguments. It is important to differentiate these *grammatically defined* relationships from the *semantic* relationships between arguments and verbs. Consider the sentences in (23).

(23) **a.** *Julie swims at the health club.*
b. *Julie feels dizzy after breakfast.*

In (23a), Julie is acting intentionally, of her own volition; we say Julie is an **agent** in this clause. In (23b) Julie is not a volitional actor, but someone experiencing a physical state; we say here that Julie is an **experiencer**. In both cases, the noun phrase *Julie* is the grammatical subject of the clause. It occurs before the verb and triggers the third-person-singular agreement marker *-s*. So while the grammatical relationship between *Julie* and the verb is the same in both examples, the semantic relationship is different. ***Grammatical and semantic relationships are independent of each other.***

Now consider the two oblique arguments in (23a) and (b). You will see that while both *the health club* and *breakfast* are oblique (i.e., neither is a core argument), they also differ semantically; *the health club* indicates the location of an activity, while *after breakfast* is temporal, specifying the time that the situation occurs.

***The semantic relationships between verbs and arguments are referred to as* semantic case roles**. The following list gives the most commonly found semantic case roles in the world's languages. To illustrate the independence of semantic case roles and grammatical relations, the grammatical relation of each underlined NP will be given in parentheses to the right of each example:

Case Role

- **Agent**: The volitional instigator of an activity or event.

Andrea carved the pumpkin.	(subject)
The dog ate the cake.	(subject)
This pumpkin was carved by Andrea.	(oblique)

- **Patient**: An entity that undergoes a change of state as the result of an activity or event.

Andrea carved the pumpkin.	(direct object)
The dog ate the cake.	(direct object)
The pumpkins will be carved by Andrea.	(subject)

- **Theme**: An entity undergoing motion or being located.

Shelly took the dog to the vet.	(direct object)
Brian is at his mom's house.	(subject)

- **Recipient**: An entity that receives a theme.

He speaks Navajo to his children.	(indirect object)
She got a letter from an old friend.	(subject)

- **Beneficiary**: An entity who benefits from an action.

He substituted for John.	(oblique)
He sang songs for the children.	(indirect object)
They helped her when she was ill.	(direct object)
He benefited from their kindness.	(subject)

- **Experiencer**: An entity that experiences a physical or emotional state.

Clifford became delirious.	(subject)
The heat overwhelmed her.	(object)

- **Location**: A static location.

Brian slept at his mom's house.	(oblique)
Each packet contains one ounce of powder.	(subject)

- **Source**: The beginning point of a motion trajectory.

She drove from San Francisco to Los Angeles.	(oblique)
They left Kenya.	(direct object)
Rotterdam will be next year's starting point for the Tour de France.	(subject)

- **Goal**: The endpoint of a motion trajectory.

She drove from San Francisco to Los Angeles.	(oblique)
He hopes to reach Portland tomorrow.	(direct object)
Seattle is their destination.	(subject)

- **Temporal**: A location in time.

She comes home during the holidays.	(oblique)
June is when the strawberries are at their best.	(subject)

- **Instrument**: An entity used to perform an action.

She applied the last coat of paint with a roller.	(oblique)
Dad used a small knife to cut open the fish.	(direct object)
This type of key opens several locks.	(subject)

SIDEBAR 6.18
The list of semantic case roles given here is not exhaustive. Beginning students should become familiar with these terms and be able to identify these relations in sentences.

These examples illustrate the independence of semantic case roles and grammatical relations: each semantic case role is shown in multiple grammatical relations, and each grammatical relation is shown with multiple case roles.

6.4 Constructions

Most of the examples cited so far in this chapter have illustrated affirmative, declarative, **active** clauses, which are both the simplest and most prototypical clause types. However, functions like signaling negation, asking questions, giving commands, and highlighting or downplaying the importance of referents in discourse are also critical to human communication. ***For such tasks, languages have a variety of*** **constructions**, fixed grammatical patterns associated with particular functions. Consider the five sentences in (24). Although they all convey information about Olivia, a dog, and an event of finding, the sentences have different forms and different functions.

(24)	**a.** *Olivia found the dog.*	Declarative, affirmative, active
	b. *Did Olivia find the dog?*	Interrogative, affirmative, active
	c. *Olivia didn't find the dog.*	Declarative, negative, active
	d. *The dog was found.*	Declarative, affirmative, passive
	e. *Wasn't the dog found?*	Interrogative, negative, passive

The sentence in (24b) illustrates a **polar question** (a question that one could answer with a simple "yes" or "no" response). In English, polar questions require an auxiliary verb in

SIDEBAR 6.19
For more on types of questions, see the Nuuchahnulth Language Profile, Textbox LP5.3.

SIDEBAR 6.20
A more detailed discussion of **active voice** and **passive voice** can be found in the Indonesian Language Profile, Textbox LP12.3, and in the Manambu Language Profile, Textbox LP10.6.

the first position of the sentence. This is followed by the subject noun phrase, and then the verb phrase. This is a construction, with the fixed part of it being both the required auxiliary and the strict ordering of the auxiliary, subject, and verb phrase; the function is that of requesting an affirmative or negative response.

English negation, exemplified in (24c), also requires an auxiliary verb, which is followed by the negative morpheme *not* (sometimes contracted into *n't*). In this case, the auxiliary follows the subject, as in the declarative clause. Note that this construction requires the presence of a particular morpheme (the negative) in a particular position.

The passive construction exemplified in (24d) requires a particular auxiliary – a form of the verb *be* – and a particular form of the lexical verb (the past participle). In addition, the semantic patient, which would typically be the direct object in an active construction, is the grammatical subject in the passive. These differences can be schematized as in Figure 6.3.

Active	Subject		Verb	Object
	Agent			Patient
Passive	Subject	*be*	$\text{Verb}_{\text{past participle}}$	(*by* Oblique)
	Patient			Agent

Figure 6.3 Schemas representing active and passive constructions in English

As shown in Figure 6.3, it is possible for a passive clause to specify the semantic agent in a prepositional phrase as the object of the preposition *by*, e.g., *The dog was found by Olivia*. This is optional, a feature denoted by the parentheses in the schema. The function of the passive is to put noun phrases that denote prominent or important referents into the subject position. For example, if people are discussing a particular lost dog and what happened to it, then keeping NPs referring to the dog in subject position allows for structural continuity with the surrounding discourse. Passive constructions can also be used when speakers want to de-emphasize an agent, or when the identity of an agent is unknown or unimportant. Consider, for example, the ubiquitous passives of the structure [Celebrity name] *was spotted* [e.g., at a local club, with their new romantic partner, etc.]. The identity of the person spotting the celebrity is assumed to be unimportant to the reader compared to the celebrity's unexpected appearance in public.

It is important to note that there are cross-linguistic differences in the types of constructions used for a given function. For example, Dolakha Newar signals negation by prefixing a negative morpheme to the verb; auxiliaries are not required, as they are in English:

(25) *chana* *kehẽ* *mo-cõ*
2SG.GEN younger.sister NEG-stay
'your sister isn't staying (at home)'

Polar questions are also constructed differently in Dolakha Newar than in English. The construction adds a particle (glossed here as Q) to the end of the sentence:

(26) *chin* *khā* *la-ina* *ā*
2SG.ERG matter talk-2SG.FUT Q
'Will you talk about this matter?'

SIDEBAR 6.21
Transcription Note

IPA	Dolakha Newar orthography
[ʧ]	ch
[a]	ā
[ə]	a

Without the final question particle, the sentence in (26) would be the affirmative counterpart, i.e., 'you will talk about this matter.'

Interestingly, the range of constructions that are attested in the world's languages for particular linguistic functions (such as asking questions, signaling negation, or giving commands) is usually quite limited. Study of such cross-linguistic variation is the primary focus of **linguistic typology** and can tell us much about how linguistic structures are used to meet speakers' communicative needs.

6.5 The Sentence

A **sentence** is an integrated syntactic unit consisting of at least one clause (and sometimes adverbials that have scope over the sentence as a whole). The notion of integration is important, because there is a difference between having two adjacent sentences that are not integrated, as in (27a), and having two clauses integrated into a single sentence, as in (27b) or (c).

(27) **a.** *The sun came up. It shone in my eyes.*
b. *When the sun came up it shone in my eyes.*
c. *The sun came up and shone in my eyes.*

In example (27a), there is nothing that connects the two sentences; each forms a complete syntactic unit that could stand on its own as an independent utterance. By contrast, in examples (27b) and (27c), the two clauses have been integrated into a single sentence.

In (27b), the first clause has been marked as **subordinate** by the use of an adverbial conjunction, *when*. Note that this clause could not normally stand on its own; it is providing the temporal frame for the following proposition.

In (27c) the two clauses have been coordinated by the conjunction *and*. The integration of the two is evident from the omission of the subject in the second clause. In English, one typically does not omit the subject in a single-clause sentence. Thus **Ø shone in my eyes*, where Ø indicates the position of the omitted subject, is considered ungrammatical.

6.5.1 Complex Sentences

A **complex sentence** is a sentence with more than one clause. Both (27b) and (c) above are complex sentences. Clauses can be combined either by coordinating two independent clauses using a conjunction, thereby creating the larger unit, or by placing one clause inside

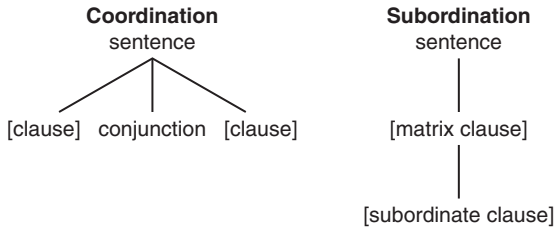


Figure 6.4 Schematic representation of coordination and subordination

of another as a dependent (or subordinate) element. These two structural types can be represented schematically, as in Figure 6.4.

With **coordination**, two (or more) clauses are conjoined at the same level of structure. In contrast, with **subordination**, a main or matrix clause contains a subordinate clause within it as a dependent element. There are three types of subordinate clauses, as there are three ways they can be positioned within a matrix clause. The three types are: adverbial clauses, relative clauses, and complement clauses.

To begin our exploration, let's consider some examples from *Harry Potter and the Goblet of Fire* by J. K. Rowling; subordinate clauses are underlined.

(28)
a. *Hermione joined him a moment later and slipped him a butterbeer under his cloak.*
b. *Harry felt he ought to go, but his curiosity held him in the chair.*
c. *If Voldemort is really getting stronger again, my priority is to ensure your safety.*
d. *He sat with Hermione and Ron in the library as the sun set outside.*
e. *"Dumbledore, you know perfectly well that you did not make a mistake!"*
f. *She knew he'd passed information to the Death Eaters.*
g. *Harry watched the dragon nearest to them teeter dangerously on its back legs.*
h. *Professor Dumbledore was now looking down at Harry, who looked right back at him.*
i. *Those people whose names come out of the Goblet of Fire are bound to compete in the tournament.*

The nine sentences in (28) illustrate four distinct types of clause combining. Examples (a) and (b) illustrate coordination; the clauses are combined using a simple conjunction (*and* in (a) and *but* in (b)). Examples (c) and (d) have adverbial clauses, which are marked by subordinating conjunctions (*if* in (c) and *as* in (d)). Examples (e) through (g) illustrate complement clauses, where a clause functions as a noun-phrase argument of the matrix clause verb. Examples (h) and (i) illustrate relative clauses, where a clause is placed within a noun phrase and is a dependent of a head noun. We will now examine each structure in more detail.

6.5.2 Clause-Combining: Coordination versus Subordination

Coordination combines two clauses in linear sequence using a conjunction: typically *and, or*, or *but*, or their equivalents in other languages. Clauses combined through coordination form sentences that behave as single cohesive syntactic units. There are a number of arguments that support this claim. For example, in English the subject of the second clause in a

coordinate structure can be omitted, as in (28a) above. This clause, with the absence of an overt subject argument, would be ungrammatical if it occurred independently, i.e., **slipped him a butterbeer under his cloak* is not by itself a complete sentence; it is only grammatical when combined with another clause via coordination.

A second argument that coordinated clauses act as a single cohesive unit is the fact that the unit as a whole can be combined with other clauses. We see this in Example (29), where two conjoined clauses (underlined) function as the complement of a matrix verb.

(29) *Harry watched Cedric pull a knife out of his pocket and cut Cho free.*

6.5.3 Subordination: Adverbial Clauses

Adverbial clauses are linked to a matrix clause via a **subordinating conjunction** or affix that specifies the semantic relationship between clauses. These conjunctions convey meanings such as condition (*if*), cause (*because*), consequence (*so*), concession (*although*), temporal sequence (*when, after*), temporal overlap (*while*), or purpose (*to, in order to*).

The subordinate status of adverbial clauses is evident from the fact that they cannot occur independently; for example, *as the sun set outside* cannot stand alone as an independent utterance. A tree diagram with an adverbial clause is given in Figure 6.5.

6.5.4 Subordination: Complement Clauses

Complement clauses function as noun phrase arguments of verbs. Consider again our "Harry Potter" examples (28e) through (g), repeated here for convenience:

e. *"Dumbledore, you know perfectly well that you did not make a mistake!"*
f. *She knew he'd passed information to the Death Eaters.*
g. *Harry watched the dragon nearest to them teeter dangerously on its back legs.*

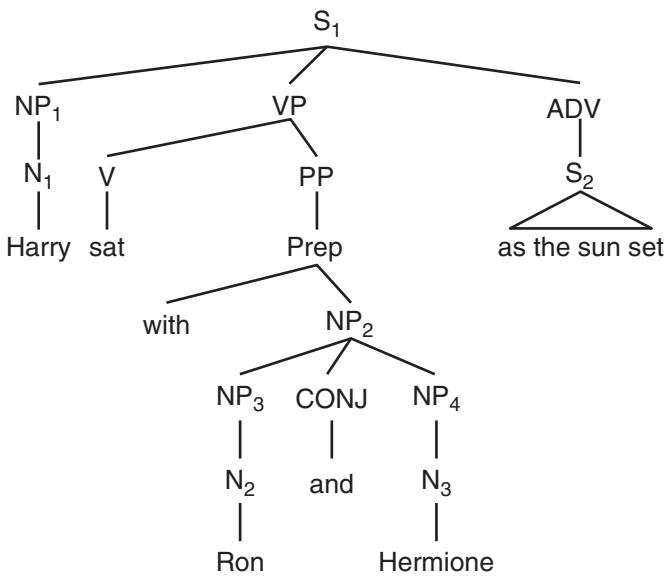


Figure 6.5 Labeled tree diagram for a sentence with an adverbial clause

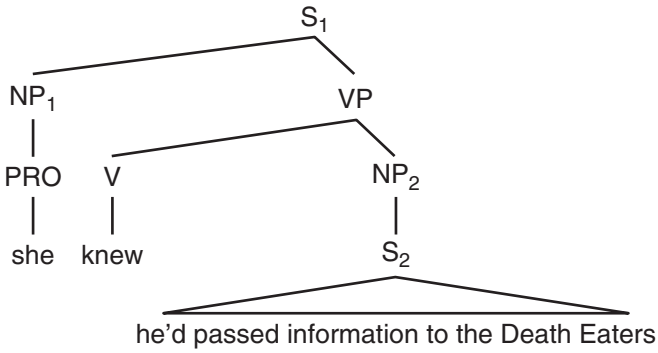


Figure 6.6 Labeled tree diagram for a sentence with a complement clause

In examples (e) and (f) the verb of the matrix clause is *know* and in (g) it is *watch*; all three are transitive verbs. Rather than having simple noun phrases as objects, however, ***these examples have clauses as objects*** (the underlined portion in each example). These are considered complement clauses as they "complement" or "complete" the verb by providing one of its core arguments. These complements provide the object of the verb and are thus **object complements**.

The labeled tree diagram of Example (28f) in Figure 6.6 schematically illustrates the relationship between the complement clause and the matrix verb. The object noun phrase that directly follows the verb is itself a clause (indicated by S in the tree diagram): *he'd passed information to the Death Eaters*.

6.5.5 Subordination: Relative Clauses

Relative clauses are similar to complement clauses in being related to noun phrases. However, while complement clauses constitute an entire noun phrase, ***relative clauses are embedded <u>within</u> noun phrases and function as dependent modifiers of nouns***.

Consider sentences (28h) and (i); the relative clauses are underlined.

h. *Professor Dumbledore was now looking down at Harry, <u>who looked right back at him</u>.*
i. *Those people <u>whose names come out of the Goblet of Fire</u> are bound to compete in the tournament.*

In English, relative clauses directly follow the nouns that they modify. The noun, relative clause, and any other noun-phrase elements together form a single cohesive noun phrase. We can see this by replacing the subject noun phrase of (i) with a pronoun. This produces *<u>They</u> are bound to compete in the tournament*, with the pronoun replacing not just the demonstrative and noun but also the relative clause. Keeping the relative clause in would produce **They whose names come out of the Goblet of Fire*, which is distinctly odd. This shows that the relative clause is part of the same unit as the noun.

The structure of the noun phrase containing the relative clause in (i) is represented in a labeled tree diagram in Figure 6.7.

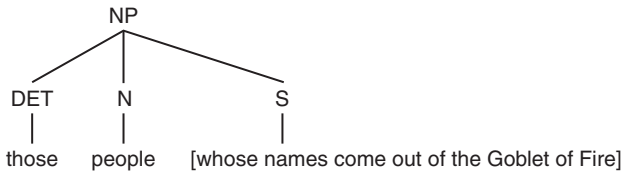


Figure 6.7 Labeled tree diagram for a noun phrase with a relative clause

Figures 6.6 and 6.7 illustrate the structural difference between complement clauses and relative clauses respectively. ***With complement clauses, an embedded clause is an entire noun phrase, while with relative clauses, an embedded clause is within a noun phrase, following the noun that it modifies***. Within the noun phrase, relative clauses are dependent elements and nouns modified by relative clauses are called **head nouns**. In describing the English relative clause, it is important to note that there is an obligatory gap in the relative clause, which corresponds to the head noun. In the following examples, the gap is represented by a null symbol:

The guy who Ø came late	compare	*The guy came late*
The guy I met Ø yesterday	compare	*I met the guy*
The guy I gave my keys to Ø	compare	*I gave my keys to the guy*
The guy I was working for Ø	compare	*I worked for the guy*

We can see this gapping as a grammatical adjustment for the integration of the relative clause into the noun phrase. It helps to clarify the role of the head noun in the relative clause.

STOP AND REFLECT 6.5 **CLAUSE COMBINATIONS**

For each of the following examples, state whether the structure illustrates coordination or subordination. For subordination, underline the dependent clause and determine whether it is an adverbial, complement, or relative clause. Then check your answers on the website.

Answers to Chapter 6 Stop and Reflect boxes

a. *Connie read the book that I recommended.*

b. *Connie read the book because I recommended it.*

c. *Connie liked reading the book.*

d. *Connie read the book and wrote a report on it.*

Hints: If a conjunction separates the clauses, it is coordination. If there is a subordinating conjunction (e.g., *if, when*, etc.), it is an adverbial clause. If it directly follows a noun that it modifies, it is a relative clause. If it directly follows a matrix verb, it is an object complement clause.

This discussion of complex sentences has focused on English. These same basic structures for combining clauses are found in most of the world's languages, along with some other structures that are not found in English. Some of these are discussed in the Language Profiles; see especially Manange (LP3), South Conchucos Quechua (LP6), and Manambu (LP0).

CHAPTER SUMMARY

Words combine syntactically into phrases, which combine into clauses, which in turn combine into sentences. At each level there are a variety of structural types:

- Noun phrases, adpositional phrases, and verb phrases are among the phrase types in the world's languages.
- Clauses contain intransitive, transitive, and ditransitive verbs as their centers. These have grammatical relationships with core arguments, including subjects, direct objects, and indirect objects, as well as other categories. Oblique arguments are not grammatically linked to verbs and generally convey information that supplements the verbal semantics.
- Sentences combine clauses either by coordinating clauses at the same level of structure, or by subordinating a clause, through adverbial, complement, or relative clause structures.

Just as with word-class categories, linguistic diversity is reflected in the variety of syntactic categories that are relevant for any particular language. Each language must be examined independently in order to determine the particular syntactic categories that are relevant for that language. To do so, we need to examine patterns of distribution, compare sentences that are minimally distinct, and provide arguments for the existence of structural categories.

Syntax allows us to go beyond the simple naming of things by words and to communicate the multiplicity of situations, events, activities, actions, and complex concepts in which we are engaged. It allows us to state, negate, question, command, and describe. The networks of markings and grammatical relationships mean that words are not simply thrown out randomly in the hopes that others will guess at how they are related, but that they are closely tied to one another in precise and detailed ways. As such, syntax is a central and critical component of linguistic communication.

TEXTBOX 6.12 GLOSSING CONVENTIONS USED IN THIS CHAPTER

Convention	Meaning	Convention	Meaning
1	first person	DEM	demonstrative
2	second person	DIST	distal
3	third person	ERG	ergative
ACC	accusative	F	feminine
ANT	anterior	FUT	future tense
CLF	classifier	GEN	genitive
DAT	dative	HON	honorific
DECL	declarative	IE	informal ending

TEXTBOX 6.12 (*cont.*)

Convention	Meaning	Convention	Meaning
INDF	indefinite	PFV	perfective
INST	instrument	PL	plural
M	masculine	PST	past tense
NEG	negation	Q	interrogative
NMLZ	nominalizer	SG	singular
NOM	nominative	TOP	topic
OBJ	objective		

SUGGESTIONS FOR FURTHER READING

Comrie, **Bernard**. 1989. *Language universals and linguistic typology*, 2nd edn. Oxford: Basil Blackwell Publishers.

This book is one of the leading introductions to the field of linguistic typology, which encompasses the analysis and classification of the common features and forms of the world's languages. It includes chapters on word order, subjects, relative clauses, case-marking, and causative constructions.

Dixon, **R. M. W.** 2010. *Basic linguistic theory*, Vols. I and II. Oxford University Press.

This book is a sophisticated overview of a theory of grammar that has arisen from extensive typological research.

Dryer, **Matthew S.**, and **Martin Haspelmath** (eds.) 2013. *The World Atlas of Language Structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at: http://wals.info.)

This online resource, filled with interactive maps, allows you to explore the distribution of linguistic features across the globe.

Moravcsik, **Edith**. 2013. *Introducing language typology*. Oxford University Press.

This textbook more specifically introduces students to the field of linguistic typology. It is designed for students who have completed an introductory course in linguistics. Students who have completed this syntax chapter are ready for Chapter 3 "Assembling Words: Syntactic Typology" in this textbook.

Payne, **Thomas**. 2006. *Exploring language structure: A student's guide*. Cambridge University Press.

This book provides a detailed introduction to morphology and syntax from a typological perspective.

Velupillai, **Viveka**. 2012. *An introduction to linguistic typology*. Amsterdam and Philadelphia: John Benjamins.

Chapters 9–12 of this typology textbook discuss simple clauses, word order, complex sentences, and speech acts, respectively.

EXERCISES

1. Each of the following English sentences is followed by the label of a particular constituent. Identify that constituent in the sentence, then: (i) write out the entire constituent, (ii) state one structural characteristic that proves it is a constituent of that type, and based on the reading, (iii) provide an argument for constituency (i.e., name a constituency test) that further justifies your analysis.

Example:

Marcus is watching football with his dad. — Prepositional phrase

i. *with his dad*
ii. It contains a preposition *with* immediately followed by an NP *his dad*.
iii. Both the preposition and the noun phrase are required. The sentences **Marcus is watching football his dad* and **Marcus is watching football with* are ungrammatical. This criterion of obligatoriness shows that the preposition and the noun phrase are both required to occur, and that the prepositional phrase as a whole is a cohesive syntactic unit.

a. *The coat on the back of the chair is still damp.* — Noun phrase
b. *Ken put the ice-cream maker in the car.* — Verb phrase
c. *I am going for a walk.* — Prepositional phrase
d. *The family that moved in across the street keeps their car in the driveway.* — Subject NP
e. *Olivia studied her world-history notes before the exam.* — Object NP
f. *My dog never brings the stick to me.* — Indirect object NP

2. In each of the following examples, a set of words is underlined. Determine whether the underlined words constitute a *complete* noun phrase in the sentence given; Provide at least one argument that justifies your analysis.

Example:

John remembered to bring <u>his mail to the office</u>.

(i) No, the underlined portion is not a noun phrase.
(ii) Argument 1: you cannot use a pronoun to substitute for all of the underlined words, since *John brought <u>it</u>* does not include *to the office*.

a. *Brenda left her <u>keys on the table</u> in the front room.*
b. *My son is eating <u>a sandwich</u> in the courtyard.*
c. *He hopes to buy her a <u>new car</u> this weekend.*
d. *A group of <u>prospective students</u> came to campus.*
e. *<u>His old headphones</u> finally broke.*
f. *She took <u>the book</u> with the red cover.*
g. *She fixed <u>the book</u> with tape.*

Guide to Square Brackets and Tree Diagrams

3. Draw labeled tree diagrams for each of the following sentences. If you are unsure about the constituent structure of an example, use the criteria and arguments discussed in the chapter to test whether the elements are part of the same constituent. Be sure to do the following:

- Label the word class for every word in the sentence.
- Group together constituents under a single node (e.g., VP, NP, PP).
- Make sure that all constituents are recognized.
- Give the English words at the bottom of the tree.

a. *The team played four games at the youth center.*
b. *His new roommate bought a cake with frosting.*
c. *My daughter eats sushi with chopsticks.*
d. *I brought some coffee to the man at the table in the corner.*
e. *Those big dogs down the street always bark at the guy that delivers the mail.*

4. The following sentence is syntactically ambiguous: there are two possible interpretations, each reflecting a different syntactic structure, although the string of words remains the same. Explain the two meanings and how they differ, and then draw labeled tree diagrams representing the two different possible structures.

I watched the birds in the garden.

5. Clausal syntax
i. For each underlined noun phrase in the data below, determine the following:
- Whether it is core or oblique
- Its semantic case role
- For core arguments, its grammatical relation

ii. For each of the **bolded verbs**, state whether it is intransitive, transitive, or ditransitive.

a. *Robin* ***runs*** *daily at sunrise.*
b. *Paul* ***is writing*** *something on his computer.*
c. *My dog* ***gets excited*** *when she* ***chases*** *her ball in the park.*
d. *I* ***will give*** *candy to kids on Halloween.*
e. *She* ***was taught*** *English by her uncle.*

6. For each of the following sentences, one clause is underlined. State whether it is coordinate or subordinate. If subordinate, state whether it is an adverbial, complement, or relative clause. Provide an argument that justifies your answer (in other words, how do you know you are right?).

a. *She forgot that he hadn't bought milk.*
b. *She noticed the empty milk carton that was in the recycling bin.*
c. *He was annoyed when she arrived without the milk.*
d. *He stayed home while she went back out to the store.*
e. *She bought milk and stopped at the bakery for a chocolate cake.*
f. *Because she came in with the cake, he decided he was no longer annoyed.*

7. Maninka is a Niger-Congo language spoken in West Africa. Tones are not represented in the following data set. (Data are taken from Bird and Shopen 1979.)

Procedures for grammatical analysis of unfamiliar languages

a.	*baba be na*	'Baba is coming.'
b.	*baba be ta*	'Baba is going.'
c.	*a be sigi*	'S/he is sitting.'
d.	*fanta be sunogo*	'Fanta is sleeping.'
e.	*baba be daga sigi*	'Baba is setting down the pot.'
f.	*a be ji sigi*	'S/he is setting down the water.'
g.	*fanta be kini sigi*	'Fanta is setting down the rice.'
h.	*i be daba sigi*	'I am setting down the hoe.'
i.	*an be kini tobi*	'We are cooking the rice.'
j.	*fanta be an fo*	'Fanta is greeting us.'

SIDEBAR 6.22
Hint: Compare example sentences that differ minimally (as with morphological analysis).

i. Give the meaning in English of each of the following words. If there appears to be more than one English translation, list both. Can you think of a way to represent a single meaning for these morphemes?

na	*ta*
sigi	*sunogo*
daga	*ji*
kini	*daba*
tobi	*fo*
an	

ii. What meaning might the word *be* signal?
iii. What is the order of the noun phrases and the word *be* with respect to the verb in Maninka (in terms of S (roughly subject), O (roughly object), and V (verb))?

8. The sentences below are from Indonesian (data provided by Bradley McDonnell). Analyze each sentence, providing the following three elements in your analysis:

i. An interlinearized gloss for every example, e.g.:

Anak	*senang*	*memakan*	*ikan.*
child	like	eat	fish

'The child likes to eat fish.'

ii. Brackets around all of the noun phrases in every example, e.g.:

[*Anak*]	*senang*	*memakan*	[*ikan*].
child	like	eat	fish

'The child likes to eat fish.'

iii. A syntactic template for the Indonesian Noun Phrase based on what you've observed in this data set (see Textbox 6.4 for an example of a syntactic template).
iv. Then, given what you know about the English Noun Phrase, briefly discuss in two–three sentences the similarities and differences between the Indonesian NP and the English NP.

a. *Anjing itu melihat kucing.* 'That dog saw (a) cat.'
b. *Saya melihat tiga anjing besar itu.* 'I saw those three big dogs.'
c. *Mereka melihat dua anjing besar itu.* 'They saw those two big dogs.'
d. *Anjing itu melihat tiga kucing kecil itu.* 'That dog saw those three small cats.'
e. *Saya melihat tiga kucing besar itu.* 'I saw those three big cats.'
f. *Dia melihat dua anjing besar itu.* 'He saw those two big dogs.'
g. *Kucing itu melihat anjing.* 'That cat saw (a) dog.'
h. *Saya melihat dua anjing besar itu.* 'I saw those two big dogs.'

9. Examples (a) through (g) below are from Korean (data provided by Heather Simpson). Analyze each of the following sentences from Korean, providing:

i. An interlinearized gloss with free translation for every example;
ii. brackets around all of the noun phrases for every example; and
iii. a syntactic template for the Korean Noun Phrase (see Textbox 6.4).

Grammatical note 1: *maɾi* is a **classifier**, a word class that English does not have, but which is close to something like *batch* in *five batches of cookies*. In the examples here it is part of the noun phrase. You should use the abbreviation CLS for this word class and for the word *maɾi* in the interlinearized gloss. Grammatical note 2: When words in the English free translation are given in parentheses, it means that it is necessary to use the word in the English sentence to convey the intended meaning, but it is not grammatically necessary (or sometimes even grammatically possible) in the language of study. Korean is like many languages in not requiring that subject arguments be expressed by noun phrases. *Transcription note:* IPA [ɯ] represents a high back unrounded vowel.

a. *kɯ namtʃa tʃatʃɯŋnajo.* 'That guy is annoying.'
b. *kojaŋi isʌjo.* '(I) have (a) cat.'
c. *tʃatʃɯŋnanɯn namtʃa manajo.* '(I) am meeting (an) annoying guy.'
d. *kɯ tʃatɕɯŋnanɯn namtʃa manajo.* '(I) am meeting that annoying guy.'
e. *kojaŋi tasʌt maɾi isʌjo.* '(I) have five cats.'
f. *kɯ kojaŋi manajo.* '(I) am meeting that cat.'
g. *namtʃa manajo.* '(I) am meeting (a) guy.'

10. Hixkaryana is a member of the Carib language family and is spoken in northern Brazil. Examine the data that follow, then answer the questions below. (Data from Derbyshire 1985.)

a.	*toto yahosɨye kamara*	'The jaguar grabbed the man'
b.	*toto yahosɨye*	'It grabbed the man'
c.	*nahosɨye kamara*	'The jaguar grabbed him'
d.	*nahosɨye toto*	'The man grabbed it'
e.	*bɨryekomokomo yonyetxkont kamara*	'The jaguar used to eat children'
f.	*bɨryekomokomo thanaɨhixoko*	'Teach the children'

i. List the Hixkaryana forms for each of the following words. If a word has more than one form, write them all:

'jaguar'
'man'
'grabbed'
'children'
'teach'
'used to eat'

ii. What is the order of the core arguments with regard to the verb in the unmarked Hixkaryana clause? Characterize in terms of S (subject), O (object), and V (verb).

11. Nepali is an Indo-Aryan language and the national language of Nepal. The goal of this problem is to determine the basic principles underlying the grammatical marking of Nepali noun phrases. The answer you turn in should be a coherent analysis of Nepali syntax, based upon the data below. Questions (i) through (vii) are designed to help you work through the data and produce an analysis. Question (viii) tells you what to include in your prose write-up to complete the problem.

Consider the following sentences (in Nepali orthography, *ā* indicates a low central vowel and *a* indicates IPA [ə]):

a.	*mero āmale mānchelāi pasalmā heryo.*	'My mother saw the man at the store.'
b.	*mero āmāle mānchelāi heryo.*	'My mother saw the man.'
c.	*usko āmāle mānchelāi pasalmā heryo.*	'His mother saw the man at the store.'
d.	*mero āmāle mero dāilāi pasalmā heryo.*	'My mother saw my brother at the store.'
e.	*mero āmāle mero dāilāi pasalmā bheṭyo.*	'My mother met my brother at the store.'
f.	*mero dāile mero āmālāi pasalmā bheṭyo.*	'My brother met my mother at the store.'
g.	*mero āmā nepālmā āyo.*	'My mother came to Nepal.'
h.	*ma nepālmā āẽ.*	'I came to Nepal.'
i.	*usko dāi pasalmā āyo.*	'His brother came to the store.'
j.	*usko pasal rāmro cha.*	'His store is good.'
k.	*mero āmā rāmro cha.*	'My mother is good/beautiful.'
l.	*mero āmā calākh cha.*	'My mother is clever.'
m.	*mero calākh āmā pasalmā āyo.*	'My clever mother came to the store.'

i. Identify the Nepali word for each English meaning by comparing example sentences that differ minimally (as with morphological analysis). If there is more than one form, write them all:

'my'	'mother'
'his'	'man'
'store'	'saw'
'met'	'good/beautiful'
'brother'	'came'
'clever'	

ii. Constituent analysis. Identify the word class of each word. Break each sentence into phrasal constituents. You may want to separate these using square brackets.

iii. Determine whether the verbs for 'saw,' 'met,' and 'come' are transitive or intransitive. You can do this by counting the number of core arguments in each clause (assume *pasalmā* is oblique).

iv. The verb *cha* is a copula, like English *be*. What type of copula complement is found in Examples j through l (adjectival or nominal)?

SIDEBAR 6.23
Copulas are a special type of verb that relate a subject to an adjective or noun phrase. These are referred to as **copula complements**.

v. Morphological analysis. Compare words with more than one form. Determine the position of morpheme boundaries. List all affixes.
vi. Determine the *grammatical function* of each affix. Under what morphosyntactic conditions does each affix appear? Give a brief statement of the meaning or grammatical function of each affix. Hint: Consider the transitivity of the verbs and the grammatical relations of the arguments.
vii. Based on these data, what is the basic constituent order of the Nepali transitive clause? Use the terms S (subject), O (object), and V (verb) to characterize the order. (E.g., the English sentence *The dog bit the cat* is an SVO sentence: the subject precedes the verb, which precedes the object.)
viii. Now type up the problem, using academic English prose. Be sure that your write-up:

- states the overall goals of the problem;
- lists each word, with meanings, broken into morphemes where necessary;
- clearly states the grammatical function of grammatical affixes and *provides evidence* for this by citing the relevant examples;
- clearly states the constituent order of Nepali;
- provides a complete syntactic analysis of examples (a), (h), (k), and (m), noting the following:
  - the noun or adpositional phrase boundaries, marked with square brackets and labeled
  - the transitivity of the verb
  - the class of each word
  - the core and oblique arguments of each example.

Here are some examples of a complete syntactic analysis of some English sentences; your analysis of Nepali should take this form, but using Nepali words instead of English.

$[\text{My son}]_{NP}$	eats	[many	cookies$]_{NP}$	[in	the	afternoon$]_{pp}$
poss N	$V_{trans.}$	quantifier	N	PREP	ART	N
core		core		oblique		

$[\text{Allison}]_{NP}$	is	brilliant
NP	V_{cop}	ADJ
core		

7 Semantics

How Language Makes Sense

KEY TERMS

- Meaning
- Sense and reference
- Signs: icon, index, symbol
- Connotations and construal
- Propositions: entailments, contradictions, presuppositions
- Semantic anomaly
- Prototype and category structure
- Semantic relations: synonymy, hyponymy, antonymy
- Frames and profiling
- Polysemy
- Metaphor and metonymy

CHAPTER PREVIEW

Semantics is the study of meaning in language, in particular of those meanings that are conventionally encoded by linguistic expressions. While phonology, morphology, and syntax focus on the formal structure of linguistic expressions, semantics considers their content: the ways they make sense. Utterance interpretation is often an open-ended and idiosyncratic process; a good semantic analysis can offer precise insights as to where the process begins and how to proceed. This chapter introduces students to some basic ways of thinking about the meanings of words and phrases both in terms of their objective (truth conditional) content and in terms of their subjective effects on the imagination of a language user. Important topics include sense and reference, propositional content, entailments and presuppositions, prototypes and category structure, lexical semantic relations, construal, and polysemy.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **distinguish the encoded (semantic) meanings of expressions from their inferred (pragmatic) meanings;**
- **identify entailments and presuppositions associated with lexemes;**

- **identify semantic relations between different lexemes: synonymy, hyponymy, and antonymy;**
- **distinguish vagueness and polysemy, and identify metaphoric and metonymic relations between the senses of a lexeme;**
- **distinguish the profile of a linguistic sense from the larger conceptual frame within which it is construed.**

7.1 The Meaning of "Meaning"

All human languages allow speakers to talk about the world as it is and as it might be, and to say things which are either true or false, depending on the situation, and with which other speakers can agree or disagree. Languages are useful in these ways because they are meaningful; in other words, they are useful because linguistic expressions have stable meanings that combine in regular ways to express an unbounded number of imaginable thoughts (see Textbox 7.1).

SIDEBAR 7.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quizzes, and a quiz on lexical semantic relations.

Meaning is in many ways the most obvious part of language. Ordinarily, language users are entirely unaware of the intricate rules of phonology, morphology, and syntax that shape their use of language. There is simply too much going on, and at too many levels of organization, for even the most meticulous reader or writer to pay attention to it all at once. In any case, people usually care much more about what is expressed in language than they do about the formal structure of a text or discourse. A text itself is but a means to an end, a vehicle people use to send and receive meaningful messages.

But meaning also seems mysterious and insubstantial, difficult to pin down or define. In fact, the English noun *meaning* and the verb *mean* from which it derives have several distinct meanings themselves. In some cases, the verb *mean* doesn't pertain to word, phrase, or sentence meanings at all. In (1), for example, the verb *mean* indicates a relation between a fact and the conclusions one might draw from that fact; and in (2) the verb denotes the relation between an actor and an intended action.

TEXTBOX 7.1 LINGUISTIC EXPRESSIONS AND SEMANTIC CONTENT

Whatever else meaning might be, it is something that attaches to linguistic expressions – both to individual words and to morphemes, like *cat* and plural *-s*, and to complex phrases like *cool as a cucumber* and *how do you do*. The word **expression** is used broadly for any linguistic form at any level of complexity that has some kind of meaning. An expression is any bit of language, however small or abstract, that can be used to express something. In this chapter, we will call the thing that gets expressed by an expression its **semantic content**, or simply, its **sense**. Like the morphosyntactic forms to which they attach, senses can be very small and abstract (as in inflectional and derivational morphemes, like the English plural *-s* or agentive *-er* suffixes), or very complex and vivid (e.g., in content words like *cat, carouse, cajole*, and *caboose*, and in multi-word expressions like *shoot the breeze, hit the hay, go for a ride*, or *take the wheel*).

(1) *The fact that it's raining means you'll get wet if you go outside.*

(2) *Something is going on around here and I mean to find out what.*

This chapter is concerned specifically with the kinds of meanings that get associated with linguistic expressions. In (3), for example, the verb *mean* refers to the relation between a linguistic form and the information it normally conveys:

(3) *The French expression* laissez les bon temps rouler *means 'have a ball!'*

The meanings in (1) to (3) are senses: stable properties of words and phrases, the ideas they conventionally express. Contrast this with the example in (4):

(4) *She didn't really mean what she said.*

We all regularly experience cases where a person says one thing and means another. This sort of meaning, **utterance meaning**, is not just a matter of linguistic conventions, but crucially depends on the communicative intentions of a speaker (or writer) and how they are interpreted by a hearer (or reader). This is a matter of **pragmatics**, how the context of an utterance impacts its use and interpretation, which is the subject of the next chapter. **Semantics**, on the other hand, considers meanings to be stable properties of linguistic expressions: **lexical semantics** studies the senses of individual lexemes and morphemes; **compositional semantics** considers how the sense of a complex expression is related to the senses of its individual parts. ***Semantics studies the meanings directly encoded by linguistic forms, while pragmatics studies the ways people draw on context to accomplish and interpret communicative goals.***

When language gets used, even the most mundane utterances tend to express more than just what is literally said: for example, if one morning I say to a friend "I slept badly, and I didn't have any breakfast," she will likely infer that I slept badly *last night*, and I have not had breakfast *today*. The extra meaning seems obvious and is clearly part of what I would communicate with such an utterance. But it is not part of that sentence's **coded content**; it is inferred from the context. Similarly, if my friend responds by saying, "Do you want to go get something to eat?" I would likely take it as a suggestion that we go eat something, though the sentence is literally just a question about what I want.

Normally, of course, the pragmatic meaning of an utterance is closely related to its semantic content: speakers usually try to say more or less what they mean, to line up the conventional content of their utterances with the thoughts they want to communicate. Ultimately, that is what semantic conventions are for. There are other ways one can get an idea across, but semantic conventions make it much easier: they allow people to share information in ways that others will be sure to understand. A **convention**, in general, is just a customary way of doing something in a community, an arbitrary behavior that people adhere to because they expect others to do the same. Semantic conventions, then, are customary ways of interpreting linguistic forms that speakers rely on because they expect others in their community to rely on them as well.

Because the semantic content of an expression is conventional, it is always at least partly arbitrary. In principle, any sense that is conventionally expressed one way could just as easily be expressed some other way. If it's a convention, then it could have been different. This, of course, is why languages can differ as much as they do: what in English is called a *tree* is in

French called *arbre*, in German *Baum*, and in Swahili *mti*. But the arbitrariness of language is also the reason that words can express concepts at all, rather than just referring to individual items and situations. The word *tree* does not on its own refer to any particular tree or group of trees; rather, it expresses a general idea and so can be used to trigger thoughts about any sort of tree or trees one could ever imagine. Because the link between form and sense is arbitrary, it is trivial for any kind of idea – no matter how abstract or fantastic – to be encoded as a sense; the only real constraints are that an encoded concept must be somehow within the realm of human imagination and something that a speaker might want to express. In fact, the arbitrary nature of the linguistic sign is precisely what makes it so boundlessly powerful.

STOP AND REFLECT 7.1 **LITERAL VERSUS INTENDED MEANING**

The following short exchange was recorded as part of the Santa Barbara Corpus of Spoken American English (SBC: 034). It took place at 10:30, as a wife came home from work:

Husband*: How was work?*
Wife*: I'm so tired.*

What is the literal meaning of the wife's response? What is the intended meaning? How do you think the husband might have interpreted this response?

7.2 Kinds of Signs: Icon, Index, Symbol

Linguistic **signs** typically consist of two parts: a meaningful form, the **signifier**, and its associated interpretation, the **signified**; the sign is the relation between these. The philosopher Charles Sanders Peirce famously distinguished three basic kinds of signs, based on the different ways a signifier can relate to its signified: in an **icon** the signifier somehow resembles its signified; in an **index** the two are somehow physically or causally connected, so that the presence of the signifier effectively points to, or "indicates," its referent; and in a **symbol** the relation is a matter of convention and thus depends on the interpretive habits of those who use the symbol. Diagrams, cartoons, scale models, and acts of impersonation are all icons, because their interpretations depend on some perceived similarity between a signifier and a signified. Footprints and medical symptoms are indices, because they are indications of the things that cause them. Similarly, smoke is an index of fire, puddles an index of rain, and skid marks on a highway are an index of a car's abrupt stop. Such icons and indexes are not conventional.

SIDEBAR 7.2
The concept of "indexicality" is central to much of the discussion in Chapter 11, which considers the ways in which speakers use language to "index" (point to) their identities.

All words and morphemes are symbols. There are also non-linguistic symbols, such as coins, stamps, letters, numerals, and national flags. Certain images can also be symbols: the bald eagle is a symbol of the United States; doves are a symbol of peace; and roses are a symbol of love and beauty. Some of these associations are so well established that they feel almost natural, but they are all in fact cultural conventions: roses may be inherently beautiful, but they are a symbol of beauty only to the extent that certain communities habitually interpret them that way.

These three kinds of signs are not, in fact, mutually exclusive; the link between signifier and signified is often motivated in multiple ways. A footprint, for example, both resembles and is causally connected to the foot that made it, and is therefore both an icon and an index. Similarly, a stick figure is a kind of icon, since it resembles the thing it represents, but it is also a conventional way of representing a person and as such is also a symbol.

STOP AND REFLECT 7.2 **EMOTICONS AND EMOJI: ICONS, INDEXES, OR SYMBOLS?**

Emoticons were originally representations of facial expressions produced typographically, such as :-) and :-(. Later, technologies began to replace them with images such as ☺ and ☹, and now the set has significantly expanded to include images such as 😂 and 😎. To what extent are these six images iconic, indexical, or symbolic? To what extent are they conventional?

All linguistic signs are governed by convention and hence are symbols, but many words and expressions have an iconic or indexical aspect as well. Probably all languages have onomatopoetic words for different sorts of sounds, like the English verbs *buzz, crackle, crunch*, and *tinkle*, or their French counterparts *vrombir, crepiter, croquer*, and *tintinnabuler*. Words depicting exclamations, like *ow, ooh, ah*, and *aargh*, and animal sounds, like *woof, meow, moo*, and *roar*, are also perhaps universally imitative, and therefore iconic. But the particular forms such words take is also a matter of convention and so varies from language to language (see Textbox 7.2).

Finally, all languages include an important class of expressions that combine the features of a symbol and an index – forms which conventionally point to a contextually salient referent. Just as the interpretation of a pointing finger depends on where it is pointing, the interpretation of words like *this, here, now, I*, and *you* depends on the context in which they are used: the pronoun *I* refers to the speaker or writer; *you* refers to the addressee; and *here* and *now* denote the place and time of the utterances in which they occur. Words like these are **deictic expressions**, from the Greek word **deixis**, for 'pointing.' Deictic expressions are symbols, since the association of a linguistic form with a deictic meaning is a convention (different languages have different words for *I*, and even different inventories of deictic expressions); but deictics are also indexical, because their precise significance on any given occasion depends on the context in which they occur.

TEXTBOX 7.2 **ANIMAL SOUNDS IN FIVE LANGUAGES**

(From Wikipedia "Cross-linguistic onomatopoeia")

	English	French	Spanish	Indonesian	Korean
Dog	*bow-wow*	*wouf wouf*	*guau guau*	*guk guk*	*meong meong*
Pig	*oink oink*	*groin groin*	*oinc oinc*	*grok grok*	*ggul ggul*
Rooster	*cock-a-doodle doo*	*cocorico*	*kikiriki*	*kukuruyuk*	*gugugugu*

STOP AND REFLECT 7.3 **SOUND SYMBOLISM**

Although linguistic signs are always arbitrary, the link between form and meaning can be at least partially motivated, and some sounds seem to be especially well suited for some meanings. In a famous experiment, the gestalt psychologist Wolfgang Köhler showed subjects two different figures, one like (a), with sharp, jagged edges, and the other like (b), with smooth, sinuous curves. He then asked which of two names *takete* or *baluba* (or in a later version *maluma*) best fit each shape.

(A) (B)

The responses he got turned out to be remarkably consistent.

i. Conduct a survey of some friends. Do people tend to agree in their choices?

ii. What acoustic or articulatory properties in these words do you think might contribute to this effect? Note that the two words have exactly the same length, syllable structure, and frequency of use (i.e., zero) in ordinary discourse.

7.3 Sense and Reference

Thus far we have said a lot about the ways meanings can be linked to linguistic forms, but little about just what meanings are. What exactly is it that gets expressed by language? Not surprisingly, there is no simple answer to this question, but there are at least two obvious ways one might think about it. On the one hand, language allows us to talk about things in the world, and so we might think of meaning directly in terms of **reference**, as the stuff "out there" in the world that we use language to talk about. On the other hand, and just as importantly, language allows us to express our inner thoughts and to influence those of others, so we might think of meaning precisely as the stuff of thought, as the conceptual contents "in our heads" that trigger and respond to the use of language. Ultimately a good theory of semantics has to explain both sorts of phenomena.

The idea that meaning is just a matter of reference seems intuitive. The meaning of an expression would just be its referents, the set of things it refers to in the world. So the meaning of *dog* would be the set of all dogs, the meaning of *wet* would be the set of all wet things, and the meaning of a sentence like *The dog is wet* would be a situation in which a particular individual is both wet and a dog. Part of the appeal of an approach like this is that it offers a way of understanding how the meanings of complex expressions like *The dog is wet* are built up from the meanings of their parts. Textbox 7.3 further discusses the idea of composite meanings.

If we only focus on the way words refer to entities in the world, we will miss some important aspects of linguistic meaning. The following are three reasons why there must be more to a word's meaning than just what it refers to.

TEXTBOX 7.3 **THE PRINCIPLE OF COMPOSITIONALITY**

All human language, it seems, obeys a **principle of compositionality**: in general the meanings of complex expressions depend on the meanings of their parts, and individual expressions have stable meanings that combine in regular ways.

If human languages were not at least partly compositional, they would be unlearnable. If word meanings changed randomly from context to context, speakers would not be able to predict the meanings of sentences they had never heard before, like *A penguin explained the commotion*.

But spoken languages need not be, and typically are not, perfectly compositional. Two features of language particularly tend to complicate the picture. First, in most languages, frequent words are often polysemous, i.e., have multiple senses, so the contribution they make will vary from one expression to another. The English verb *run* is polysemous because it can refer to rapid two-legged motion, to the action of a machine, or the action of campaigning for elected office. Moreover, most languages also include a wide variety of **idioms**, that is, complex expressions the senses of which are not a regular function of their parts. Familiar English idioms include *sit tight, kill time*, and *be up in the air (about something)*.

- **Reason (1)** Different expressions can refer to the same things but still differ in other aspects of meaning. For example, the technical term *canine* and the diminutive *doggie* both refer to the same set of things as does the word *dog*, but they do so in very different ways. Words that refer to exactly the same sets of things, but which still differ in meaning, are said to have a common denotation, but different connotations (see Textbox 7.4).
- **Reason (2)** Many expressions – like *unicorn* and *centaur* and *the king of Mars* – lack any referents in this world. Some denote things that could exist in another possible world. Others, like *hornless unicorn* and the *intersection of two parallel lines*, seem to denote things that in principle could not exist in any world. At least in this world, such expressions have exactly the same set of possible referents: the set that has no members, the empty set. But their meanings clearly differ; each makes one think of a very different sort of thing that happens not to exist.
- **Reason (3)** Some important kinds of meaning do not involve reference at all. Expressions like *if, although*, and *because* do not help to depict an actual situation; rather, they signal logical relations between propositions. Many words – like *only, very, whether, not, or*, and *maybe* – have big effects on sentence meanings without affecting what a sentence refers to.

TEXTBOX 7.4 **DENOTATION AND CONNOTATION**

The term **denotation** refers to the thing, state, or event that a linguistic expression refers to in the real world, or some larger set of possible worlds. Thus, a linguistic expression **denotes** a set of possible referents. **Connotation**, by contrast, encompasses all of the *non-referential* effects that can arise from the use of an expression. There are in fact many kinds of connotative meanings. The following are just three.

The words *dog, doggie*, and *canine* have the same denotation but different connotations. They belong to different **registers** and so tend to occur in different social contexts: *dog* is neutral, but *doggie* is used with small children, and *canine* only in certain scientific contexts. (Register is discussed in more detail in Section 11.2.)

The words *spare* and *deprive* can both be used to denote withholding something from someone, but they differ in their **emotive content**: sparing someone sounds like a good thing (emotionally positive), while depriving someone sounds bad (emotionally negative).

Finally, two sentences can refer to exactly the same situation, but present it in very different ways: whether we say of a party *half the guests stayed past 10* or *half the guests left by 10* depends not on the situation itself, but on our **perspective** on it.

For these and other reasons, it makes sense to think of reference as an effect of meaning, rather than a part of it. Ultimately what an expression actually refers to on any occasion of use is a matter of pragmatics. The semantic content of an expression, its sense, is not *what* it refers to, but *how* it refers: the concept it activates in one's mind. There is thus a three-way relation between a word (or any sign), its sense, and its reference: ***the word evokes a concept in the mind of a language user, and that concept, which is the word's sense, is what determines its possible referents.***

Figure 7.1 shows the Semiotic Triangle, which illustrates the relationship between reference (a real or imagined cat), linguistic expression (in English, the word /kæt/), and sense (the concept of 'cat' in the mind of a given speaker).

A sense, in effect, is a kind of prompt to imagine something or to compose a thought in a particular way. Senses are thus psychological entities, but since language is a tool for communication, senses are not purely subjective. Senses are experienced subjectively, but like all conventions, senses must be shared within a community, and so they are essentially **intersubjective** (that is, they are experienced as communal knowledge). Basically, the sense of a word is what an ordinary speaker would expect any other ordinary speaker to expect it to mean.

Most expressions seem to have a fairly clear core sense, often in the form of one or a few properties that define a class of entities. The sense of *unicorn*, for example, is not the set of things that are or could be unicorns, but the set of properties that make something count as a unicorn. The core sense includes at least the features of (i) being a horse [+equine] and (ii) having a horn [+horned]. Other properties – like being mythically pure and gentle and typically white – may or may not be part of the core but will be widely recognized as typical, if not strictly necessary (judgments here may vary some). Since there are no [+equine,

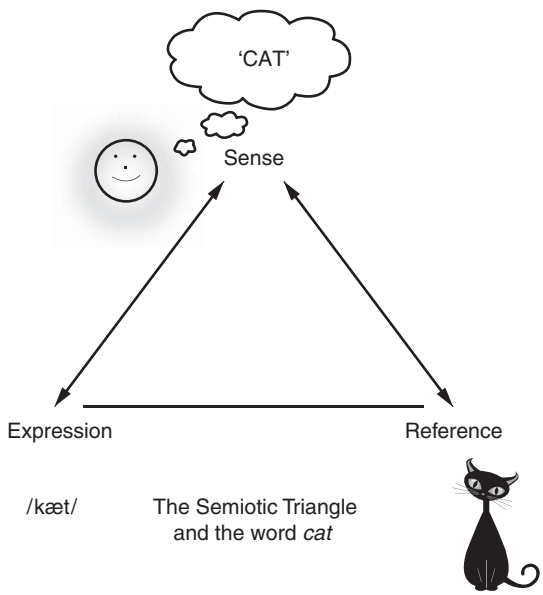


Figure 7.1 The Semiotic Triangle and the word *cat*

+horned] animals in this world, the word *unicorn* has no referents here. But it is easy to understand why; in fact, it is precisely its sense that makes it not refer.

The distinction between sense and reference is perhaps clearest in the interpretation of deictics like *this, here, I*, and *you*. As noted above, deictics in general function simultaneously as indices and as symbols: they are symbolic because their meanings are always a matter of linguistic convention; but they are also indexical since their value on any occasion depends on the context of use. Thus, the interpretation of a sentence like *That's the man I saw yesterday* depends on, at least, (i) when it is said, for the meaning of *yesterday*; (ii) who says it, for the meaning of *I*; and (iii) what the speaker is indicating by the use of *that*. But it is only the reference of these words that changes from one context to another; their senses stay the same. Each one always picks out its referent in exactly the same way: *I* always points to the speaker, *yesterday* to the day before the time of speech, and *that* to a contextually salient object of attention. Their senses are thus in effect instructions to find a referent. People use these words to refer, but they succeed in referring because of the words' senses.

7.4 Expressing Thoughts: Entailments and Contradictions

Senses allow us to use language not only to refer to things in the world, but to express all sorts of thoughts. The most basic sort of thought is a **proposition**: the sort of thing that can be true or false, possible or impossible; something that one could assert, deny, doubt, or believe. Propositions in general are defined by their **truth conditions**: the conditions that have to hold for them to count as true. In order to understand a proposition, one must know what would have to be the case for it to be true. Thus, one basic aspect of a lexical item's sense is its **propositional content**: the contribution to the truth conditions of an expressed proposition. (See Textbox 7.5 on morphemes which lack propositional content.)

Normally it takes a full clause to express a full proposition. *Paris is the capital of France* says something that could be true or false, but the word *Paris* on its own does not – it just refers to a place. The senses of individual words and morphemes are always smaller than a full proposition, but they are defined by their effects on propositional meaning.

Simple referring expressions like *Paris* and *France* can pick out individual entities or sets of entities, but relational expressions like *in, on, own, exist* and [*be the capital of*] allow us to construct predicates – that is, the part of a proposition that is actually *proposed*, "put forth," and predicated about a subject.

Since the semantic and syntactic core of a clause is usually the main verb, let us begin by considering how the verb *kiss* contributes to the meaning of the sentence in (5).

TEXTBOX 7.5 **DISCOURSE MARKERS**

Many meaningful expressions have little or no propositional content. Discourse markers offer some clear examples of expressions with purely **interactional meaning**:

oh, um, uh, well, like, so, anyway, actually I think, I guess, I mean, you see, you know, know what?

These are words and expressions that help a speaker to frame an utterance, express an attitude, attend to an audience, or coordinate an audience's attention.

(5) *She kissed him.*

The words in (5) form a structured syntactic constituent, a sentence (NP+VP), and so express a complex meaning, the structure of which partly mirrors its syntax and partly depends on the lexical meanings of its constituents. Note that this sentence on its own does not express a "complete thought" unless one knows, among other things, who the pronouns *she* and *him* refer to. Typically, the semantic content of a sentence gives only a bare outline of an expressed proposition, along with some pointers (deictic expressions) to salient aspects of the context. Most sentences will not express a full proposition (something that can be true or false) unless they occur in a context that can determine just what its deictic expressions point to.

SIDEBAR 7.3
The process by which meanings of deictic expressions are filled in by inference is discussed in Section 8.2.3.

Words on their own (like *Paris* or *fish*) do not express propositions, but they do have propositional content. One might explicate the meaning of *kissed* as having precisely the following four truth conditions:

(6) For any two individuals, *x* and *y*, *x kissed y* is true if and only if:
- **a.** x did something.
- **b.** something happened to y.
- **c.** x deliberately touched y.
- **d.** x used x's lips to touch y.

The four sentences (6a–d) are **entailments** of the word *kiss*. They specify necessary conditions – things that must be true – for something to count as a kiss: that there be (a) an agent (the kisser) who does something; (b) a patient (the kissee) who is affected; (c) a deliberate act of touching; and (d) use of the kisser's lips. For further discussion of truth and meaning, see Textbox 7.6.

STOP AND REFLECT 7.4 **PROPOSITIONAL SCHEMAS**

How does the propositional schema of *hug* differ from that of *kiss*? What about *eat* versus *feed, hear* versus *listen, lie (down)* versus *stand* versus *lean*, or *misspeak* versus *tell a lie*?

TEXTBOX 7.6 **TRUTH AND MEANING**

For those unfamiliar with semantic theory, it may seem odd to think about linguistic meaning in terms of truth conditions. After all, the meaning of a sentence does not depend on whether or not the sentence is true: *Pigs can fly* is a perfectly meaningful sentence; it just happens to be false. But part of the reason it is meaningful is that speakers of English can agree on its truth conditions – that is, we know what the world would have to be like for this sentence to be true.

And truth conditions are not just important for factual assertions, but for jokes and stories as well. If someone tells a joke about a panda that walks into a bar, no one is supposed to think such a thing ever actually happened. But to understand the joke, one may at least have to know what the world would be like if a panda did walk into a bar.

There are also many sorts of sentences for which truth seems not to be directly relevant. If someone asks a question like *What is the capital of Texas*? they are not saying anything that is either true or false. Or if someone makes a request like *Get me a doughnut*, it would make no sense to answer, "that's

TEXTBOX 7.6 (*cont.*)

true" or "no, you're lying!" On the other hand, both questions and requests depend on the expression of propositions that do have clear truth conditions. The question about the capital of Texas is, in effect, an attempt to get someone to name the particular city, A, that would make the proposition 'A is the capital of Texas' true. Similarly, with a request like *Get me a doughnut*, the relevant proposition is 'you get me a doughnut,' and the speaker in effect expresses a desire that the addressee should do something to make this proposition true.

Of course, there is more to meaning than just truth conditions, but without truth conditional meaning we could not use language to describe the world as it is or as it might be, to report the news, ask questions, make requests, or even tell lies.

The formulae in (6) use variables (x, y) rather than the personal pronouns (*she, he*) in (5), but the effect is the same: these sentences do not express complete thoughts, but just the outlines of propositions, which we can call **propositional schemas**. Schemas like these allow us to capture the propositional content of a lexeme without actually expressing a proposition.

TEXTBOX 7.7 **SEMANTIC ANOMALY AND HASH NOTATION**

A sentence is semantically anomalous if it is structurally (morphosyntactically) well formed but does not make good sense. A famous example of a semantically anomalous sentence was coined by Noam Chomsky in his 1957 book *Syntactic Structures: #Colorless green ideas sleep furiously*.

This sentence contains a number of contradictions, e.g., an entity cannot be both *colorless* and *green*. Contradiction is one kind of semantic anomaly. Just as the asterisk (*) marks a word or sentence as ungrammatical, the hash sign (#) is used to indicate semantic anomaly.

One can show that each of the propositional schemas in (6) is an entailment of the word *kiss*. Narrowly framed, an **entailment** is a relation between two propositions, P and Q, such that P entails Q, if (and only if) whenever P is true, Q is also true. But the term entailment also applies more broadly to any propositional content coded by an expression.

The crucial observation is just that if one calls something a "kiss" and at the same time denies one of the propositions in (6a–d), the result is a kind of nonsense called a **paradox** or contradiction (see Textbox 7.7), where two propositions are asserted which cannot both be true at once.

(7) **a.** *#She kissed him, but she didn't do anything.*
b. *#She kissed him, but nothing happened to him.*
c. *#She kissed him, but her lips didn't touch him.*

People tend to have strong intuitions about the entailments of lexical items they are familiar with, and they tend to notice when a sentence contradicts itself. So a good way to test whether something is an entailment of a given lexical item is, as in (7), to construct sentences that assert the lexical item and deny the hypothesized entailment. This is the "contradiction test."

Note that the same tests with words like *heard* or *trusted* do not create contradictions. Unlike *kiss* these words lack any entailments about touching or the use of lips (6c and 6d), or even about an actor doing something (6a) or an object being affected (6b). If one trusts or hears another person, one does not necessarily "do" anything, and to be heard or trusted one need not be aware of or changed by the experience.

Furthermore, the contradiction test shows that many things one might expect of a kiss are not part of the word's core sense. Typically, for example, kisses involve two people kissing each other on the lips, or maybe somewhere else on the face, either as a sign of affection or desire. But the fact that none of the sentences in (8) is a contradiction shows that none of these is actually an entailment of the word.

(8) **a.** *She kissed the ground when she got off the plane.* 'kiss' ≠ 'on a person'
b. *She kissed him on the elbow.* 'kiss' ≠ 'on the lips'
c. *She kissed him {spitefully/angrily/viciously}.* 'kiss' ≠ 'affection'

This suggests that the core sense of a word like *kiss* may consist of just a few entailments, which together distinguish it from all other English verb senses. Of course, there are many verbs that entail (6a) deliberate action (e.g., *promise, praise, consider, throw*) or (6b) an affected object (e.g., *convince, console, fold, squish*). And there is a substantial group that entails touching (6c), some of which, like *pucker* and *purse*, entail the use of lips (6d). But *kiss* appears to be the only English verb that includes all and only the entailments in (6): other English verbs of kissing (e.g., *smooch, snog, peck*) each have all of these entailments, plus some others, thus limiting them to just some kinds of kissing and not others. To explore entailments further, try the exercise in Stop and Reflect 7.5.

Together the four properties in (6) thus may be sufficient to make something count as a kiss (everything with all these properties is a kiss); and each is individually necessary for something to count as a kiss (every kissing event has all of these properties). If this is the core sense of the verb, then in essence a "kiss" really is just a 'deliberate touching with the lips.'

STOP AND REFLECT 7.5 **IDENTIFYING ENTAILMENTS IN VERBS OF 'TOUCHING'**

Like *kiss*, each of the verbs *slap, tickle, pinch, poke, spank*, and *wipe* denotes a kind of touching event in which two individuals, a "toucher" and a "touchee," come into physical contact. For each verb, consider whether its use normally carries any of the following sorts of entailments:

i. that the toucher act deliberately;
ii. that the toucher use a particular body part or instrument;
iii. that the touchee have a particular kind of surface;
iv. that a particular part of the touchee be affected;
v. that the touchee feel something;
vi. that the contact occur in a particular manner, either gently or forcefully.

Use the contradiction test to identify the core entailments associated with each verb. Are there verbs that carry all six sorts of entailments listed here? Do the verbs differ much in the number of entailments they encode? Are there particular sorts of entailments that get encoded more than others?

7.5 Dictionaries and Encyclopedias

But is that really all there is to a "kiss"? The four sparse features in (6) may distinguish the verb *kiss* from all comparable verbs in the language, but it's easy to imagine there must be more to its meaning. A sentence like *She kissed him* may call to mind certain kinds of kissing more than others: kissing on the lips, or at least the face, rather than on other parts of the body; people kissing other people rather than rocks or socks or money; kisses of friendship or affection or desire rather than kisses of torture, taunting, or interrogation. But how much of all this gets included in the sense of a word?

In phonology, the distinctive features of a phoneme include just enough information to distinguish it from other phonemes in a language, and the fine-grained details of pronunciation are a matter of phonetics. Perhaps the semantic content of lexical items is similarly sparse, and the rich inferences that people may make on the basis of a word's use are more a matter of pragmatics than semantics. In that case, ***a speaker's "mental dictionary," or* lexicon**, ***will indicate certain kinds of common entailments in words, while other sorts of common-sense information about a word's referents are seen as* encyclopedic knowledge**.

It can be hard to know where to draw the line between specialized linguistic knowledge and general world knowledge; ordinary reference dictionaries inevitably include a good deal of encyclopedic information in their definitions. The three definitions of *kiss* in (9), from three widely used English **dictionaries**, all include more than just the four proposed entailments in (6).

(9) **a.** to touch or press with the lips slightly pursed, and then often to part them and to emit a smacking sound, in an expression of affection, love, greeting, reverence, etc. *Dictionary.com*

b. to touch or caress with the lips as an expression of affection, greeting, respect, or amorousness. *American Heritage Dictionary*

c. to press or touch with the lips (at the same time compressing and then separating them) in token of affection or greeting, or as an act of reverence; to salute or caress with the lips; to give a kiss to. *Oxford English Dictionary*

These dictionaries seem to agree that to understand the word *kiss* one needs to know something about both how kisses occur, and why. Two offer precise descriptions of the physical act – the labial gesture. All three note typical contexts for people to kiss, thus emphasizing the inherently social nature of the act.

But all three definitions here also resort to just listing different functions of kissing, as in *Dictionary.com*'s "affection, love, greeting, etc." The point of such a list is not to limit the sense of the word with necessary or sufficient conditions, but rather to give some typical examples for people to use in thinking about the category. For a discussion of dictionary paraphrases and the goals of semantic theory, see Textbox 7.8.

TEXTBOX 7.8 **MEANING AND PARAPHRASE**

What one finds in a dictionary definition is very different from what can be found in a speaker's mental lexicon. At best a dictionary can paraphrase a word's meaning, using other words to express the same idea. The dictionary helps us understand a meaning by giving us another way to describe that meaning, but this is not at all the same as just having that meaning in mind in the first place.

A paraphrase can be more or less complete or precise, but the actual meaning of a word is the idea itself, not just an alternative way of expressing that idea. As a practical matter, to talk about word meanings, or about any other kind of idea, dictionaries need to use a language or code of some sort. But ordinary thought does not depend exclusively on language: one can imagine a face, for example, without being able to describe it in words.

Ultimately, in studying linguistic meanings we are also trying to understand how words connect to the general, non-linguistic rational abilities, which allow us, with or without language, to think about and react to the world both as it is and as it might be. A theory of semantics must offer some way of describing these abilities, either as a "**language of thought**," or in a dynamic model of human conceptualization.

7.6 Prototypes

It may be tempting to think of a word's meaning as a list of simple (binary) features, but that can make it hard to explain some common ways people use and understand language. In the ordinary course of events, people often do not – and sometimes cannot – reason about categories in terms of necessary and sufficient conditions. They tend instead to make judgments about category membership (e.g., whether or not something counts as a kiss or a punch or a unicorn) based largely on patterns of resemblance they find to familiar instances of a category. This kind of basic analogical reasoning is what allows us to use words productively, relating new instances to familiar categories.

Generally when one imagines an instance of a category, one does not just think of its most abstract defining properties; instead, one probably begins with fairly rich ideas about what members of that category are like. These sorts of ideas create **prototype effects**, leading people to recognize and imagine some members of a category more quickly than others. A single word may have several distinct prototypes. For example, how one imagines a prototypical *kiss* depends a lot on how one imagines the *kissee*, with very distinct images and events for a hurt child, a newlywed, a grandfather, or a bishop's ring.

Lexical prototypes often include features that are neither necessary nor sufficient for category membership, but still seem to be central to a word's meaning. Take the word *bird*. Since all animals that have either a beak or feathers are birds, either one of these features alone is sufficient to make something count as a bird. On the other hand, since many animals that are not birds can fly (e.g., bats), and since many birds cannot fly (e.g., penguins), the ability to fly is neither necessary nor sufficient to make something a bird. But most people are very familiar with various kinds of birds that do fly, and so people can usually expect that other people will think of small, flying, feathered animals, some

of which are brightly colored and sing. With the exception of "feathered," none of these features is either necessary or sufficient to make something a 'bird,' but the kinds of birds that share these features tend to be both common and familiar in many parts of the world, and so for many people they form a kind of **prototype** for the category of birds as a whole (see Stop and Reflect 7.6).

STOP AND REFLECT 7.6 **PROTOTYPES IN CATEGORY STRUCTURE**

Ask several people to imagine examples of each of the following sorts of things (i–v):

i. something red
ii. a fruit
iii. a vehicle
iv. a game
v. things to take on a picnic

Next, ask them to imagine examples of each of the following situations (vi–vii):

vi. a wedding
vii. a scene with a police officer (*p*), a judge (*j*), and a defendant (*d*).

Are there particular shades of red people tend to think of first and most? What sorts of fruits came first to mind? What sorts of vehicles, games, or weddings? What sorts of things do they imagine *p, j,* and *d* might be doing together or saying to each other?

Can you find any reasons why the sorts of examples people think of first are somehow salient in their experience?

Prototypes play an important role in the meanings of many lexical items because people typically reason about things and situations in terms of familiar features and memorable exemplars of similar things. In some cases, this sort of reasoning may be viewed as a pragmatic effect of language use. In other cases, whole concepts and categories seem to be organized around one or more salient prototypical examples, in which case prototype effects may be somehow built into the semantics of an expression.

7.7 Lexical Semantic Relations

Ultimately, the meaning of any lexeme, what it adds to a language, is always partly a function of its relations with other lexemes: the value of a linguistic expression lies in its potential to contrast with other expressions in the same language. There are many ways that lexemes can be semantically related, but three in particular seem to stand out: (1) identity of senses, **synonymy**, (2) inclusion of senses, **hyponymy**, and (3) oppositeness of senses, **antonymy**. Synonyms are words with similar or identical meanings, like *amble* and *stroll*. Antonyms are lexemes with (somehow) opposite senses, like *hot* and *cold*. And one lexeme is a hyponym of another if its sense is more specific and it refers to a narrower set of potential referents; thus, *beagle* is a hyponym of *dog*, and *indigo* is a hyponym of *blue*.

SIDEBAR 7.4

The symbol ⊂ means "is a subset of," so A ⊂ B means that A is a subset of B, or that A is included in B (A is a hyponym of B).

The symbol ⊃ means "is a superset of," so B ⊃ A means that B is a superset of A, or includes A (B is a hypernym of A).

Each of these three basic kinds of lexical relations is illustrated in (10), with groups of English adjectives denoting (i) degrees of wealth, (ii) kinds of human figures, and (iii) degrees of hot and cold.

(10) **a.** Synonymy: i. *rich – wealthy – affluent*
ii. *slender – slim – sleek – lithe – thin*
iii. *cold – cool – nippy – frosty – frigid*
b. Hyponymy: i. *mega rich* ⊂ *rich*
ii. *slim* ⊂ *thin*
iii. *glacial* ⊂ *cold*
c. Antonymy: i. *rich : poor*
ii. *chubby : slender*
iii. *cold : hot*

These basic semantic relations are usually easy to observe among groups of closely related words, or lexical fields. As a general rule, the more entailments a group of lexemes shares, the more closely related they will be, and languages tend to have many rather densely populated fields of closely related terms. Among verbs of 'touching,' for example, we find many hyponyms (e.g., *poke, pat, pet, stroke, kiss*), a few near and partial synonyms (e.g., *feel, reach, contact, abut*), and some opposites (e.g., *shun, separate*).

Synonyms are words that share a common sense, having the same – or very similar – entailments. In general, if any two words had identical meanings, there would be no reason to have both in the language. Thus, where synonyms can be found in a language, they tend to differ in some small way, either in a nuance of sense or in their typical contexts of use. Still, there are many situations where substituting one word for another will have little or no discernible effect on the meaning of a sentence. (See Textbox 7.9.)

TEXTBOX 7.9 **SYNONYMS, ANTONYMS, HYPONYMS AND HYPERNYMS**

Synonyms share a common sense – though the words may differ in their social contexts of use: e.g., *film, movie, flick, motion picture, show*; or, *cat, feline, tomcat, kitty*; or, *coffee, java, joe*.

Antonyms are pairs of words that have opposite meanings: e.g., *dead : alive, hot : cold, easy : difficult, backward : forward*.

Hyponyms and hypernyms have multiple layers, as in the following examples, where *fry* is a hyponym of the hypernym *cook*, but *fry* itself is also a hypernym for some other types of frying:

Hypernym: *cook*
Hyponyms: *bake, boil, grill, fry, steam, roast*
Hypernym: *fry*
Hyponyms: *stir-fry, pan-fry, sauté, deep-fry*

Since words often have multiple senses, two or more words may overlap very precisely in one or more senses but still exhibit a very different overall range of uses, as in the following three sets of examples.

Partial overlaps {*get, take, see, hear, understand*} what someone says
{*stand, stomach, put up with, tolerate*} a situation
{*want, lack, need, long for*} something

Sometimes the overlap is extensive, resulting in near synonyms:

Near synonyms *see, watch, look (at), regard, stare*
walk, amble, saunter, stroll, stride, strut

Teasing apart the semantic differences among near synonyms reveals the fine-grained distinctions lexical items can encode. For example, the 'seeing' verbs, above, seem to differ in the kinds and quantities of effort or attention that they entail.

In other cases, near synonyms may differ not so much in the sorts of situations they depict, but only in what they imply about how the speaker is judging the situation. Thus, the words *spare* and *deprive* both entail that someone is prevented from having or experiencing something, but *spare* makes it sound like a good thing, while *deprive* makes it sound bad. Such *evaluative synonyms* are not uncommon.

Evaluative synonyms *rapid/hasty; slender/skinny; thrifty/cheap; bold/reckless*

In other cases, the differences depend on the social context. Some synonyms are usually used in particular regions, whereas others may vary according to the social context or register:

Regional variants *soda, pop, cola, coke*
Register variants *automobile, motor vehicle, car, wheels, ride*

SIDEBAR 7.5
The concept of register is further discussed in Section 11.2.1.

Languages can and often do differ in the density of a lexical field. In English the word *break* applies more or less neutrally to any object that can lose its structural integrity. K'iche' Maya appears to lack any similarly neutral equivalent and instead uses a variety of more specific roots, many of which encode something about the manner of breaking or the type of material that gets broken. The twelve verb roots in (ii) come from a list of forty-two different K'iche' Maya "Breaking and Cutting Verbs" reported by Pye (1996) and include all the most common translations for English *break*. (See Stop and Reflect 7.7.)

(11) K'iche' Maya verbs of 'breaking'

-chiko:j	'break a thing by throwing it (e.g., chest, stool, pot)'
-joyopi:j	'break a banana from a bunch of bananas'
-mich'	'chop (e.g., a plant); pluck (e.g., feathers, pine needles)'
-paxi:j	'break a solid thing (e.g., clay, rock, glass, plate, cup, pot)'
-pi'i:j	'break a soft thing (e.g., book, tortilla, clay, hardboiled egg)'
-pitz'itz'e:j	'crush a soft thing (e.g., clay)'
-q'upi:j	'break a hard thing (e.g., bridge, candle, basket, stick, chair, tooth)'
-raqi:j'	'smash a hollow thing (e.g., glass, pot, plate, chest, bubble)'
-sak'ij	'crack a surface (e.g., wall, melon, plate, glass, skull, tree, board)'
-t'oqopi:j	'break/snap a long flexible thing (e.g., rope, wire, string)'
-weqi:j	'break/smash a hard thing (e.g., pot, wall, stone griddle, mile post)'
-woqi:j	'break/shatter a fragile thing (e.g., eggs, vase, light bulb)'

STOP AND REFLECT 7.7 **VERBS OF 'BREAKING' IN ENGLISH**

K'iche' Maya seems to lack a broad default like *break*, but the English word *break* does have some vivid hyponyms. Consider words like *splatter, shatter, smash, explode, shred*, and *fracture*. What sorts of entailments do you think these verbs add to those of *break*? How do these entailments differ from those suggested by the glosses for the Mayan verbs?

Hyponymy is a relation between two words, one of which is more specific than the other: an expression A is a **hyponym** of another expression B if and only if the denotation of A is a proper subset of the set of entities denoted by B (in which case B is also considered a **hypernym** of A). For example, since a queen is necessarily a woman, and (in the Catholic Church) a pope is necessarily a man, *queen* is a hyponym of *woman* and *pope* is a hyponym of *man*.

In general, hyponyms are both more specific and thus in ordinary assertions more informative, than their hypernyms. Thus, the words *amble, saunter, stride, stroll*, and *march* are all hyponyms of *walk*: each has all the entailments that *walk* does, plus one or two more. Similarly *aged, ancient, antique, decrepit*, and *senile* are hyponyms of *old* since they can all be paraphrased by *old*, but each applies to a much narrower range of referents than does *old*.

For more examples of hyponyms and hypernyms, see Textbox 7.9. Sometimes hyponymic relationships combine to form taxonomies, as shown in Textbox 7.10.

TEXTBOX 7.10 **TAXONOMIES**

Many sorts of lexical fields seem intuitively to be organized by the inclusion relation into a branching hierarchy of groups. Such fields are called **taxonomies**.

Nature	*tiger → carnivore → mammal → vertebrate*
	emperor penguin → penguin → bird → creature
Art	*cleaver → knife → tool → thing*
	spinach → greens → veggies → food → stuff
Movement	*amble → walk → move*
	trot → run → locomote

The familiar term **antonym** is used both broadly, for any pair of words with opposite meanings, and more narrowly just for **contrary** (or gradable) antonyms – terms that designate opposite regions of a scale with some intermediate range of values between them: e.g., *hot : cold, long : short, fast : slow*, and *big : little* (see Textbox 7.9). Contraries cannot both be true of the same entity in the same way, but they can both be false. A drink could be neither hot nor cold, a book neither long nor short, and a run neither fast nor slow.

Self-quiz on lexical semantic relations

But there are other kinds of "oppositeness" too. For example, complementarity is an opposition where something is either one way or the other: **complementaries** are pairs of terms, such that wherever one is true the other is false, and wherever one is false the other is true. Typical examples include *dead : alive, odd : even, present : absent, inside : outside*, and *legal : illegal*.

Reversive antonyms are terms denoting either movement in opposite directions – for example, *come : go, give : take*, and *raise : lower* – or change between reversible states, like *melt : freeze, dress : undress*, or *cover : uncover*. And **converse antonyms** are terms that denote different participants in a binary relationship, like *husband : wife*, and *student : teacher*, or the same situation from opposite perspectives, as with *in-front-of : behind* and *above : below*.

7.8 Sense and Imagery

In actual discourse, speakers and writers do not just offer up a series of abstract propositions; they choose propositions based on their communicative goals and formulate them in ways that highlight their relevance, as discussed in the next chapter. To understand the meaning of a word, one has to know its entailments, but one also needs to know how it can be used and what kinds of conceptualizations it can trigger: the **imagery** it evokes and its effects on **construal**. While people tend to think of connotations as loose associations a word might have for some speakers, ***imagery and construal are core elements of meaning, integral to the way expressions are understood***.

The imagery of a linguistic expression includes not just visual images, but all the tactile, auditory, olfactory, physical-sensory, and motor associations it regularly triggers. Thus, to sort out the senses of bipedal motion verbs like *amble, saunter, stroll*, and *traipse*, the relevant images would include not just pictures of people walking, but also motor memories of walking in a leisurely way.

Imagery is just one facet of construal, which includes all aspects of the way an expressed meaning is brought to mind and imagined. Construal is what explains how two expressions can denote precisely the same set of situations and yet differ dramatically in their meanings. Usually, it's because they somehow trigger different ways of building up a conceptualization. And since conceptualization is a complicated process, there are many kinds of construal one could consider.

The phenomenon of **fictive motion** is a good place to start. In (12) the motion verb *ran* presents a static situation as if it were dynamically unfolding.

(12) **a.** *A long scar ran from her hip to her knee.*
b. *A long scar ran from her knee to her hip.*

There is no actual movement except in the virtual gaze of a conceptualizer, and the different wordings in (12) thus correspond to different ways one can build up a mental image or scan an imagined scene.

The contrast in (13), on the other hand, depends on an effect of figure–ground reversal. Here the difference lies not in how the image gets built up in the mind, but rather in where the focus of attention is, on what gets profiled as the primary figure (or **profile**) in a scene and what is left in the background. Thus (13a) profiles a playground and locates it in a shadow, while (13b) profiles a shadow and locates it at a playground. The two expressions describe the same situation but construe it in different ways.

(13) **a.** *the [playground] [in the shadow of the tree].*
b. *the [shadow] [of the tree on the playground].*

SIDEBAR 7.6
For more explanation of the terms **figure** and **ground**, see the Glossary (at the back of this book or online), and the Lowland Chontal Language Profile, Section LP9.3.

This kind of figure–ground reversal has many manifestations in both thought and language. The contrast between the active and passive sentences in (14) illustrates a similar sort of alternation. Again there is no difference in entailments: it is just a matter of which participant – the kisser or the kissee or both together – stands out as the primary figure in the scene.

(14) **a.** *She kissed him.*
b. *He was kissed by her.*
c. *They kissed.*

Another important aspect of construal concerns the way an expression's entailments are entered into the discourse. Not all entailments are created equal. A few come out posed in actual assertions or questions or denials, but others may slip in as a kind of background to what is said.

A **presupposition** is a proposition which comes embedded in the use of a construction and so gets expressed without being asserted. Thus, for example, the adverb *again* profiles the repetition of an event, but it presupposes the event's prior occurrence. So both *They kissed again* and *They didn't kiss again* presuppose that there was a kiss in the past, but they make contradictory assertions about the occurrence of any later kissing (see Stop and Reflect 7.8).

SIDEBAR 7.7
See Section 9.8 for more on how new information is expressed in discourse.

Presuppositional senses are not at all rare, though where they occur, they are likely to go unnoticed. Normally, as one processes the successive utterances in a discourse, one focuses only on what is new at that moment, and so sentences are usually expressed in ways that highlight new information against the background of what is known or assumed. Presuppositions thus serve an important role in relating the expressed content of an utterance to information shared by the discourse participants.

STOP AND REFLECT 7.8 **PARTICLES WITH PRESUPPOSITIONS**

Each of the italicized expressions below contributes a presupposition of some sort. For each sentence, try to identify what propositions are asserted and what is presupposed.

(e.g.) They kissed *again*. (it's happened before)

a. They *finally* kissed.
b. They *even* kissed.
c. They kissed *too*.
d. They *already* kissed.
e. They are *still* kissing.
f. *The* kiss was brief.

7.9 The Structure of a Sense: Profile and Frame

Presuppositions are just one way that the entailments of an expression can be backgrounded. ***The sense of any linguistic expression consists of some profiled content construed against a background frame.*** Profiling is at the heart of word meaning, and of linguistic meaning more generally, because linguistic communication is largely a matter of directing the flow of attention.

A **frame** is a coherent facet of conceptual structure that provides the basis for understanding one or more semantically related expressions. The **profile** is the part of an evoked frame that an expression designates. Thus, the word *hypotenuse* profiles a line segment within the frame of a particular sort of geometric arrangement, a right triangle. Without this frame, there could be no such thing as a hypotenuse. Similarly, a word like *door* profiles a part of a room, and words like *mother, brother*, and *uncle* profile different individuals framed by a network of family relations.

Sometimes the division of labor between profile and frame is obvious. Consider the concept of a 'door.' Thinking of a door, you might imagine a flat object that moves on hinges and covers an entryway, and that can be opened or closed to either allow or prevent access into a room. To imagine a door, one must first imagine an enclosed space, that is a 'room that one could enter or leave.' And to imagine a room, one could also imagine a larger structure of some sort that the room might be part of. Thus, the word *door* profiles an element within the "room" frame, while *room* itself profiles an element in the "building" frame. Ultimately, the word *building* itself also depends on other very general frames (also sometimes called semantic domains) for things like three-dimensional space and human artifacts.

The profile of a word often represents a prominent part of the frame to which it belongs. Thus, a *hypotenuse* is one part of a right triangle; a *lid* is one part of a jar or box; a *finger* is part of a hand. Some words, however, profile an entity or a condition that somehow deviates from the normal background frame. Words like *dent* and *wrinkle*, for example, profile discontinuities in a surface that one might expect to be smooth; similarly, adjectives like *empty* and *absent* profile temporary conditions in which an entity of some sort does not appear where it might have been expected.

Often words with closely related meanings differ only in their profiles. For example, the English word *dream* functions both as a verb – in which case it profiles the process of dreaming as it unfolds in time – and as a noun, in which case it profiles the thing which is envisioned in that process. Similarly, the English agentive suffix *-er* in words like *dreamer* and *runner* switches the profile of a root from the process as a whole to a participant in that process.

Often a single lexeme on its own can evoke a whole ensemble of culturally specific frames. To understand the meanings of terms like *line drive, ground ball*, and a *pop fly*, one must know not only that these terms denote ways of hitting a baseball but what a baseball game is in general. And to know what it means to *call, raise, fold, bluff*, or *draw a straight flush*, one needs to know that these are things one can do in a game of poker (see Stop and Reflect 7.9).

Frames involving knowledge of complex events or scenarios are sometimes called **scripts**. Common-sense knowledge about restaurants, for example, is organized around the sorts of events that take place in a restaurant: e.g., seating, ordering, eating, clearing, paying, and tipping. Without some background and culturally based knowledge of this complex script, one cannot begin to understand words like *waiter, menu, tip*, and *reservation*. Scripts in general are useful for describing basic sorts of social knowledge, like how one should behave and what one can expect on a doctor's visit, at a birthday party, on a picnic, or in a linguistics seminar.

STOP AND REFLECT 7.9 **SEMANTIC FRAMES**

Charles Fillmore, a leading figure in semantic theory, stated "to understand what any one member of the group is about is, in a sense, to understand what they are all about" (Fillmore 1985: 223). Consider each of the following lists of words and how the meaning of each word in part depends on the meanings of the others. If you use one word, it is naturally profiled against others within that frame. How would you name the frame represented by each group of words? Which of these frames are culturally specific?

Monday, Tuesday, Wednesday, Thursday, Friday	The_____Frame
tall, grande, venti, trenta	The_____Frame
enroll, attend, study, pass, fail, graduate	The_____Frame
defend, retreat, defeat, surrender	The_____Frame

Another well-known script, the Commercial Event Frame, provides the conceptual basis for words like *buy, sell, cost*, and *pay*, among many others. Imagine that Chuck has a beautiful box that he gives to George in exchange for $12. In such a situation, all of the sentences below will be equally true. But while these sentences all depict the same situation, they each have their own distinct meanings because of how they are construed.

(15) **a.** *Chuck sold the box to George for $12.*
b. *George bought the box from Chuck for $12.*
c. *George paid Chuck $12 for the box.*
d. *The box cost George $12.*

Evidently, words like *buy* and *sell* describe the same sort of situation with the same sorts of participants engaged in the same basic activities, but they do so in different ways. In order to understand the meanings of these words, one needs to understand that the situations to which they apply always feature certain participants (or **frame elements**) with certain semantic relations (i.e., **case roles**) among them. In particular, there has to be a buyer, a seller, some money, and an item to be exchanged; the buyer must give money to the seller, and the seller in return must give the item to the buyer.

SIDEBAR 7.8
See Section 6.3.5 for a detailed introduction to semantic case roles.

One can then analyze the meanings of lexemes like *buy, sell, cost*, and *pay* as profiling different sorts of entities or relations against the background of the Commercial Event Frame. Thus, *buy* profiles a scene in which the primary figures are the buyer and the goods,

and the other participants are left unmentioned or else expressed less prominently in an oblique phrase (i.e., out of the spotlight that falls on the subject and object in a clause). And *sell* denotes exactly the same sort of scene, except it profiles the seller and the goods as the primary figures.

7.10 Framing Motion Events: Cross-Linguistic Differences

SIDEBAR 7.9
A rich morphological system for encoding posture, means, manner, direction, and motion is found in Lowland Chontal, a language spoken in Oaxaca, Mexico; see the Lowland Chontal Language Profile, Section LP9.3.

As we have seen, words for games, food, art, and clothes can be richly framed. This is also true of more basic sorts of words where the framing involves much more basic aspects of experiences and so can be easy to overlook. Consider a situation in which an entity moves from one place to another. To describe such a situation, one would probably depict the moving entity – or theme – as the primary participant, and the path it moves on – from start to finish – as part of the background frame. But there are many other details one might attend to in a motion event, as can be seen in Textbox 7.11, and different languages tend to present this information in different ways.

TEXTBOX 7.11 **PARTICIPANTS AND PROPERTIES OF SIMPLE MOTION EVENTS**

Theme:	Who is moving?	**Manner:**	What kind of motion is it? e.g., quiet, heavy, sneaky, sudden, etc.
Path:	What is the route of motion? e.g., a straight line, zigzag, etc.		
Direction:	Is the motion toward or away from a reference point?	**Medium:**	Is the motion on land, or through water, air, mud, or something else?
Means:	What causes the motion? e.g., foot, hoof, wing, car, bus, boat, etc.	**Rate:**	How fast is the movement?

The sentences in (16) are fairly typical of the way motion events tend to be expressed in English. They have a set of fairly standard entailments. In each of these sentences the subject NP denotes a theme, that is, an entity that moves along a path, and the prepositional phrase adjunct depicts a path, while the verbs *slither, saunter, scamper*, and *crawl* each profile a different manner of motion.

(16) **a.** *The snake slithered across the floor.*
b. *The actor sauntered out of the room.*
c. *The mouse scampered through the bushes.*
d. *The baby crawled toward the kitten.*

This is the way Chinese, English, and most other Indo-European languages tend to express motion events, with the means and manner expressed in the verb nucleus, while

path and direction get specified by phrases and particles lower in the verb phrase, toward the periphery of the clause, as in (17).

(17) **a.** *The bottle*$_{\text{manner}}$ [*floated*]$_{\text{path}}$ [*into the cave*].
b. *The children*$_{\text{manner}}$ [*jumped*]$_{\text{path}}$ [*down the stairs*].

But Romance languages (and many others, including Semitic, Polynesian, Nez Perce, and Caddo) tend to express direction directly in the verb and relegate the manner of motion to the clause periphery. Thus in (18), the French counterparts to (17) have main verbs that express a direction of motion (i.e., *entrer* 'go in' and *descendre* 'go down'), while the manner of motion is optionally specified by a verb at the end of the clause.

(18) **a.** *la* *bouteille* *est* *entrée* *dans* *la* *grotte* *en flottant*
DET bottle AUX go.into.PST in DET cave floating

b. les *écoliers* *ont* *descendu* *l'escalier* *en sautant*
DET schoolchild.PL AUX go.down.PST DET.staircase jumping

In some other languages, one finds an abundance of motion verbs that entail something about the moving figure. In Atsugewi, an extinct polysynthetic language of Northern California, many verb roots expressing motion or location also have specific entailments about the kind of theme that moves or is located.

(19) Atsugewi verb roots

-lup-	'for small shiny spherical objects to move/be-located'
-t'-	'for smallish flat objects to move/be-located'
-caq-	'for a slimy lumpish object to move/be-located'
-qput-	'for loose dry dirt to move/be-located'
-st'aq'-	'for runny icky material to move/be-located'

It is difficult to capture these entailments except by listing the kinds of themes they involve. The *-lup-* root applies to things like round candies, eyeballs, and hailstones; the *-t'-* root is used for things like a stamp, a clothing patch, a button, or a shingle; the *-caq-* root might be used of a toad or a cow dropping; the *-st'aq'-* root covers things like mud, manure, rotten tomatoes, guts, or chewed gum.

By comparing the semantics of motion verbs across languages, we can see that languages package information differently, with some incorporating particular aspects of the motion event into the core meaning of verb roots, and others indicating these meanings in root-external morphemes or phrases.

7.11 Polysemy: Relations between Senses

It often happens that two or more words in a language can have the same form, but no real semantic connections. English, for example, has two words *flatter*, one a lexical verb meaning 'to fulsomely praise,' the other the comparative form of the adjective *flat*. These words are **homonyms**, because their formal similarity is just coincidence. But it often happens that a single word in a language will have a number of distinct but more or less closely related senses. Such words are polysemous. **Polysemy** is the property of having

multiple (*poly-*) meanings (*sem-*). This is, in fact, the normal condition for most common lexemes.

In polysemy, the different senses of an expression must be both distinct and related. For example, the word *hand* occurs both as a noun denoting the part of the body at the end of the arm, or as a transitive verb denoting the action of transferring an object from one person's hand to another. These two senses clearly have something in common, and so *hand* is polysemous.

Polysemy contrasts with **vagueness**, where a single word encompasses a broad range of referents not because it has multiple senses, but because it has one very general sense. The noun *thing* and the verb *do* are perhaps maximally vague, since they can be used in reference to almost any entity or action, respectively. But all lexemes, with the possible exception of some proper nouns, are vague in at least some respects. *Chair*, for example, is vague with respect to the color, material, and number of legs an object must have to count as a 'chair.' Similarly, the English word *uncle* is vague in that it refers to a brother either of one's mother or of one's father, though many other languages have distinct terms for these two relations (e.g., in Latin *avunculus*, 'mother's brother,' and *patruus*, 'father's brother'). (See Stop and Reflect 7.10.)

STOP AND REFLECT 7.10 **'HANDS' AND 'ARMS'**

Body-part terms in different languages often differ in their extensions. *The World Atlas of Language Structures* (*WALS*) identifies 228 languages that have a single word for both 'hand' and 'arm,' and 389 that use two or more distinct words for these concepts. For instance, Chai (Nilo-Saharan; Ethiopia) has separate words for 'hand,' *síyó*, 'forearm,' *múní*, and 'upper arm,' *yíró*, but none for 'arm.'

Words that denote both 'hand' and 'arm' can be found in the Oceanic language, Lonwolwol (*va*), Czech (*ruka*), and the Niger-Congo language, Gurma (*nu*). Given that other languages often have separate words here, should these general 'hand/arm' words be analyzed as vague or polysemous? What kinds of evidence might help to decide?

One way to distinguish among the different senses of a word is to look for other words which can substitute for that word in at least some contexts without substantially changing what is said. The following uses of *cry*, for example, require different substitutions, and so arguably involve distinct senses of the word.

(20)	Sentence with context	Possible substitutes
	a. She *cried* out in pain.	'yelled (non-verbal)'
	b. "Buttons for sale," she *cried*.	'shouted (verbal)'
	c. She *cried* for hours when the mouse died.	'sobbed, wept'

The substitution test helps us to identify different senses and sub-senses of lexical items, but its results are always open to interpretation. For instance, *cry* could be analyzed as having just one abstract sense encompassing a wide range of vocal behaviors, of which words like *yell, weep, shout*, and *sob* each profile a specific sort. Or one might argue that *cry* has a specific prototype in the 'weep' sense from which other uses are extended.

When words do have multiple related senses, those senses must be somehow connected, and the most common connections among senses tend to involve either **metaphor** or **metonymy** (or sometimes both). In classical rhetoric, metaphor and metonymy are ways of using an expression that somehow shift the expression away from its original sense. In metaphor, a term whose sense belongs primarily in one semantic frame gets shifted to another frame, often based on some perceived resemblance between the two: thus, a word like *flower* may be applied to a woman or generally to someone young and beautiful; a word like *path* may apply to any way of achieving a goal; and the word *up* can denote things like happiness, alertness, or increase, in addition to just vertical elevation. In metonymy, the sense shifts from one element to another within a single frame, based on a principle of contiguity: classic metonymies include relations of part for whole (*all hands on deck!*), place for event (*remember the Alamo!*), instrument for action (*go bicycling*), and cause for effect (to *suffer minor burns*). If one describes a man as *married to his job*, that is a metaphor, since jobs and marriage are very different kinds of things, but if one locates one's car by saying *I'm parked out back*, that is metonymy, since the speaker (*I*) and the car are very different sorts of things but are saliently connected in the ownership frame.

Often one can find both metaphor and metonymy at work in a single expression. Thus in *lend me your ears*, the association of *ears* with *attention* is metonymic, since ears are for listening and listening is part of paying attention; but *lend* is used metaphorically, since its basic sense of physical transfer is extended to the frame of mental attention (as it is in expressions like *pay attention* and *give a look*).

Certain patterns of polysemy are so common as to be almost entirely predictable, and such patterns often involve metonymy of one sort or another. For example, one can use the name of a country, like *France*, to profile: (i) a place (as in *France is a beautiful country*); (ii) a government (as in *France has broken off relations with Belgium*), or other representative entities, like a soccer team (as in *France won the game*).

Similarly, we can use the name of a periodical publication, *P*, like *Time* or *The Washington Post*, to designate the company that publishes it (*P has offices all around the world*), the published content of the periodical (*Jack reads P online*), or the physical publication itself (*Maggie uses P to line her birdcage*).

And the name of a play or novel, like *Hamlet* or *Wuthering Heights*, can be used in reference to a text (as in *She's been studying Hamlet for years*), to a physical instance of the text (as in *I left my Hamlet on the train*), or to a theatrical or filmed production of the play. And of course the title *Hamlet* itself is based on another common metonymy, where the name of a main character stands for the whole of a story.

Certain kinds of **metaphorical extensions** are also very common in polysemous terms. For example, color terms are used for emotions (e.g., *He's feeling* blue), perception verbs are used to describe thoughts (e.g., *I* see *what you mean* or *She* felt *certain*), spatial terms are applied to time (e.g., *the* length *of time*), and body-part meanings get extended to spatial relations (e.g., *in* back *of; the* head *of the line*).

Many of the most common metaphors are not based on resemblance, but rather on correlations in experience. Thus, we speak of people metaphorically as "warm" or "cold" (that is, 'sympathetic' or 'hostile'), not because sympathy is similar to heat, but because the

experience of physical warmth from a human body is an important part of some of our most basic experiences of human sympathy: for instance, in a baby's experience of being held and soothed, and in other salient contexts where human warmth and affection are regularly correlated. Because certain aspects of human experience are universal, some metaphors are commonly found cross-linguistically; see Textbox 7.12.

TEXTBOX 7.12 **METAPHORS FOR "DIFFICULTY" ACROSS LANGUAGES**

Even very basic concepts may be susceptible to multiple metaphorical construals. The concept of 'difficulty,' for example, can be imagined in terms of heaviness or hardness. In English one speaks of problems as "hard" or "tough" if they are difficult to solve, and as "weighty" or "heavy" if they are severe or important.

In French, similarly the word *dur* is used for both "hard" problems and "hard" objects, and *grave, lourd,* and *pesant* are used both for things that are literally heavy, and so difficult to carry, and for abstract things that are difficult to cope with.

The same or similar 'heavy'~'difficult' polysemy can be found in many unrelated languages around the world: for example, Latin (*gravis*), German (*schwer*), Old Irish (*tromm*), Mandarin (*zhóng*), Arabic (*thaquil*), Hausa (*naunaya*), and Hawaiian (*kaumaha*).

Similarly, for talk about everyday plans and events, we can use the basic vocabulary of space and motion (*come, go, near, far, slow, fast*). Thus, people "set goals," "pass milestones," and "overcome obstacles"; and projects "move forward" or "grind to a halt," but they always "come to an end." Moving around in physical space is one of the first and most important sorts of purposeful activities that humans ever experience, and it seems to provide a useful and adaptable template for thinking about plans and purposes in general.

Often, if not always, the metaphors in a language extend the use of a lexical field from relatively vivid and concrete aspects of experience (like lifting and carrying heavy objects) to more abstract sorts of experiences (like making plans or solving problems) or to domains that are otherwise hard to talk about or imagine (like time and emotion). This appears to be a robust and consistent feature of the way metaphors are used in everyday language.

Partly because of this, metaphorical expressions often seem like a vivid or colorful way of expressing an otherwise plain idea. But there are many pretty basic ideas that are difficult to think about at all without metaphor. Thus, we tend to use words with basically spatial and physical entailments – e.g., *high/low, rise/fall, peak/abyss* – for speaking and reasoning about very basic, but relatively abstract notions like "happy" and "sad," "good" and "bad," and "more" and "less."

YouTube video by Phloneme: The Conceptual Metaphor

In these and many other similar cases, the metaphorical use of language seems to reflect a general pattern of thought, that is, a **conceptual metaphor** in which a complex semantic frame is structured, in whole or in part, by analogy with another semantic frame. People tend to use language metaphorically precisely because they think metaphorically in general (see Stop and Reflect 7.11).

Sometimes what starts out as metaphor or metonymy can become a conventionalized sense of a word. If an expression gets used in a way that consistently triggers a metaphoric or a metonymic inference, that inference can become so automatic that it will no longer depend on context to be understood. At that point, semantic change has occurred.

STOP AND REFLECT 7.11 **METAPHOR AND METONYMY**

You can reinforce your understanding of conceptual metaphor and metonymy by watching short videos on the YouTube channel "Phloneme." Find it by typing "Phloneme conceptual metaphor video" into your browser. It is followed by a second video on metonymy.

CHAPTER SUMMARY

Linguistic signs are prompts to imagine and attend to the world in particular ways. The semantic content of a linguistic expression – its sense – is always only a starting point for the process of interpretation, but it is also what allows us to use language to express our thoughts and to affect the thoughts of others in the first place.

The core sense of any expression, whether a word or a phrase or a larger discourse, typically includes both some propositional content and some constraints on the way that content is construed. An expressed proposition may thus be foregrounded as part of what is said, or backgrounded as a presupposition. In either case, what is actually encoded by an expression is always much less than what it is likely to communicate in context. A theory of semantics needs to explain how people represent these encoded contents and how the encoded meanings of complex expressions are built up from the meanings of their parts. The next chapter turns to pragmatics, and the ways speakers and hearers actually use expressions to express themselves and influence others.

TEXTBOX 7.13 **GLOSSING CONVENTIONS USED IN THIS CHAPTER**

Convention	Meaning	Convention	Meaning
AUX	auxiliary	PL	plural
DET	determiner	PST	past tense

SUGGESTIONS FOR FURTHER READING

Croft, **William**, and **D. Alan Cruse**. 2003. *Cognitive linguistics*. Cambridge University Press.

Offers a detailed theory of construal operations and the ways they can be encoded in linguistic constructions.

Cruse, **Alan**. 2011. *Meaning in language: An introduction to semantics and pragmatics*, 3rd edn. Oxford University Press.

Provides a broad introduction to linguistic meaning, with very useful discussions of the semantics–pragmatics distinction, lexical semantic relations, polysemy and the problem of delimiting senses, and grammatical semantics.

Goddard, **Cliff**. 2011. *Semantic analysis: A practical introduction*, 2nd edn. Oxford University Press.

This is an accessible book-length textbook on semantics, illustrated with examples from languages from around the world.

Lakoff, **George**, and **Mark Johnson**. 1980. *Metaphors we live by*. University of Chicago Press.

A brief yet revealing introduction to the phenomena of conceptual metaphor and metonymy.

Langacker, **Ronald W.** 1991. *Concept, image, symbol: The cognitive basis of grammar*. Berlin and New York: Mouton de Gruyter.

A classic work on the role of semantic imagery in grammar, including essays on case, agreement, the English passive, the Yuman auxiliary, and locative expressions in Cora.

Saeed, **John.** 2015. *Semantics*, 4th edn. Chichester, West Sussex: Wiley Blackwell.

This textbook provides a broad introduction to the field that balances theoretical and empirical findings.

EXERCISES

1. **a.** Which of the following images placed on road signs is an **index**, which is an **icon**, and which is a **symbol**?

(i)  (ii) 

(iii) 

b. The following two signs express the same semantic content (the first is from Thailand and the second is from South Korea). Which do you find easier to interpret? Discuss your response in terms of the distinction between index, icon, and symbol.

(i)  (ii) 

c. In the United States, the following road sign expresses the same meaning as the two road signs in (b). Is this an icon, an index, or a symbol? Do you think drivers from Thailand and South Korea, who are accustomed to the signs in (b), find this sign easy or difficult to interpret? Explain your answer.

2. The words in each of the following lists have the same denotations but differ in their connotations. For each list, state which term is the most neutral and describe the connotations for each alternate term. Do you attribute the connotations to differences in register, emotive content, perspective, or something else?

a. *She has three kids/offspring/children/rugrats/youngsters.*
b. *Last night, I went to sleep/crashed/retired at 11.*
c. *The crowd was immense/prodigious/huge/mammoth.*
d. *Chris failed/flunked/bombed the exam.*
e. *She entered/went in/came in the building.*

3. List the entailments of each of the following verbs, then argue for your analysis by using the contradiction test. In addition, for each verb identify one meaning commonly associated with it, which is not, in fact, an entailment. Provide evidence to support your claim. (See Section 7.4.)

a. *kick*
b. *submerge*
c. *smile*
d. *chop*
e. *forget*

4. The contradiction test allows us to figure out which, if any, parts of an expression's sense are strictly entailed and which, if any, are associated with the category without being strictly necessary. Consider at least two words from each of the following lists (i.e., two nouns, two verbs, and two adjectives), and for each try to determine the roles that prototypes and entailments have in their meanings. Base your reasoning on a few constructed (or found) example sentences illustrating what you take to be a normal use of the word in one of its basic senses. Be sure to consider for each word both its precise entailments (if any), and just what sorts of information one should include about it in a dictionary.

N	*horse*	*hammer*	*prize*	*bedroom*	*sausage*
V	*stampede*	*steal*	*admire*	*wrestle*	*memorize*
Adj	*bright*	*happy*	*ancient*	*slippery*	*spoiled*

5. The *American Heritage College Dictionary* (3rd edn., 1993) offers the following five senses and sub-senses for the noun *window*.

i. a. An opening constructed in a wall or roof that admits light or air to an enclosure and is often framed and spanned with glass mounted to permit opening and closing.
b. A framework enclosing a pane of glass for such an opening; a sash.
c. A pane of glass or similar material in such a framework.
ii. a. An opening that resembles a window in function or appearance.
b. The transparent panel on a window envelope.
iii. The area or space behind a window, especially at the front of a shop.
iv. A means of access or observation.
v. An interval of time during which an activity can or must take place.

Use an online corpus – either the BNC (www.natcorp.ox.ac.uk/), or the COCA (http://corpus.byu.edu/coca/) – to search for the word *window*. Find fifteen to twenty examples of uses of the word *window*, and try to sort your data according to which sense or sub-sense is being used. Can you find cases where a single instance of the word *window* is compatible with more than one of these senses? Can you find uses that these definitions do not seem to cover? And finally, can you think of anything that clearly is *not* a window that one of these definitions might include?

6. Think of two words that are somewhat similar in meaning, but for which you have some intuition about what the difference is (example *cup* and *mug*).

i. Write down your own characterization of what differentiates the two.
ii. Ask three other people what they think the difference is, and write down a short summary of their responses.
iii. Look up the definitions in at least two different dictionaries.
iv. Discuss the outcomes of your study. What do you consider the core semantic content of each lexeme? What is part of our encyclopedic knowledge? What insights did the similarities and differences across speakers provide to your study?

7. Match the lexical pairs below with the appropriate semantic relations, (a–f). Give evidence for your claims, and briefly discuss one or more examples if they pose any difficulties for analysis.

Semantic relations:

a. synonyms
b. hyponyms/hypernyms
c. complementary antonyms
d. contrary antonyms
e. reversive antonyms
f. converse antonyms

Lexical pairs:

husband and *wife*	*rich* and *poor*	*long* and *short*
real and *genuine*	*car* and *sedan*	*say* and *deny*
begin and *end*	*brother* and *sister*	*true* and *false*
cruel and *kind*	*bird* and *penguin*	*iPad* and *tablet*
hard and *soft*	*hammer* and *tool*	*pure* and *sullied*
couch and *sofa*	*sad* and *grim*	*girl* and *boy*

8. Consider the likely referents of the word *school* in each of the following sentences: for example, in (a) the word *schools* refers to physical buildings or campuses, but in (b–f) it refers to various kinds of social constructions. Use the substitution test to identify and describe the range of referents covered by the word *school* in these sentences. What sorts of semantic and pragmatic relationships (propositional, metaphoric, metonymic, etc.) can you observe among the uses of the word *school* here? How can we best explain the wide range of referents this word allows? Are there multiple senses of the word involved, or one very vague sense, or are there other ways to explain this data?

a. *Several schools were damaged by the tornado.*
b. *Sally and Joey went to the game to root for their school.*
c. *After the game, the whole school gathered to celebrate the victory.*
d. *The school is considering changes in the code on academic honesty.*
e. *I can't make it for lunch. I have school from 10 to 4 on Wednesday.*
f. *School sucks.*

9. For each of the following lexical items, try to determine (a) what each item designates (its profile) and (b) what sorts of background knowledge it presupposes (its frame). Discuss any problems you may find in drawing these distinctions.

denial	*departure*	*apology*	*gallop*	*tip*
dent	*pedal*	*fish*	*mountain*	*bicycle*
hammer				

10. Consider the well-known script, the Wedding Frame. Make a list of ten linguistic expressions that are conceptually based in this frame. Construct four sentences that depict a single situation within this frame, but which vary in their profiles and construals. Are the elements in the Wedding Frame likely to be universal (i.e., found in all cultures across the world) or likely to vary? What about the Commercial Event Frame discussed in Section 7.9? Explain your position.

11. In the following examples, each of underlined lexemes is polysemous. State whether the polysemy is based on metaphor, metonymy, or both.

a. *He is feeling <u>blue</u>.*
b. *The music was <u>hot</u>.*
c. *She <u>ran</u> the election flawlessly.*
d. *The <u>university</u> filed a lawsuit.*
e. *She came to the <u>foot</u> of the hill.*
f. *He <u>backed</u> into a fence.*
g. *She <u>spent</u> time getting to know him.*

8 Pragmatics

Inference for Language

KEY TERMS

- Context
- Pragmatic inferences
- Gricean Maxims
- Particularized conversational implicatures
- Entailments
- The Principle of Relevance
- Contextual implications
- Explicature
- Semanticization

CHAPTER PREVIEW

Semantics is a major way in which meaning is conveyed through language, but not all meaning is tied directly to linguistic forms. Some of the meaning conveyed through language comes from interpretations based on the broader social, cultural, and interactional contexts; the study of such interpretations makes up the field of pragmatics. Pragmatics is what makes natural discourse coherent and relevant. The primary role of pragmatic theories is to explain pragmatic inferences, which are how interlocutors manage to convey much more than their utterances explicitly encode. In producing discourse, speakers routinely provide information that allows addressees to make pragmatic inferences. Addressees base these inferences on contextual assumptions that come in part from the content of the speakers' words, and in part from extralinguistc sources. These processes are informed by some overarching pragmatic principles, which will be discussed throughout this chapter.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **discuss basic concepts in pragmatics, such as context, contextual assumptions, and pragmatic inferences of various sorts (e.g., particularized conversational implicatures, contextual implications, and explicated inferences);**
- **explain in what ways languages are linguistically underdetermined and the role of pragmatic inferences in making propositions specific and understandable;**

- **compare and contrast the two leading pragmatic theories: Grice's theory and Sperber and Wilson's theory;**
- **perform pragmatic analyses.**

8.1 Pragmatics

Consider the following exchange between Maya, a five-year-old, and her mom:

(1) Maya: *Aw, they always change it!*
Mom: *Really?*
Maya: *What, would I lie to you?*

SIDEBAR 8.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quizzes, and an interactive quiz on entailments and implicatures.

Maya misunderstands her mom, taking her *really?* to indicate that her mom doubted her. But what is it that Maya misunderstands? Clearly it's not the linguistic meaning of *really?* ('is that true?'). Rather, Maya is missing the **pragmatic interpretation** of *really?* that her mom intended: to express surprise, rather than to question factuality. Missing this bit creates a communication break between mother and daughter.

Imagine the very same exchange, but with Maya as an adult, who correctly interprets her mother's *really?* as indicating surprise. In this case, Maya's response would be taken as joking. Surprisingly perhaps, the source for this very different interpretation of *really?* is exactly the same: while the young Maya is unaware of the pragmatic interpretation of *really?*, the joking Maya pretends it isn't there. This is not something she could do if she were limited to the linguistic meaning of the expression. There is a difference between linguistic meanings (observed by both versions of Maya) and pragmatic interpretations (unacknowledged, for different reasons, by both Mayas). Pragmatic interpretations play a fundamental role in interaction and communication. What are pragmatic interpretations? How are they derived? How can we tell a pragmatic interpretation from a semantic one? Should we? These are questions that will be addressed in this chapter.

The field of **pragmatics** examines how context supports our use and interpretation of linguistic expressions. Language is not produced in a vacuum. Linguistic forms must routinely be connected to the interactional, physical, cultural, and social environment in which they are produced. Linguistic behavior is grounded in a particular **context**, which surrounds, informs, underlies, and shapes a linguistic event. For example, a particular conversation will have a physical context (where the conversation takes place), a social context (the social relationships of the participants), a cultural context (shared knowledge about the culture in which the participants are based), and an encyclopedic knowledge context (specific assumptions about the world shared by speakers and addressees). A particular utterance within a conversation will also have a discourse context, or what was said before the utterance, prompting the speaker to make the utterance relevant and shaping the form it takes.

Pragmatic interpretation is complicated because context contains a vast number of assumptions. Speakers must identify just the bits of context that are relevant on a particular occasion. ***Pragmatics refers to the cognitive ability to draw contextually plausible inferences, which complement linguistic meanings***. Pragmatic theories explain how we use our inferential abilities to efficiently identify and interpret the relevant context when communicating. This includes how we are able to infer the intended meaning of a linguistic expression, even when that meaning is not made fully explicit. In this chapter, we will discuss pragmatic theories, different types of pragmatic inferences, and the division of labor between semantics and pragmatics in utterance interpretation.

8.1.1 Pragmatics as Context-Dependent Inference Drawing

When a speaker communicates with you, you perform a semantic analysis of their words. But it is not enough to just add up the fixed meanings encoded by linguistic expressions in a compositional manner. As we have seen in Example (1), using and interpreting language crucially relies on something in addition to – and quite different from – the mastery of semantics. Utterance meanings are more than the sum of their linguistic parts. The linguistic system builds on a highly developed inferential system, without which linguistic interactions would not be possible. This **extralinguistic competence** is pragmatics.

STOP AND REFLECT 8.1 **BROADER MEANINGS IN A PUBLIC SERVICE AD**

To appreciate the pervasiveness of pragmatic inferences, consider the following advertisement of the American Lung Association, which was seen on a bus in Santa Barbara, California, in February of 2002:

(2) *Asthma is on the rise. Please double your efforts. Support Christmas Seals.*

What do you think are the communicative goals of this ad? What information is encoded explicitly in the semantics? What information must be "filled in" by the process of pragmatic inference? Give this some thought before reading the following paragraphs.

Example (2) in Stop and Reflect 8.1 should have led you to consider a number of questions: What is the connection between asthma being on the rise and doubling our efforts? Which efforts are those? Somehow we need to infer that the efforts are related to the previously mentioned asthma. Since asthma is considered undesirable, we infer that probably what is referred to are efforts toward eliminating or reducing asthma or its effects. Having figured this out, we immediately face another puzzling question: How is supporting an organization called Christmas Seals relevant to fighting asthma? Once again, we need to rely on our general knowledge (here, very much culture-dependent) and access the fact that Christmas Seals is a charity that sells stickers used on Christmas cards, and whose profits support fighting lung diseases. In other words, the rather short discourse in (2) is actually interpreted as something like:

(3) *Asthma is on the* rise. [**Therefore**,] *please double your efforts* [**to fight it**]. *Support Christmas Seals* [**because they fight asthma**].

Example (3) is not only clumsy; it feels redundant. Since the intended addressees (Americans) can infer the boldfaced information easily, stating it explicitly in this manner

is unnecessary. Speakers routinely rely on addressees' cognitive abilities to draw such ad hoc pragmatic inferences. With the help of pragmatics, language production and processing are made more efficient, and thus take less time and effort.

Human languages are linguistically underdetermined, that is, they can never encode everything that we actually intend our addressees to understand as the message of our utterances. This is why the drawing of pragmatic inferences is critical in making language work as a communicative system. Consider again Example (3). Although it seems a much more specific version of (2), it still does not explicitly encode every piece of intended information. The following added interpretations (underlined) are also part of the message contained in the advertisement in (2):

(4) *Asthma* [*in the US*] is [*recently and projected to be in the future*] *on the rise* [*(i.e., more people now suffer from it)*]. [**Therefore**,] *please double your efforts* [**to fight it** (*and make an effort to fight it even if you haven't in the past*)]. *Support Christmas Seals* [**because they fight Asthma** (*and this will constitute YOUR effort in fighting Asthma*)].

And even (4) does not exhaust all the information that goes into interpreting (2). How much is asthma on the rise? We infer that it is rising significantly. How should the addressee support Christmas Seals? Presumably, by buying many Christmas Seals, which support the organization financially (rather than morally, for example). We could enumerate more and more hidden assumptions. There's certainly a lot of interpretation that doesn't meet the semantic eye. It is up to pragmatics to provide it. But how?

8.2 Pragmatic Theories

Pragmatic interpretations are real and pervasive, but they seem to require mind reading. As difficult as that sounds, this 'mind reading' is a necessary skill for linguistic communication. Psycholinguists have demonstrated that babies develop the skill of reading communicative intention around the age of one, and that this skill is a prerequisite for language learning. The cognitive processes that humans use to determine communicative intention and understand the full intended meaning of utterances are the domain of pragmatic theory.

We here briefly discuss two such theories: the Gricean Conversational Maxims (Grice 1989) and the Principle of Relevance (Sperber and Wilson 1986/1995). Each theory helps us understand how addressees derive the inferred interpretations exemplified above. The basic idea is that we have certain expectations for how natural discourse must proceed, e.g., it should be coherent, relevant, etc. The task of meeting these expectations is shared between explicit linguistic expressions and implicit assumptions. Semantics accounts for explicit aspects, pragmatics for implicit aspects.

SIDEBAR 8.2
See Section 14.5.3 for a description of the development of early pragmatics in children.

8.2.1 The Gricean Conversational Maxims

Grice pointed out that ***discourse is a cooperative endeavor*** (this is his Cooperative Principle). In order to be cooperative participants in discourse, we must abide by the following four maxims (referred to as **Grice's Maxims**).

- The **Quantity Maxim**: speakers must be informative, that is, provide just enough information, neither too much nor too little.
- The **Quality Maxim**: speakers must only assert truthful and well-supported information.
- The **Relevance Maxim**: speakers must be relevant.
- The **Manner Maxim**: speakers must be brief, clear, nonambiguous, and orderly.

Consider the example in (5):

(5) Roy: … *It's dark, how will we see what we're eating.*
Marilyn: … *Candles*. (SBC: 003)

SIDEBAR 8.3
Many of the examples in this chapter are taken from published corpora of natural English conversation. The examples cited as SBC come from the Santa Barbara Corpus of Spoken American English; those cited as LSAC come from the Longman Spoken American Corpus. Numbers refer to the corpus file number from which the excerpts are taken.

Note that Marilyn's response is just informative enough: it's relevant and short, and we assume she's sincere. It thus obeys all the Gricean Maxims. Note, though, that we must still draw a trivial inference, that the candles will be lit, if the interlocutors are to see what they're eating. In other words, in order to see Marilyn's response as abiding by Relevance, we need to add to her explicit message (candles) an implicit assumption (they will be lit).

Inferences such as these, as well as those specified for (2) above and others below, are called **particularized conversational implicatures** by Grice (henceforth, **implicatures**). Implicatures are inferences: the speaker intends the addressee to infer them based on a set of contextually available assumptions. Implicatures can be contrasted with logical inferences (or **entailments)**. To see the difference between entailments and implicatures, consider (6):

SIDEBAR 8.4
For an introduction to entailments, see Section 7.4.

(6) **a.** *He kissed her on the neck.*
b. *He kissed her.*

In a plea bargain case negotiated in Israel in June of 2007, the defendant's lawyers got the prosecutor to charge him with (b) rather than with (a), although (a) is a faithful description of what happened. Now, of course if 'x kissed y on the neck' then 'x must have kissed y': (a) ***entails*** (b) because if (a) is true, so must (b) be true. Note that the opposite does not hold necessarily. (b) does not entail (a), because he may have kissed her on the cheek, in which case it's true that he kissed her, but it's not true that he kissed her on the neck. Now, why did the lawyers prefer the charge in (b) over (a)? Because of what (a), but not (b) ***implicates***, namely that the kiss was of a sexual nature. Note that this is not a necessary conclusion, though. Perhaps he intended to give her a fatherly kiss on her cheek, but she moved and the kiss accidentally ended up being on the neck, although no sexual intentions were involved. So an important difference between implicatures and entailments is that ***whereas entailments are logically necessary inferences, implicatures are not; they are only plausible***. Thus, if (a) is true, then he necessarily kissed her (an entailment), but it's plausible but not necessarily true that the kiss was a sexual act (the implicature).

Interactive quiz on entailments and implicatures

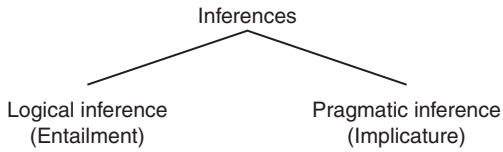


Figure 8.1 Logical and pragmatic inferences

The set of inferences can be divided into two classes: *entailments* (inferences that speakers make based on logical reasoning) and *implicatures* (inferences that are plausible but do not necessarily follow), as diagrammed in Figure 8.1.

STOP AND REFLECT 8.2 **LOGICAL VERSUS PRAGMATIC INFERENCES**

For each of the following statements, determine whether they constitute a logical inference (entailment) or a pragmatic inference (implicature) based on the sentence *John drove his car to the farmer's market Saturday*. You can find the answers on the HLW website.

a. *John shopped at the farmer's market Saturday.*
b. *John was at or near the farmer's market on Saturday.*
c. *John owns a car.*
d. *John can drive.*

Now, we've seen that implicatures were needed in (5), even though Marilyn observed the Gricean Maxims. On other occasions, we cannot follow all of Grice's Maxims, because they happen to clash. This is another impetus for implicature generation. Suppose someone asks you a question. The Quantity Maxim prompts you to supply a fully informative answer. But what if you can't, because you don't have all the relevant information, or because you're not sure? Observing Quality (truthfulness) forbids you to say something false or unreliable. Look what Rebecca does under such circumstances (Rebecca is a prosecutor and *he* is a defendant in a court case):

(7) June: *Is he gonna take the stand?*
Rebecca: (H) *He says so* (SBC: 008).

Notice that Rebecca does not explicitly say "yes" (the most informative answer in terms of Quantity). Instead, she provides the evidence she has for an affirmative answer, not wanting to commit to that which she is not sure of. By presenting just the evidence, she lets June infer the likelihood of the man taking the stand. Rebecca violates Quantity, but obeys Quality. The implicatures are: 'maybe he will take the stand'; 'Rebecca is not in a position to know for sure.' They are based on the flouting of Quantity, which Rebecca cannot observe.

Grice's most intriguing observation is that we sometimes fail to follow one of the maxims not because we can't, but because we choose not to. Speakers might choose to violate one of the maxims in order to generate an implicature. Let's examine a few examples:

(8) **a.** Hebrew (Voice of Israel radio, referring to courtroom testimony)

shamati	*et*	*ha=girsaot*	*ha=shonot*	*shel*
hear.PST.1SG	ACC	DEF=version.PL	DEF=different	of
adam	***ben***	***shmonim***	***ve=tesha.***	
person	of	eighty	CONJ=nine.	

'I heard the different versions (testimonies) of an **89-year-old person.**'

b. Hebrew

Gym teacher:

hitayaft	*klara?*
become.tired.PST.2SG.F	Clara?

'Did you get tired, Clara?'

Clara:

Lo	***nora***
NEG	awfully

'Not too much.'

Gym teacher:

az	*kcat*	*klomar*
so	a.little	in.other.words

'So, a little in other words.'

c. Hebrew

ze	*she=nolad*	*li*	***nexed***	***lo***
PROX.DEM	that=be.born.PST	to.1SG	grandson	NEG

omer	*she=ani*	***savta***
say	that=1SG	grandmother

'The fact that **I have a grandson doesn't mean I'm a grandmother**.'

d. Hebrew

M	***yesh***	***lax***	***kalba***	***xola***	***ba=bayit!***
M	exist	to.2SG.F	dog.F	sick.F	at.DEF=home

'M, **you have a sick dog at home!**'

e. J: *How is your tomato?*
M: *It's little ripe.*
J: *Yeah, had to* ***edit it****.*

Examples (8a)–(8e) each manifest some maxim violation. Since the speakers are nonetheless seen as cooperative, they are taken to have intentionally violated the maxims in order to generate a variety of implicatures. Consider (8a), which refers to the testimony of a person in a court of law. Is the age of a witness relevant? Not in most cases. But here the speaker is trying to tell us more than 'I heard the different versions (testimonies) of a person,' which

would have been informative enough under the circumstances. In specifying the age of the person, the speaker provides too much information (contra the Quantity Maxim), thereby implicating that an 89-year-old person, who provides different versions of testimony about some event, is 'not trustworthy.' This inference is plausible, but does not follow necessarily; therefore it is a particularized conversational implicature.

Now consider Example (8b). Here, too, Quantity is breached, but in a different way. Clara's response is not informative enough. To say that she 'did not get awfully tired' doesn't say anything about how tired she did get. Logically, it even leaves open the possibility that she did not get tired at all ('I didn't get awfully tired; I didn't even get a little tired'). In the context of the utterance, however, the speaker generates the implicature that the teacher spells out in the next turn.

In (8c) we have a breach of Quality. A woman who has a grandchild is by definition a grandmother. Obviously, the speaker is therefore a grandmother. Denying this fact appears to be untruthful, and the sentence seems inherently contradictory. Implicatures are crucial for understanding this, as usual: the speaker, though a grandmother, feels and acts like a young woman. By denying that she is a grandmother, she is implicating a rejection of the (old) image of a grandmother.

Example (8d), which illustrates a violation of Relation, was uttered at a faculty meeting in which the chair, M, had announced that the meeting should be as brief as possible because she had a sick dog to attend to. When M herself seemed to go off topic and cause the meeting to drag on, her colleague produced the utterance in (8d). Although this utterance was irrelevant with respect to the department business being discussed, the intended implicature was, 'stick to the agenda!'

Finally, (8e) shows a Manner violation. It's not immediately clear what it would mean to *edit a tomato*. A speaker abiding by Manner would have used more conventional means to express the same meaning (by saying, for example, *cut out parts of it*). But J chooses an innovative (metaphorical) combination, playfully implicating a similarity between language editing and cutting a tomato.

In all of these cases, the speaker's blatant violation of some maxim is intended to generate a particularized conversational implicature. What is the status of these implicatures? Why don't the speakers express what they mean explicitly? (e.g., "I'm not old"; "Cutting a tomato is like editing a paper"). We have mentioned efficiency in connection with the inferences in (2), and the same applies to (5). But efficiency doesn't seem to be the motivation in the examples in (8). The speakers in (8) aim to make use of the special cognitive and discoursal status of pragmatic inferences.

SIDEBAR 8.5
For an introduction to **propositions**, see Section 7.4.

An important difference between semantic meanings and implicatures is that ***implicatures are external to the linguistic meaning***: the proposition explicitly expressed and the implicature generated have separate contents and separate conditions under which they are true. The truth or falsehood of the explicit message of *I heard the different versions (testimonies) of an eighty-nine-year-old person* is independent of the plausibility of the implicature that 'an eighty-nine-year-old person is not reliable.' Because of this, implicatures do not affect the truth conditions of the proposition that triggers them. This is why, unlike entailments, ***implicatures are cancelable***. Consider Example (9), taken from a bumper sticker:

(9) *I don't suffer from insanity.*
I enjoy every minute of it.
Based on the first sentence in (9), the reader would reason that the author of these words is implicating that he or she is mentally healthy; however, the second utterance cancels this interpretation, rendering the implicature (that the author is mentally healthy) implausible. This is what it means for implicatures to be cancelable. Contrast (9) with the constructed variant in (10). Here the second sentence denies the *explicit* meaning ('not suffering from insanity') and the result is an irresolvable contradiction.

(10) ?? *I don't suffer from insanity. I suffer from insanity.*

Cancelability is one of the ways that semantic meanings and implicatures differ. Only implicatures are cancelable.

Another way in which implicatures differ from explicit semantic meanings is that ***implicatures are only indirectly communicated***. They are not conventionally and invariably tied to specific linguistic expressions, for they are context-dependent. Compare the use of *really* in (11a) to that in Example (1), here repeated as (11b).

(11) **a.** A: *Because nobody's used to rain, it's like schools close.*
B: *Really?*
A: *Well, I mean, I'm exaggerating here.* (LSAC: 1118–01)

b. Maya: *Aw, they always change it!*
Mom: *Really?*
Maya: *What, would I lie to you?*

Unlike in (11b), *Really?* is used in (11a) to explicitly question the truthfulness of A's utterance. Since the same expression (*really?*) is involved in (11a) and (11b), it must be the different context which is responsible for the occurrence or nonoccurrence of the implicature.

We have seen that Grice's Maxims set up norms, which account for discourse coherence and which guide interlocutors in making pragmatic interpretations. We next review an alternative theory for discourse coherence, and therefore also for how pragmatic interpretations are made.

8.2.2 The Principle of Relevance

Sperber and Wilson (1986/1995), in revising Grice's Maxims, have proposed to replace Quantity, Relation, and Manner with a single cognitive principle: The **Principle of Relevance**. (They also dropped the Quality Maxim altogether.) They argue that people are automatically geared toward searching for maximally relevant information, and that linguistic acts specifically come with a presumption of relevance.

For an utterance to be Sperber-Wilson *Relevant*, it must achieve some cognitive effects. Simply put, it must (attempt to) induce some change in the addressee's cognitive state (e.g., by adding or eliminating assumptions that the addressee holds). However, not every change is Relevant. Imagine that Maya addressed her first utterance in (1) to you, rather than to her mother. Her assertion that 'they always change it' would constitute new knowledge for you. This would no doubt change your cognitive state, but this utterance is just not relevant

enough because we are not told who *they* are, what *it* is, and why all this matters. For Relevance Theory to account for how natural discourse proceeds, it must define "Relevant cognitive effects" more narrowly:

- Relevant cognitive effects must be contextual implications, i.e., inferences made based on (1) the content of the utterance combined with (2) available contextual assumptions.
- There must be a sufficient number of contextual implications (in order for these implications to have a Relevant cognitive effect).
- Deriving the cognitive effects (i.e., making the inferences) must involve the most minimal processing effort.

Let's take these three conditions one by one. First, for an utterance to constitute a Relevant contribution, it must combine with contextual assumptions to yield further contextual implications. Such contextual assumptions may have been mentioned in the preceding discourse, or they may have to be accessed from our encyclopedic knowledge (see Figure 8.2).

Now, the reason why Maya's utterance in (1) couldn't be Relevant to you is that it's hard to imagine what contextual assumptions you could bring to bear on that proposition, such that together with the content, they would yield some implications. You and Maya do not share sufficient context to enable this. Since no contextual assumptions can be drawn here, the utterance is not Relevant (for you) in the Sperber–Wilson sense.

Let's contrast this with the American Lung Association ad in Example (2). In that case, we can combine the explicit proposition (*asthma is on the rise*) with a background assumption (from our general knowledge) that 'asthma is dangerous,' to yield contextual implications such as 'It is alarming that asthma is on the rise'; and 'We should do something to fight asthma.' Since the combination of the content of (2) with contextual assumptions yields contextual implications, the utterance is Relevant. This definition then accounts for our intuitive feeling that relevance entails some connection between an utterance and its context. This is shown in the diagram in Figure 8.2.

Second, regarding the number of contextual implications, ***the more contextual implications there are, the higher the Relevance*** of the utterance. Comparing (6a) and (6b), the former (*He kissed her on the neck*) is more Relevant, for it gives rise to an additional contextual implication that (6b) doesn't, namely that the kiss was sexual. This requirement, however, specifies only that there be a sufficient number of contextual implications, so (6b) may very well be Relevant enough in many contexts.

Third, regarding processing effort, pretend now that (2) appeared on a bus in Warsaw. Relevance Theory offers an explanation for why the same discourse might not be Relevant/

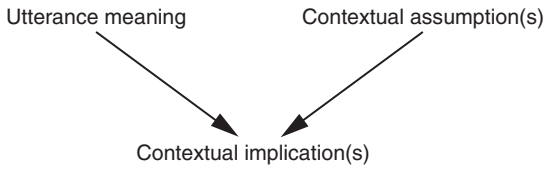


Figure 8.2 The derivation of contextual implications

appropriate when in a different context. Cultural differences translate to different contextual assumptions. Polish readers would be able to process the first two sentences, but they would be baffled by the third. Unlike most American addressees, who can easily access the necessary contextual assumptions immediately, non-Americans, who do not know what Christmas Seals are, would have to improvise. They might (correctly) assume that Christmas Seals is an organization that fights asthma. But relying on the Polish addressee to come up with such a culturally foreign contextual assumption as a premise for some conclusion is risky. While speakers do sometimes force addressees to generate contextual assumptions they cannot retrieve from their general knowledge store, such processes are bound to slow the addressee down. This is why Sperber and Wilson's definition of Relevance discourages such uses.

The inappropriateness of the asthma ad in Warsaw is accounted for by defining Relevance as requiring the speaker to balance between contextual effects and processing costs. Although all other things being equal, the more contextual effects, the more Relevant an utterance is, at the same time, the harder it is to derive some contextual implication, the less Relevant that interpretation is. In other words, although we can always add more and more contextual assumptions in order to derive more and more contextual implications, **Optimal Relevance** requires a balance between contextual effects and processing effort. Some contextual assumptions are not easily accessible to us. Others are highly accessible. An utterance that depends on the retrieval of highly accessible assumptions requires less effort. Relevance Theory specifies that the effort required of the addressee be minimal: for an utterance to be Optimally Relevant, a sufficient number of contextual implications must be derivable by the addressee, and at a minimal processing effort (see Figure 8.3). The asthma ad on a Warsaw bus would not be Optimally Relevant, because the processing effort would not be as minimal as it could have been (had another sentence explained what Christmas Seals was).

Next consider Example (12).

(12) Jamie: *Aren't you guys gonna stick up for me? and beat up on him or something?*
Miles: ***He's bigger than I am***. (SBC: 002)

When Jamie is (jokingly) asking her friends to beat up on her husband, Miles's relevant response (the contextual implication from his actual utterance) is that 'he won't beat up on the husband.' The interlocutors can reach this conclusion based on an easily accessible contextual assumption, 'it's not advisable to try to beat up on a guy who's bigger than you, because most likely you'll be beaten badly.' This contextual assumption is much easier to retrieve – so requires less processing effort – than the assumption that Christmas Seals is an organization that fights asthma (for the Polish addressee).

In sum, both the Principle of Relevance and the Conversational Maxims explain what makes discourse appropriate and coherent. There is an intimate connection between ***discourse appropriateness***, the accessing of ***contextual assumptions***, and ***pragmatic inferences***. Both theories account for the central role of pragmatic inferencing in communication. The total take-home message of some utterance is its ***conveyed meaning***,

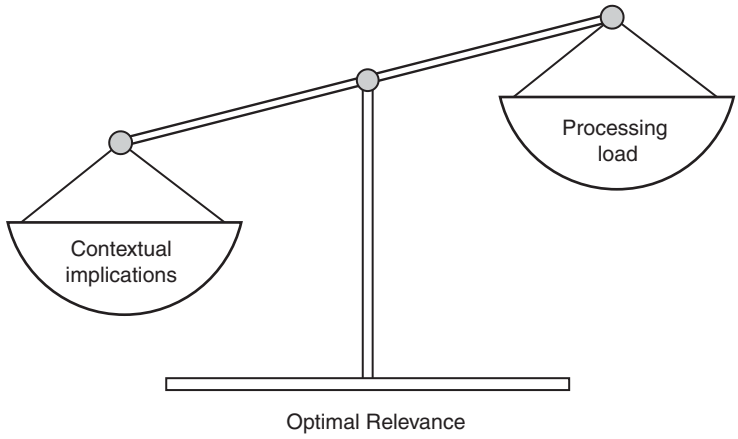


Figure 8.3 Balancing for Optimal Relevance

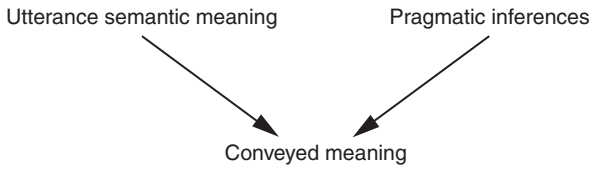


Figure 8.4 Deriving the conveyed meaning

a combination of the semantic meaning and the pragmatic inferences intended by the speaker (see Figure 8.4).

8.2.3 Different Pragmatic Interpretations for Different Purposes

So far we have only assumed a distinction between semantic meanings and pragmatic meanings (implicatures). But pragmatic meanings are not all of one stripe. Consider again Maya's first utterance in Example (1):

(1) Maya: *Aw, they always change it!*

What is *it*, and who are *they*? As outsiders we do not know. In order to determine the explicit message that Maya is communicating, her mother must infer the referents of these pronouns (based on shared contextual assumptions). ***Pragmatic inferences are often required to determine even the explicit message of an utterance***, and not just the indirect implicatures intended by the speaker. The underdetermined linguistic meaning must often be developed by pragmatic inferences to make it a complete proposition, sufficiently specific and understandable.

The linguistic code enriched by such pragmatic inferences is called (by Sperber and Wilson 1986/1995) the **explicature**. The pragmatic inferences involved in understanding the explicature are then **explicated inferences**. We can illustrate the relationship of semantic meaning, explicated inferences, and the explicature as in Figure 8.5.

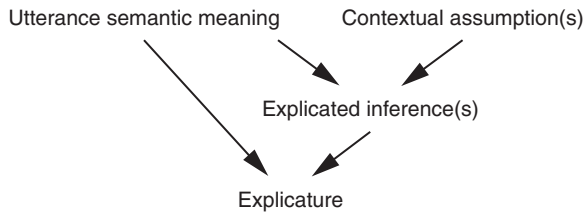


Figure 8.5 Deriving the explicature

Maya's first utterance in (1) is not the only case where an explicit message is incomplete by itself. On the asthma ad in (2) the linguistic expression *Double your efforts* makes no sense if one limits oneself to the semantic meaning alone. Double your efforts for what? Given the contextual assumptions that are salient here, we can derive an explicated inference that the efforts are aimed at fighting asthma. The addressee thus derives the explicature 'Double your efforts to fight asthma,' by combining the linguistic meaning with the explicated inference (see Figure 8.6). Without the added inferred information, the utterance would be conceptually incomplete. Unlike Grice, who considers practically any pragmatic inference to be an implicature, Sperber and Wilson distinguish between implicatures and explicated inferences.

Pragmatics has a far-reaching role in human communication, far more than first envisioned: it is not as if linguistic expressions always provide the main message while pragmatic inferences provide only additional implicit and secondary interpretations, as in, e.g., (8). Rather, some pragmatic inferences (explicated ones) are an inherent part of the explicit message intended by the speaker. This is the case for *double your efforts* in (2).

According to Relevance Theory, it is the explicature (rather than purely the semantic meaning) that combines with contextual assumptions to yield implicatures. In interactional terms, ***it is the explicature that counts as the directly relevant contribution*** (rather than the incomplete linguistic meaning). To see that this is the case, consider (13):

(13)
1 J: *We can walk to Erez,*
2 *and have breakfast there.*
3 M: *But we're having lunch at my parents',*
4 *and we're going out with R tonight.*
((LINES OMITTED))
5 J: *Okay,*
6 ***We'll have breakfast another day.***
7 M: *Maybe tomorrow.*

Note that when J suggests that they have breakfast another day (line 6), he doesn't mean only that, because it's too trivial: J and M have breakfast every morning. Rather, the explicature from J is 'We'll have breakfast **at Erez** [Cafe] another day.' The same applies to M in line 7. Without the additional explicated inference, neither line 6 nor 7 makes any sense. The whole point is whether J and M should eat out that morning. Figure 8.7 shows the complex model we have arrived at, as applied to (13).

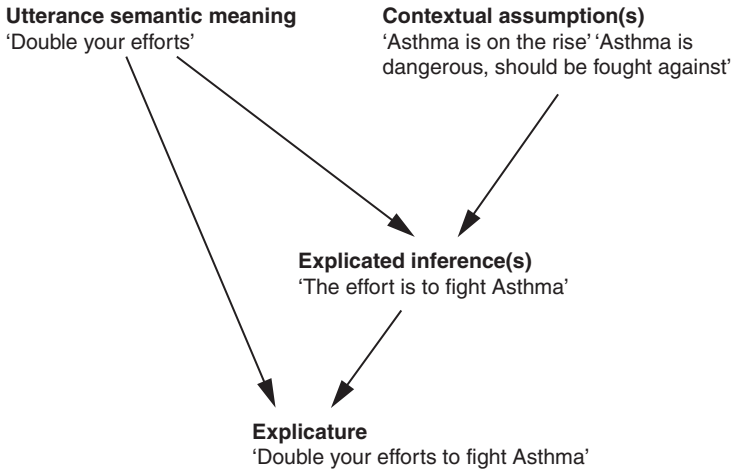


Figure 8.6 Deriving the explicature of *Double your efforts*

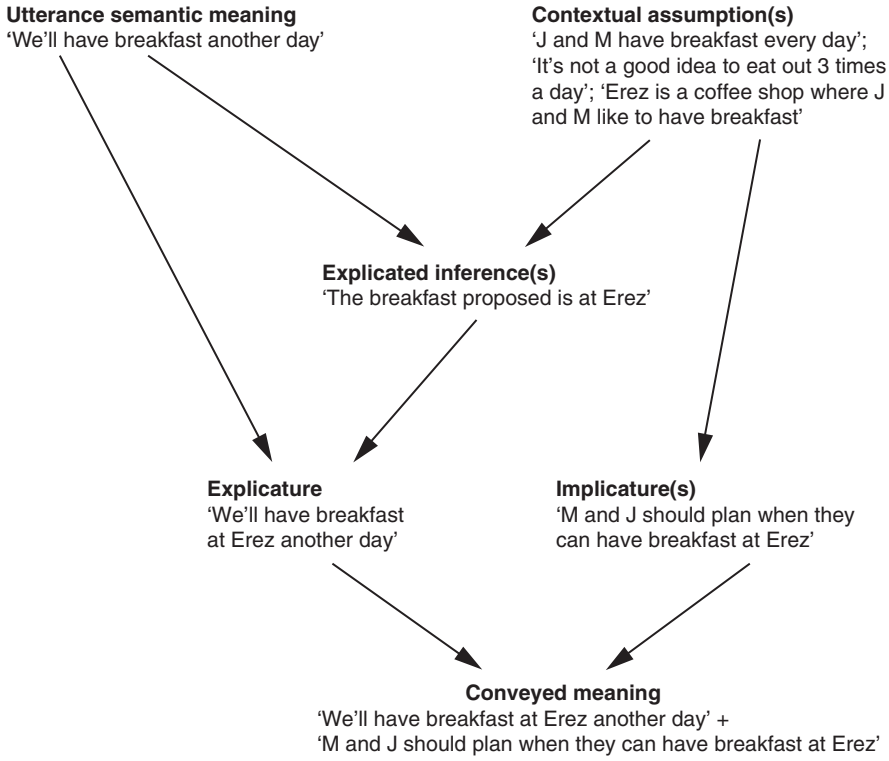


Figure 8.7 Deriving the conveyed meaning (complete model)

All the pragmatic inferences we have considered are speaker-intended, context-dependent, plausible, and cancelable. But whereas implicatures are indirect and external to the speaker's explicit message (the explicature), explicated inferences are part and parcel of it. This is why (14a), rather than (14b), is a faithful report on J's utterance in (13):

(14) **a.** *J said that they will have breakfast at Erez another day.*
b. (i) *J said that they will have breakfast another day*, ***and*** *(ii)* ***in addition he indirectly suggested that it would be at Erez***.

The point is that J did not convey *two separate* messages (as represented in (14b)). J had absolutely no intention of stating that they will have breakfast another day, for that is too trivial a proposition. Rather, he made a single suggestion (as represented by (14a)), although part of it was left implicit. Regardless of their different discourse statuses, all pragmatic inferences are crucial to natural discourse.

8.3 Semantics versus Pragmatics

We have so far treated the semantics/pragmatics division of labor as self-evident. Indeed, semantics analyzes conventional, context-invariant meanings, whereas pragmatics accounts for plausible context-dependent inferences. The implicatures we have reviewed here, in particular, are clearly pragmatic. But not all interpretations are readily classifiable as either semantic or pragmatic. It is sometimes difficult to judge whether a given interpretation is the conventional meaning of some form or its pragmatically inferred interpretation.

For example, I have treated 'questioning factuality' as the semantic meaning of *really?* and 'expressing surprise' as a speaker implicature, which is intended in some but not all contexts. But isn't it possible that *really?* is semantically ambiguous between 'questioning factuality' (its compositional meaning) and 'expressing surprise' (seen as a non-compositional encoded meaning)? Note that the 'surprise' interpretation of *really?* is reasonably inferred from 'questioning factuality,' as one may question the factuality of some proposition just because it seems surprising. But the fact that some interpretation is in principle inferable does not mean that it is actually inferred. Interpretations associated with certain expressions may undergo a change from having a pragmatic status, where the meaning is contextually inferred, to having a semantic status, where the meaning is conventionally encoded. This well-known process, leading to a change from pragmatic status to semantic status, is called **semanticization**, and it has been documented for many expressions. Once some inference (e.g., 'surprise') is frequently derived whenever some specific form (e.g., *really?*) is used, the form–function association may become automatic and conventionally encoded through semanticization.

Many of our current semantic meanings are actually the result of ongoing historical processes of the semanticization of pragmatic inferences (Textbox 8.1 provides one such example). Therefore, we should expect to find cases where the ongoing process of semanticization is underway, making it hard to determine whether some interpretation is semantically coded or (still) only pragmatically inferred.

SIDEBAR 8.6
Semantic change is further discussed in Section 12.3.1, which introduces grammaticalization processes.

Such cases do not mean that the semantics/pragmatics division of labor is useless. The great majority of linguistic expressions have fixed semantic meanings, which are pragmatically adapted or enriched in specific contexts, but with no long-term effects on their semantic meanings. Consider again the examples in (8). Obviously, we would not want to lump

the semantic meanings of *the different versions (testimonies) of an eighty-nine-year-old person, you have a sick dog at home!*, and *edit a tomato* with the pragmatic contextual interpretations they give rise to here ('unreliable,' 'stick to the agenda,' and 'cut out parts of a tomato,' respectively). On the one hand, ad hoc pragmatic inferences are so numerous and context-dependent that it would be pointless to list them as semantic meanings. On the other hand, we need relatively fixed semantic meanings as a basis for constructing specific contextual pragmatic interpretations. Semantic and pragmatic interpretations are both important, although they serve different functions in language.

TEXTBOX 8.1 **THE SEMANTICIZATION OF A PRAGMATIC INFERENCE**

The English word *since* is a clear example of an expression for which the semanticization of a pragmatic inference has been completed. Originally, *since* had only a temporal meaning. But in addition to this temporal meaning, speakers using *since* must have frequently generated causal implicatures, which indirectly conveyed a causal relation between events. Observe the following use of the very similar variant *ever since*:

PATRICK: *… Well* ***ever since*** *he heard that I was having problems with my band, you know, he's been calling me a lot more.* (SBC: 045)

While *ever since* encodes only a temporal relation between *he heard* and *he's been calling*. Patrick here generates an implicature that it is *because* 'he heard' that 'he's been calling … ' A frequent use of *since* in similar contexts must have paved the way for the semanticization of the causal inference for *since*, so much so, that even in the absence of a temporal connection, a causal interpretation is available:

KATHY: *… **Since** you have the square root of two on the bottom, … to make that a square, you have to multiply by the square root of two.* (SBC: 009)

The semanticization of *since* that allows it to be used in this context has not occurred for *ever since*. Note that *ever since* cannot replace *since* here.

CHAPTER SUMMARY

We have defined pragmatic interpretations as complementary to semantic interpretations. While ***semantic meanings are context-invariant encoded meanings*** specified for particular linguistic expressions, ***pragmatic meanings are nonconventional plausible inferences***, triggered by linguistic expressions only when used in supportive contexts. This is why only pragmatic interpretations are cancelable. We presented two proposals (Grice's Maxims and the Principle of Relevance) that account for the derivation of speaker-intended pragmatic inferences. While differing on many points, both of the approaches view utterance meanings as routinely combining semantic and pragmatic meanings. We further distinguished between types of pragmatic inferences, based on their cognitive and discoursal statuses. Particularized conversational implicatures are external to semantic meanings and indirectly conveyed, while explicated inferences are integrated into the semantic meaning to create a single proposition, the explicature.

We revisited the semantics/pragmatics question in the end, proposing that although pragmatics is very often the source of our current semantic meanings, for the most part, semantic and pragmatic meanings are kept apart. All in all, we cannot overestimate the important role pragmatics plays in interpreting language:

Pragmatics	accounts for ***discourse appropriateness*** (relevance, coherence)
Pragmatics	participates in ***fleshing out the speaker's explicit message*** (explicature)
Pragmatics	explains how ***indirect additional messages*** (implicatures) are derived
Pragmatics	provides ***raw materials for our future grammar*** (semanticization of pragmatic interpretations)

TEXTBOX 8.2 **GLOSSING CONVENTIONS USED IN THIS CHAPTER**

Convention	Meaning	Convention	Meaning
1	first person	F	feminine
2	second person	NEG	negation
ACC	accusative	PL	plural
CONJ	conjunctive	PROX	proximal
DEF	definite	PST	past tense
DEM	demonstrative	SG	singular

SUGGESTIONS FOR FURTHER READING

Ariel, **Mira**. 2010. *Defining pragmatics*. Cambridge University Press.

This book is a survey of the field of pragmatics, focusing on how to define and how to do pragmatics.

Ariel, **Mira**. 2016. "Revisiting the typology of pragmatic interpretations." *Intercultural Pragmatics* **13**.1: 1–35.

This paper offers further, more delicate distinctions among pragmatic inferences.

Grice, **H. Paul**. 1975. "Logic and conversation." In **Cole**, **Peter** and **Jerry L. Morgan** (eds.), *Syntax and semantics, Vol. III: Speech acts*. New York: Academic Press. 41–58.

This is the relevant original theory of Grice.

Horn, **Laurence R.** 1984. "A new taxonomy for pragmatic inference: Q-based and R-based implicatures." In **Schiffrin**, **Deborah** (ed.), *Meaning, form, and use in context: Linguistic applications*. Georgetown University Round Table on Languages and Linguistics. Washington, DC: Georgetown University Press. 11–42.

This chapter introduces a variant neo-Gricean theory.

Levinson, Stephen C. 1983. *Pragmatics*. Cambridge University Press.

This book is the first and classical introductory textbook on pragmatics. It discusses deixis, implicature, presupposition, speech acts, and conversational structure.

Sperber, **Dan**, and **Deirdre Wilson**. 1986/1995. *Relevance*. Oxford: Blackwell.

This book introduces Relevance Theory.

See also Ariel (2008), Blakemore (1992), Green (1989), Grundy (1995), Huang (2007), and Thomas (1995).

List of sources:

LSAC	The Longman Spoken American Corpus
SBC	The Santa Barbara Corpus of Spoken American English (Du Bois and Englebretson 2004; Du Bois and Englebretson 2005; Du Bois et al. 2000; Du Bois et al. 2003)

EXERCISES

1. Consider the following utterance and determine whether (a) and (b) below are entailed or implicated. Explain your answers.

ROY: *and they probably didn't have to wash their salads back then, because they didn't know what was on them.* (SBC: 003: 165.80–169.73)

a. 'They ate salads back then' is:
  i. An entailment
  ii. An implicature

b. 'They didn't have the scientific resources to know what was on their salads back then' is:
  i. An entailment
  ii. An implicature

2. Consider the following exchange about some fish, and identify the implicatures involved:

MARILYN (i): *.. It's kind of smelly, isn't it.*
PETE: *Mhm.*
MARILYN (ii): *But I got it at a reputable market.* (SBC: 003: 22.84–28.20)

In each of her turns Marilyn generates (at least) two implicatures. For each of the potential pair of implicatures stated below, state whether they are the 'correct' implicatures generated by Marilyn or not ('incorrect'). For incorrect answers, state why they are incorrect.

a. (i) Possibly the fish is spoiled; (ii) Possibly I paid a high price for the fish.
b. (i) We mustn't eat the fish; (ii) Let's eat the fish.
c. (i) Possibly the fish is spoiled; (ii) Probably the fish is not spoiled.

3. Here are two cases where speakers might seem to contradict themselves. How would you resolve this contradiction? (*Hint*: Construct the relevant explicatures.)

a. *I was a composer even before I was a composer and my teacher, composer Abel Erlich, knew it right from the start.* (Originally Hebrew, *Haaretz*, July 27, 2007)

b. *At any rate, at this point the arrival in Israel* [of the Ethiopian Jews – M.A.] *is perceived as incomplete, as one of the interviewees put it: "We've arrived, but we haven't arrived."* (Originally Hebrew, *Haaretz*, November 9, 2007)

4. J must have misunderstood M's *D'you know what time it is*? in the following exchange (note that J's utterance is not *What?*, which would indicate that he did not hear the question and is requesting that she repeat it):

M: *D'you know what time it is?*
J: *What.*
M: *No, do you know what time it is?*

Explain the source of the miscommunication here. Is it the same as in Example (1) at the beginning of this chapter? (*Hint:* No.)

5. Consider again the following exchange and analyze it according to Grice:

J: *We can walk to Erez,*
and have breakfast there.
M: *But we're having lunch at my parents',*
and we're going out with R tonight.

i. Indicate which of Grice's Maxims is violated by M.
ii. Which of the following implicatures is thereby generated?
a. 'It's not a good idea to eat out three times a day'.
b. 'We should skip breakfast because we're eating lunch and dinner today'.
c. 'We shouldn't eat at Erez, because it's too much trouble to walk there'.

6. Using the concepts of particularized conversational implicature, as well as cancellation, can you explain why A's *That's my job* below resembles a punchline in a joke?

((The addressee has been very carefully folding up some scotch tape around a picture, so that it won't stick to the wall and damage it))

A: *You don't have to be such a perfectionist.*
((Pause))
That's MY job.

7. Consider again the following exchange and analyze it according to Sperber and Wilson's concept of contextual assumptions:

JUNE: *Is he gonna take the stand?*
REBECCA: (H) ***He says so***. (SBC: 008: 1420.32–1422.92)

i. What contextual assumption must June access if she infers a positive answer to her question?
a. Something like: 'If someone says they will do something, then most probably they will.'
b. Something like: 'Defendants tend to want to testify'; 'He is a defendant.'
ii. What contextual assumption might lead June to doubt that a positive answer was intended by Rebecca?
a. Something like: 'The defendant will not take the stand.'.
b. Something like: 'The defendant is not a reliable person. Therefore, the fact that he says that he will do something does not at all mean he will actually do it.'

8. Consider Fran's utterances, paying special attention to the **underlined** expressions, and determine whether their interpretations, provided below, are implicated or explicated:

FRAN: *and this is a guy* ***like seventy years old, or something***
he'd been ***driving a cab for forty years****, and* ***proud of it***. (SBC: 051)

Like seventy years old, or something > 'About seventy years old'

driving a cab for forty years > 'driving noncontinuously, whenever he worked', i.e., 'he'd worked as a cab driver for forty years'

proud of it > 'proud of being a cab driver' (not of the cab)

Here are some questions that might help you decide:

What if you find out the guy is 50? Or that he drove a cab but not for a living, or that he drove it day and night for 40 years? Or that he was proud of his cab?

9. Consider the following utterance and analyze Marilyn's explicature. Marilyn is preparing dinner with two friends:

MARILYN: *well,*
.. we could've gone out,
but,
I wanted it to be homemade (SBC: 003: 241.41–244.33)

i. Which of the following accurately spells out the explicature intended by Marilyn?
  a. We could have gone out to eat at a restaurant, but I wanted the food to be homemade.
  b. We could have gone out to eat at a restaurant, but I wanted the food to be homemade, so that's why we're cooking at home.
  c. We didn't go out because homemade food is better.

ii. What linguistic cue do we get from Marilyn that we need to enrich her statement *we could've gone out* with 'to eat at a restaurant' as part of the explicature?
  a. *Go out* requires that we specify a goal for the act of 'going out'.
  b. *But* requires some contrast between the two conjuncts it conjoins. 'Going out' does not contrast with 'wanting the food to be homemade'. But 'going out to eat at a restaurant' does.

10. Consider a few examples with *at the same time* and with *while*. Both are sometimes understood to refer to events or situations that stand in contrast to each other. Based on the following data, what can we say about the semantic or pragmatic status of 'contrast' for *while* and *at the same time*? Has it semanticized into an encoded meaning, or is it only pragmatically inferred in some but not all contexts? Is this status the same for the two expressions? One useful method is to try to exchange the two expressions with each other as well as with *when*, which has roughly the same temporal meaning. Since we're only interested in meaning, you should make syntactic changes as necessary, and then check whether the variants you created are still synonymous. Specifically, check whether the variants convey some contrast, and whether they still convey temporal simultaneity.

(Hints: The less the presence of a contrast interpretation in some variant, the less contrast has semanticized. The less the presence of a temporal interpretation in some variant, the more likely the semanticization of 'contrast' has progressed, to the point that it has started ousting the original temporal linguistic meaning.)

Note that the goal here is not to reach a definitive answer regarding these expressions. Rather, it is to try to construct arguments for a semantic versus pragmatic status.

While examples

a. *I didn't want to have an asthma attack* <u>while</u> *I was unconscious.* (LSAC)
b. Pete: *They were having a drought* <u>while</u> *I was there.* (SBC: 003)
c. Dan and Jennifer are playing a game.
DAN: … *Thank you very much.*
JENNIFER: … *For what.*
DAN: .. *I just took over Iceland.*
JENNIFER: .. (TSK) *Oh,*
((1 LINE OMITTED))
.. (H) *Right* ***while*** *I was kissing you, you traitor.* (SBC: 024)
d. *RANDY: Just take into consideration the type of aircrafts.*
It takes the seven-twenty-seven a little b- while to get wound up, ***while*** *the seven-thirty-seven'll really go. (SBC: 022)*
e. *I haven't done what I would consider to be a good job with this class this quarter.* ((LINES OMITTED)) *I feel like,* ***while*** *I'm prepared for class,* ((1 LINE OMITTED)) *I don't have the hour to just sit and look at the material and go through it and know exactly what it is I'm going to say* (LSAC).
f. *Now they* ((crocodiles)) *survived* ***while*** *the dinosaurs did not. And one of the theories is because they were so small they were able to hide.*

At the same time examples

a. *He could also do e-mail or write stuff on the computer and either watch television or listen to the radio* ***at the same time.*** (LSAC)
b. *He was alive* ***at the same time*** *that ah Thomas More was.* (LSAC)
c. *Well, I mean, for lunch, what can you bring on like a backpacking trip for lunch that doesn't require any cooking but* ***at the same time*** *is not going* ((LINES OMITTED)) *to overwhelm you with fat, sugar or salt.* (LSAC)
d. FRANK:.. *you cannot get a scale for d-*
((LINES OMITTED))
distance,
… and ***at the same time*** *get objects,*
that can give you the scale for the size of the planets. (SBC: 019)

9 Discourse

Language beyond the Sentence

KEY TERMS

- Discourse
- Genre
- Intonation
- Intonation unit (prosodic phrase)
- Substantive, regulatory, and fragmentary intonation units
- Topic of conversation
- Narrative schemas and their parts
- New, accessible, and given activation states
- Identifiability

CHAPTER PREVIEW

In the preceding chapters, we looked at linguistic units such as the phoneme, morpheme, phrase, and sentence. Discourse, as described here, is the study of language at levels beyond the sentence, how larger stretches of language are organized, and ways in which this organization influences the shapes of sentences and words. This chapter will particularly focus on the discourse genre of spoken conversation. It will introduce students to conventions for the transcription of conversational speech, and in particular, prosodic features such as intonation. The chapter will look at differences between prosodic and syntactic structuring and how speakers use intonation units to manage discourse goals such as navigating topics of conversation or structuring narratives. It will also introduce the notion of information structure and the concepts of given, new, and accessible information, and will look at how the identifiability of referents is marked in English grammar. At multiple points throughout the discussion, the chapter will illustrate that grammatical structures are employed for discourse purposes.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **read transcriptions of conversational discourse that indicate prosodic categories;**
- **distinguish between substantive, regulatory, and fragmentary intonation units;**
- **identify the functions that intonation units have in navigating a topic of conversation;**
- **identify the structural elements of a narrative;**
- **determine whether the activation state of an idea is given, new, or accessible;**
- **determine whether the referent of a noun phrase is identifiable or non-identifiable;**
- **articulate why studying discourse contributes to a broader understanding of language and linguistic structure.**

9.1 Introduction

The term "discourse" is used in a variety of ways. It may, for example, refer to an established way of talking about something, as with "medical discourse" or "feminist discourse." Within linguistics most discourse studies fall into one of two broad categories: investigating ways in which language is used and investigating larger levels of language structure. It is this latter use of the term that is discussed here.

SIDEBAR 9.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quizzes, and accompanying audio files.

It is easiest to understand basic concepts of discourse through examples in one's own language, without the complicating factors of unfamiliar grammatical devices, and with the ability to reflect on one's own discourse practices. For that reason, all of the examples discussed in this chapter are taken from English. Nevertheless, most of what is said in this chapter is true of all spoken languages; only the language-particular details of prosody and grammar differ. ***Discourse functions are the same across languages because all humans have the same cognitive structures and the same communicative needs in speaking.***

9.2 Hierarchies of Linguistic Units

In the field of linguistics, there has been a tendency over the years to work gradually upward from smaller units to larger ones. During the period that preceded and immediately followed World War II, much attention was paid to the phoneme, a unit of sound that was regarded as the minimal unit of language. There was also a lively concern for morphology, the structure of words, which were thought to be composed of morphemes, which in turn were composed of phonemes. For example, the word *hunted* was analyzed as a sequence of two morphemes, *hunt* and *-ed*, and each of these morphemes was analyzed as a sequence of phonemes. Around 1960, a great deal of work and effort began to be devoted to syntax, the structure of sentences, which were in turn composed of words. Thus, language at that time was thought to possess a hierarchical structure like this:

sentences
are composed of words
are composed of morphemes
are composed of phonemes.

Beginning around the 1970s, significant attention began to be extended to ways in which sentences combine within still larger stretches of language. Language beyond the sentence has been called **discourse**, and thus a new level was added to the hierarchy:

discourse
is composed of sentences
are composed of words
are composed of morphemes
are composed of phonemes.

Discourse studies have led to important revisions in the ways linguists approach language as a whole. For example, whereas linguists earlier felt free to invent their own examples of isolated words or sentences, it was impossible to invent larger stretches of language in the same way. Inventing conversations is best left to writers of fiction. Discourse studies have thus necessarily emphasized the importance of recording language as it is actually used under natural circumstances. Furthermore***, discourse cannot be expected to conform to patterns as clearly defined as those found in morphology or syntax***. The ways people create larger stretches of language are governed by their purposes and the flow of their thoughts, and those processes are not as rigidly structured as words or sentences. In spite of this looser organization, discourse analysts have discovered a variety of ways in which larger stretches of language are organized, and also ways in which discourse factors influence the shape of sentences and words.

9.3 Genres of Discourse

Discourse studies have also highlighted the fact that language comes in many varieties, or genres. One obvious distinction separates spoken language from written language. Speaking and writing are very different ways of producing and comprehending language, and these differences can lead to significant changes in the language itself.

There are many other genres within spoken and written discourse. For example, spoken language is found in conversations, stories, interviews, speeches, service encounters, and so on. Written language is found in letters, fictional and nonfictional books and articles, news reports, editorials, and email and text messages. Each of the many ways language is used follows discourse patterns that are shaped by the needs of that use.

Within these varieties, spoken conversations enjoy a special status. Early on in human history, people were probably speaking with each other before they developed other ways of using language. People converse often and naturally and with no special training, whereas other uses of language need to be deliberately taught and learned. Written language did not even exist until a few thousand years ago, and until very recently most of the

world's population remained illiterate. Because of its priority in these respects, the focus in this chapter will be on spoken conversational discourse.

In one respect analyzing written language is an easier task, because writing has a permanence that allows it to be revisited and analyzed at one's leisure. Spoken language is realized in transient sounds that disappear almost as soon as they are produced. Modern technology has given us the advantage of allowing these evanescent sounds to be preserved and replayed, greatly improving our ability to analyze speech as it actually occurs. Nevertheless, linguists nearly always begin their analyses by transcribing speech into a written form that they can peruse whenever and however they wish. These transcriptions have their limitations and can never capture everything that is present in the sounds themselves. Thus, their form and content is always determined by the goals of the investigator and by whatever conventions those goals may dictate.

STOP AND REFLECT: 9.1 **THE IMPORTANCE OF LISTENING** Sound file (1)

Transcriptions of spoken language, even when marking prosodic features such as intonation and loudness, never do justice to the richness of the spoken voice. Try reading Example (1), then listen to the sound file on the website. You'll notice an immediate deepening in your understanding of the conversation and the interaction in which it takes place.

Listening repeatedly, while working though the transcript, is a good habit that will reward you with insights at increasingly fine levels of detail.

9.4 Transcribing Conversational Speech

Example (1) is an excerpt from a conversation between a mother and daughter. The sequences of two and three dots show shorter and longer pauses. The square brackets show overlapping speech, as in line 7, where the mother's words *but I thought* overlapped with the daughter's words *and then he* in line 6. The accent marks show words or syllables that were given special prominence with higher pitch, often with louder volume, and sometimes with lengthening. (See Stop and Reflect 9.1 for a note on the limitations of transcripts such as this one and the importance of listening, and Textbox 9.1 for a note on how discourse data can be compiled into searchable corpora.)

(1) Sound files (1)

1	Daughter:	*… Isn't that sád about that kid in the paper?*
2		*.. Who .. who's in a coma?*
3		*He's a- the star .. baseball player at BK?*
4		*. And he got the scholarship to-*
5		*… He was the Gatorade player of the year?*
6		*.. Two years ago [and then he-]*
7	Mother:	*[But I thought] it was his dád who was .. in the hospital.*
8	Daughter:	*Nó it's hím.*

TEXTBOX 9.1 **DISCOURSE CORPORA**

Data for spoken discourse typically consist of a set of recordings, accompanied by transcriptions that may be annotated in various ways. The recordings and annotations together are combined into a **corpus** (plural **corpora**) that can be analyzed using a variety of methodologies. The study of discourse benefits from detailed qualitative analyses, of the type introduced here, as well as from quantitative methodologies that reveal patterns over large data sets.

There are a number of publicly available corpora that have been converted into online searchable databases, such as the Corpus of Contemporary American English, the British National Corpus, and El Corpus del Español. These can be used in a variety of ways. For example, a **concordance** of all of the examples of the word *well* in the Corpus of Contemporary American English produces a list of 648,485 examples of *well* in the context in which they occurred, including the ten examples below (all from television news shows). One can use this to analyze, for example, how often this *well* was used at the beginning of a speaker's turn, or in expressing a point contrary to that of a previous speaker. This can be done because clicking on each example allows one to see the broader context in which the word appears. One can also query to see how frequently *well* co-occurs with other words (e.g., *well then* occurs 164 times, while *oh well* occurs 90 times), whether the distributions differ depending on genre, whether there are differences across time, etc.

Linguists from across the world use such corpora to address a wide array of topics in linguistics, including discourse, but also the lexicon, semantics, and grammar. The data can also inform education and language teaching.

of innocence that, to such as can not see into her, may pass **well** enough. MRS. BELVILLE: Nay, my dear, don't say

. BELVILLE: aside I like '' docility ''. to MRS. BELVILLE The girl's **well** enough for what she is. But let's see what she'll

much grieved for the loss of her. O, how my eyes run! **Well**, but God's will be done. My master said: for my dear

I could not help entertaining a jealousy that she was writing to somebody who stood **well** in her opinion, and my fe

to whom you speak? PAMELA: Yes, I do, sir, too **well**. Well may I forget that I am your servant when you forget wha

you speak? PAMELA: Yes, I do, sir, too well. **Well** may I forget that I am your servant when you forget what belongs

of fire in my attempts to thaw it. MRS. JERVIS comes forward. **Well**, Mrs. Jervis, I know Pamela has your good word

know of? MRS. JERVIS: deeply embarrassed No indeed, sir. BELVILLE: **Well**, no more of this silly girl. You may only

two miles and a half and a byway to the town, and bring pretty **well** dressed I may come to some harm almost as b

thus you taunt and retort upon me? I will be answered. PAMELA: **Well** then, sir, I will not tell a lie for the world. I

corpus.byu.edu/coca
corpus.byu.edu/bnc
corpusdelespanol.org

9		*.. He's [in a cóm]a.*
10	Mother:	*[Oh.]*
11	Daughter:	*.. [He got hit] by that drunk driver?*
12	Mother:	*[Okay.]*
13	Daughter:	*. And his younger bróther,*
14		*played at BK on the fóotball team.*
15		*… And I gue-*
16		*it was the pa-*
17		*the árticle was about you know how,*
18		*… they're all going to-*
19		*all the family's gonna go to the gáme today because,*
20		*.. spórts are very important.*
21		*.. In his [fámily] you know,*
22	Mother:	*[Yeah].*
23	Daughter:	*they all used to go watch … the older brother play báseball,*
24		*that's what he would want,*
25		*is for the family to be at the game,*
26	Mother:	*Oh [really?]*
27	Daughter:	*[Uh] but the coach,*
28		*I think it's Tim Beagen.*
29		*[And one] of the Beagens said you know,*
30	Mother:	*[Yeah.]*
31	Daughter:	*if you don't wanna play that's fine,*
32		*if you … don't wanna,*
33		*you could just go out of the play,*
34		*… you just do whatever,*
35		*but it was like .. aah.*

One obvious property of spoken language is its production, not as an uninterrupted flow of sound, but as a series of spurts that are usually between one and two seconds long. These spurts are sometimes called **intonation units** (IUs), sometimes **prosodic phrases**. They are defined by their **prosody**, a term that includes variations in **pitch**, **volume**, **timing**, and **voice quality**. IUs are represented here in separate lines. There is a tendency for them to decline in both pitch and volume from beginning to end. Figure 9.1 illustrates this declination for line 7, where pitch (more precisely, **fundamental frequency**) is shown at the top, and volume (or **intensity**) at the bottom.

There is also a tendency for IUs to be spoken rapidly at the beginning and more slowly at the end, as in line 1, where the first words *isn't that sad about that* were spoken at an average rate of 90 milliseconds per syllable, while the average rate for the last four words, *kid in the paper*, was a much slower 194 milliseconds per syllable, in large part because of the lengthened pronunciation of the word *paper*. This deceleration is evident at the bottom of Figure 9.2.

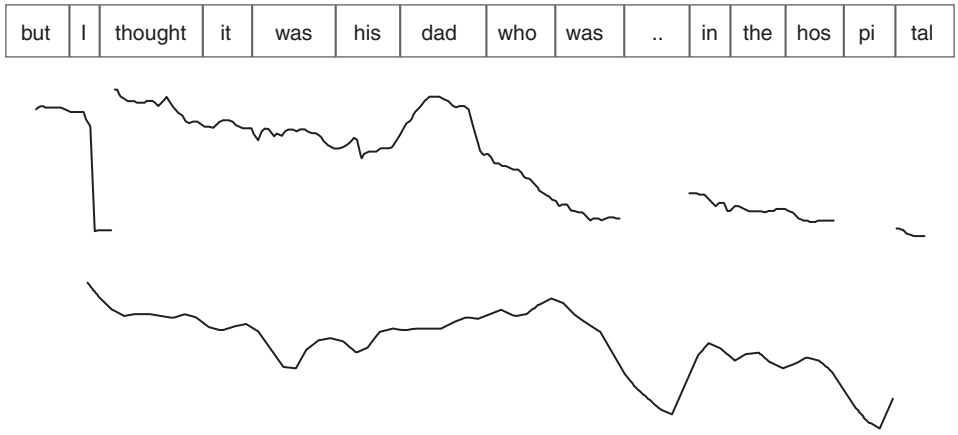


Figure 9.1 Declining pitch (top line) and volume (bottom) in line 7 of Example (1)

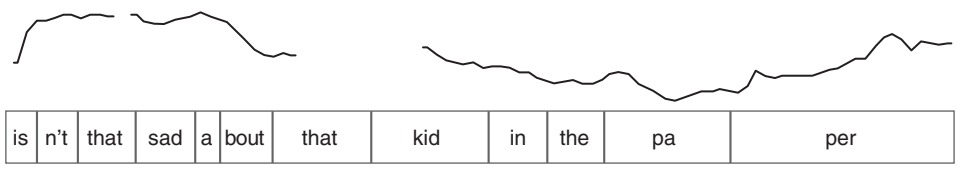


Figure 9.2 Pitch and syllable length in line 1 of Example (1)

SIDEBAR 9.2
A more detailed discussion of discourse prosody is given in Chapter 10.

Each intonation unit ends with a **terminal pitch contour** that signals the boundary of the IU as well as the relation of this IU to others (see Textbox 9.2 for transcription conventions for terminal contours). Line 1 ended with a rising pitch on the last syllable of the word *paper*, inviting agreement from the mother. This terminal rise is visible in Figure 9.2; it is represented in the transcription with a question mark. Lines 13 and 14 were closely related, with line 13 introducing the idea of the younger brother and line 14 including him in an activity. Figure 9.3 shows line 13 ending with a very low pitch rise signaling more to come; it is marked in the transcription with a comma. The pitch prominence given to the word *brother* and its lengthened pronunciation are also especially noticeable in this figure.

TEXTBOX 9.2 **TRANSCRIPTION CONVENTIONS FOR TERMINAL CONTOURS**

Rising pitch	question mark	?
Low rise	comma	,
Falling pitch	period	.

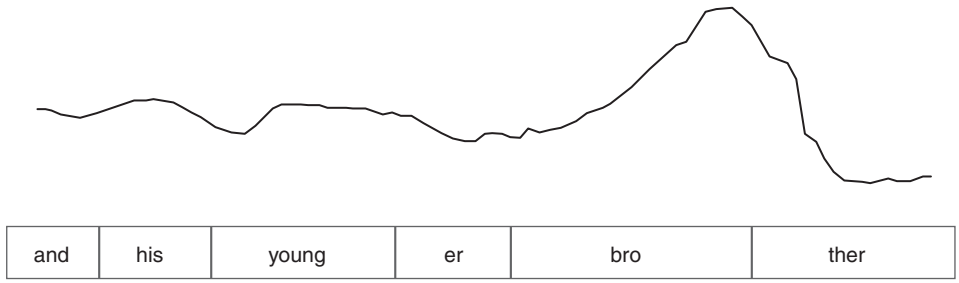


Figure 9.3 Line 13 with a low rising terminal contour, indicating more to come

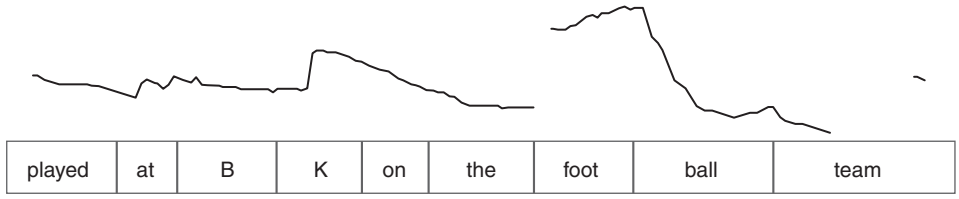


Figure 9.4 Line 14 with a falling terminal contour

SIDEBAR 9.3
For more transcription conventions regarding pitch and intonation, see Textbox 10.3.

SIDEBAR 9.4
For further discussion of the properties of intonation units, also see Section 10.2.1.

Line 14 then followed with a terminal falling pitch that signaled the closure of this sequence of closely related ideas; this is marked in the transcription by a period.

Intonation units are sometimes separated by pauses, as can be seen in the two or three dots at the beginnings of lines 1–6, where only line 3 followed immediately without a pause.

Intonation units can be sorted into three major types according to their function. Most common are the **substantive** IUs that carry forward the ideas on which the conversation is based. Others serve to regulate the flow of those ideas, and these **regulatory** IUs are usually very short, typically single words of a type known as **discourse particles**. All of the mother's contributions in Example (1), with the exception of line 7, were of this regulatory type, consisting of nothing more than *oh, okay, yeah*, and *oh really*? The third type consists of **fragmentary** IUs that are broken off before they are finished, as illustrated in lines 4, 6, 15, 16, and 18. They are evidence for the **online creation of natural discourse**, the complex process through which speakers pull their thoughts together and articulate them in real time under the pressures of social interaction. During this process, people often change their minds about what to say or how to say it.

9.5 Navigating through a Topic: Discourse Functions of Intonation Units

Intonation units cluster within larger units, or **conversational topics**: extended segments of thought that are too large to be focused on all at once, but which function at a more inclusive level to make discourse coherent and to keep the conversation moving

forward. Speakers navigate within a topic using a sequence of ideas expressed in their IUs. This is best seen through a qualitative analysis of the data, where one carefully listens to the speech, analyzing the content, function, and contribution of each IU within the interactional context of the conversation.

In line 1 of Example (1), the daughter introduced a new topic into this conversation, a topic she developed by articulating a succession of ideas all related in some way to the kid who was in a coma. This topic was sustained until its conclusion in line 35. Its progress was determined in part by the interaction between the daughter and her mother, and in part by the daughter's sequential recall of things she had read in the newspaper. There are a number of ways in which an intonation unit may relate to its topic. One function is to introduce a **referent**, the idea of a person, object, or abstract concept that the conversation will discuss. This can be seen in line 1, where the speaker introduces a new referent and articulates her emotional response to the circumstances in which he is involved. This also establishes a theme of sadness and difficulty. A second discourse function of an IU is the amplification of an idea that was introduced in a previous IU, as with line 2 where the identity of the kid was clarified with the relative clause *who's in a coma*.

1 Daughter: … *Isn't that sád about that kid in the papér?*
2 .. *Who .. who's in a cóma*

TEXTBOX 9.3 **REFERENT TRACKING**

It is common for a single span of conversational discourse to be concerned with multiple referents. For example, the set of human referents in Example (1) includes the kid in the paper, his dad, the drunk driver, his younger brother, and the coach. For discourse to be successful, speakers must ensure that their interlocutors can determine which referent is being discussed at a given moment in the discourse. This function, which is called **referent tracking**, is accomplished by a combination of lexical, prosodic, and grammatical means. In the first few lines of Example (1), we can see the daughter use a grammatical device (the relative clause in line 2), lexical choices (the full noun phrase in lines 1 and 2 versus the pronoun *he* in lines 3 through 6), and prosody (such as the prosodic accent given to *him* in line 8) to ensure that her mother correctly identifies the referent and associates him with the events communicated in the narrative.

Intonation units can also serve to clarify the identity of a referent, as in lines 3 through 6. Line 4 was fragmentary, and whatever the daughter intended to say in line 6 was interrupted by her mother, who is contradicting the daughter's assertion of the identity of the person in a coma.

3 Daughter: *He's a- the star.. baseball player at BK?*
4 … *And he got the scholarship to-*
5 … *He was the Gatorade player of the year?*
6 .. *Two years ago [and then he-]*
7 Mother: *[But I thought] it was his dad who was .. in the hospital.*

The daughter corrected her mother in the next two IUs, repeating what she had said in line 2. The mother showed her acceptance of the correction with the discourse particle

oh. Thus IUs can also correct information and indicate agreement or disagreement with an interlocutor. (These examples illustrate several devices used for referent tracking; see Textbox 9.3.)

8 Daughter: *Nó it's hím.*
9 *.. He's [in a cóm]a.*
10 Mother: *[Oh.]*

The daughter then explained the reason for the coma, which her mother this time accepted with *okay*. This is another discourse function of intonation units: elaboration on a topic through the expression of a reason or attendant circumstances.

11 Daughter: *.. [He got hit] by that drunk driver?*
12 Mother: *[Okay.]*

Next came a shift in the development of the topic: the introduction of a new **subtopic** where the focus moved from the kid in the hospital to his family. First came the introduction of a new referent: his brother, who was introduced in line 13 and then treated as the subject of line 14. A sequence of this kind, in which the idea of a person is introduced in one intonation unit that is followed by a second saying something about that person, is evidence for a limit on the amount of information an IU can contain (see below).

13 Daughter: *… And his younger bróther,*
14 *played at BK on the fóotball team.*

The introduction of the younger brother led to a mention of what the paper said about the entire family attending today's game. After a referent is introduced, attention shifts from the identity of the referent to the referent's activities, as with this comment following the introduction of the younger brother. The daughter's language at this point became full of disfluencies, evidence that she was experiencing difficulty in putting her thoughts together and finding the right language to express what she was thinking. She finally succeeded in line 19, and in line 20 went on to express the reason the family would attend the game. The mother once more acknowledged her acceptance of this information with a *yeah* before line 21 had been completed.

15 Daughter: *… And I gue-*
16 *it was the pa-*
17 *the árticle was about you know how,*
18 *… they're all going to-*
19 *all the family's gonna go to the gáme today because,*
20 *.. spórts are very important.*
21 *.. In his [fámily] you know,*
22 Mother: *[Yeah].*

The daughter then amplified the family's reason for attending the game, with the mother's *oh really* expressing surprise at this explanation. This response illustrates another function of prosodic units: the expression of the emotion, attitude, or evaluation of the speaker.

23 Daughter: *they all used to go watch … the older brother play baseball,*
24 *that's what he would want,*
25 *is for the family to be at the game,*
26 Mother: *Oh [really?]*

Next came another subtopic, begun again with the introduction of a new referent, the coach, whose identity was confirmed by the mother in line 30. In line 29, the daughter attributed the statement that would follow to the coach (or to someone related to him), in an example of constructed dialogue (see Textbox 9.4).

27 Daughter: *[Uh] but the coach,*
28 *I think it's Tim Beagen.*
29 *[And one] of the Beagens said you know,*
30 Mother: *[Yeah.]*
31 Daughter: *if you don't wanna play that's fine,*
32 *if you … don't wanna,*
33 *you could just go out of the play,*
34 *… you just do whatever,*

The topic was finally rounded off when the daughter expressed her emotional reaction to the entire situation by exclaiming *aah*, a sound she emitted with a breathy voice quality that conveyed her depth of feeling.

35 Daughter: *but it was like .. aah.*

TEXTBOX 9.4 **CONSTRUCTED DIALOGUE**

Quoting the speech of another person is sometimes called **constructed dialogue**, because it pretends to reproduce a person's language without necessarily repeating the exact words. In this case, the quoted speech provides further elaboration on a major theme of the conversation: the difficulty of the situation.

This exercise has demonstrated that intonation units have a variety of discourse functions with respect to the introduction, construction, and maintenance of a topic. These functions include introducing referents, clarifying their identities, articulating their activities, amplifying an idea by expressing reasons or other relevant circumstances, expressing agreement or disagreement with a previous point, correcting or contradicting a previous point, and conveying emotions, attitudes, and evaluations. This list is not exhaustive, but it does identify many of the functions that are central to any conversational exchange.

9.6 Narratives and Their Structure

One type of topic that often arises during a conversation is a **narrative**, the recall of a significant and coherent set of events in which the speaker was involved, or which the speaker had learned about from someone else. Narratives consist of a sequence of ideas that follow a conventional **narrative schema**, a pattern that captures the way people remember a sequence of events that they find appropriate to relate to others. The narrative schema builds toward a **climax**, something unusual or unexpected that makes the narrative interesting and worth telling. Some or all of the following elements may be included:

a. Introduction of the narrative
b. Introduction of the participants
c. Orientation in space
d. Orientation in time
e. Movement toward a climax
f. The climax
g. Reaction to the climax
h. Results of the climax
i. Coda

We can follow the way this schema was realized in the narrative given in Example (2). The audio for Example (2), together with a complete transcription, is available on the website.

a. *Introduction of the narrative*: Speakers sometimes say quite explicitly that they are about to tell a story.

Sound files (2) **(2)**

1 Alan: … *I got a story to tell you*,
2 *a shaggy dog story*,
3 *but as long as we're talking about that recorder and six-hundred dollars*,
4 … *I'll tell you the story*.

b. *Introduction of participants*: Narratives always involve one or more characters, and they are usually introduced near the beginning.

5 … *Oh gosh*.
6 .. *Uh*.
7 .. *Ray and I and Sue and Buddy*,

c. *Orientation in space*: Listeners need to know where something took place.

8 … *took a trip*,
9 … *to Mexico City*.
10 Jon: … (sniff)

d. *Orientation in time*: Listeners also need to know roughly when it happened.

11 Alan: *It must've been*,
12 .. *four to six months after my dad died*.
13 *That's how I remember*,
14 *he [died in] sixty-s-*
15 Jon: *[Oh yeah?]*

16 Alan: … *December sixty-seven so,*
17 … *sometime in sixty-eight we took the trip,*

e. *Movement toward a climax*: Once a narrator has established the participants, place, and time, the next step is to introduce events that will lead to the climax. This portion is sometimes referred to as a **complicating action**.

18 *it was-*
19 *.. talked about it for a while,*
20 *… uh,*
21 *.. flew down to Mexico City,*
22 *… uh we,*
23 *.. couldn't think of the name of the hotel,*
24 *it wouldn't mean anything now,*
25 *but we ended up in a … fabulous hotel,*
26 *… uh,*
27 *.. first night,*
28 *we were very unhappy with our rooms,*
29 *we went down there,*
30 *… and the next morning,*
31 *Buddy who's a … early riser anyhow,*
32 *was probably up … four o'clock,*
33 *and he went down there,*
34 *complained to the manager,*
35 *… so he,*
36 *.. cause it was not the .. the accommodation we were supposed to have,*
37 *we checked in about eight o'clock at night so it was,*
38 *in Mexico that you know is typical.*

f. *The climax*: In this case, the size of the accommodations were greater than anything the narrator had expected, especially in contrast to the room that was first assigned. The climax need not be anything wonderfully exciting as long as it conflicts with expectations in some way.

39 *… Well we ended up with a.. corner .. suite.*
40 *… With-*
41 *… It was so big,*

g. *Reaction to the climax*: Listeners often respond to a climax by showing their appreciation of its unexpectedness. In this case, Jon laughed, and his two laugh pulses are transcribed with "@" symbols.

42 Jon: .. @@

h. *Results of the climax*: Narrators often amplify the unexpected nature of the climax by providing further information related to it.

SIDEBAR 9.5
Laughter is a frequent element of conversational discourse. It is transcribed here with an "@" symbol, with one @ transcribed for each "pulse" of laughter. So what is sometimes written as *hahaha* would be transcribed @@@.

43	Alan:	*we could have a party for fifty people and not pressed it.*
44		*.. Three bathrooms in it.*
45		*… Two bedrooms,*
46		*but they had-*
47		*but they had an extra guest bathroom,*
48		*.. a big bar,*
49		*… it was circ-*
50		*open on two sides,*

SIDEBAR 9.6
For a non-English example of a narrative used as linguistic data, see the Seneca Language Profile (LP13). Further examples of narratives, with associated sound files, can be found in the online materials for the following Language Profiles: Manange (LP3), South Conchucos Quechua (LP6), Tsez (LP7), Lowland Chontal (LP9), and Manambu (LP10).

i. *Coda*: A story may be summed up or rounded off at the end, as in this case with an explanation of the contrast between the surprising size of the room and what the narrator and his wife actually needed.

51	*course we didn't even have-*
52	*we had the two of us.*

This example demonstrates that even in spontaneous conversation – which may appear chaotic at first glance – ***the production of discourse is structured and follows regular patterns.***

9.7 The Prosodic Realization of Sentences

Chapter 6 presented evidence for the sentence as a unit of syntax consisting of one or more clauses, which follow regular principles of syntactic structuring. In spoken discourse, sentences are not isolated constructs but are produced online in the process of meeting the speaker's aims within the social environment. They are also produced with prosody – pauses, intonation, shifts in timing, loudness, and voice quality – which overlays the sequences of words that are structured into phrases, clauses, and sentences.

Typically, in English, the production of an intonation unit, or prosodic phrase, with a falling intonation contour indicates that the speaker has reached a point of closure, while a rising intonation contour indicates that the speaker intends to continue. However, at times the prosodic structuring and the syntactic structuring do not coincide in this way. Consider again the following exchange from Example (1):

SIDEBAR 9.7
For a more detailed discussion of prosody, see Chapter 10.

19	Daughter:	*all the family's gonna go to the gáme today because,*
20		*.. spórts are very important.*
21		*.. In his [fámily] you know,*
22	Mother:	*[Yeah].*
23	Daughter:	*they all used to go watch … the older brother play báseball,*

Line 20 ended with a falling pitch that suggested the end of a sentence. Syntactically, however, line 21 was a continuation and conclusion of that sentence, in spite of the fact

that the rising pitch at the end of it suggested more to come. Between lines 21 and 23, in other words, there was a syntactic sentence boundary but not a prosodic one.

The following sequence from Example (2) shows similar inconsistencies between prosody and syntax. The low rising intonation contour at the end of line 36 suggests continuation, although the sentence is syntactically complete. Line 37 was truncated (unfinished) syntactically, and line 38 was a complete syntactic sentence in itself.

31 *Buddy who's a … early riser anyhow,*
32 *was probably up … four o'clock,*
33 *and he went down there,*
34 *complained to the manager,*
35 *… so he,*
36 *.. cause it was not the .. the accommodation we were supposed to have,*
37 *we checked in about eight o'clock at night so it was,*
38 *in Mexico that you know is typical.*

Prosody, more than syntax, mirrors the flow of a speaker's thoughts. The analysis of the syntax and prosody in the production of discourse provides evidence that speakers do not always think in well-formed sentences but proceed to articulate a series of ideas until they feel they have reached a point of closure, a point that may or may not coincide with syntactic closure. At that point, their pitch falls, sometimes prematurely from a syntactic point of view. Another example that illustrates the interplay of syntactic and prosodic structuring can be found in Stop and Reflect 9.2.

Examples such as these constitute further evidence that ***sentences are composed online as speakers pull their thoughts together and decide how to verbalize them***. A similar conclusion emerges from examples where the same person talks about the same thing on different occasions. In Example (3), a woman talking about an incident at her apartment introduced her account of it – with continuing prosody after the first line – by saying:

(3) *… I was sitting there in my chair,*
… just eating my popsicle and-

On a later occasion, when she told the same story to a different listener, she split these ideas into two prosodic sentences in the opposite order, although syntactically they belonged together, as shown in Example (4).

(4) *I was just eating my popsicle.*
.. Sitting there in this chair.

The ideas expressed in the two IUs were the same, but the way they were distributed across sentences suggested that they had not been stored in the speaker's memory in precisely the form the sentences took.

STOP AND REFLECT 9.2 **PROSODIC AND SYNTACTIC STRUCTURING**

Consider the following excerpt from the Santa Barbara Corpus of Spoken American English (SBC: 0003). This is taken from a conversation between the speaker, her husband, and their friend as they are making dinner together in her kitchen.

a. …. *Let me see.*
b. … *What was I in here for,*
c. … *there's nothing worse than staring like a dope at your own refrigerator.*
d. … *Um,*
e. … *oh an egg.*

Are the intonation units substantive, regulatory, or fragmentary? What are the boundaries of the syntactic sentences? How do these match up with rising and falling intonation contours? Why do you suppose the speaker juxtaposes syntactic and prosodic structures in this way?

9.8 New, Accessible, and Given Activation States

In producing coherent discourse, speakers must introduce new participants, activities, situations, and concepts and relate them to what has already been said, and what is assumed to be in the active consciousness of the addressees. An idea (a participant, state, event, etc.) is considered **given** (or activated) if the speaker assumes that the addressee is currently focused on it; the information is metaphorically "lit up" or active in the person's consciousness. An idea is **new** if the speaker thinks it is unlikely that the hearer is focused on it; the speaker needs to introduce the idea, that is, to activate it, or "light it up" for the hearer. In addition, some ideas may not be actively focused on but may be peripheral in the addressee's consciousness, for example, an idea that had been mentioned earlier in the discourse. Such an idea would be considered to be **accessible** to the addressee, or "dimly lit" to continue the metaphor. Given, accessible, and new are referred to as **activation states**. ***Speakers must assess the activation states of ideas in order to determine how to refer to them; the form in which an idea is expressed will depend in part on this assessment.***

We have seen that language expresses the flow of a speaker's thoughts and that these thoughts are expressed in a series of intonation units, each about one to two seconds in length. Each IU conveys the focus of a speaker's consciousness just prior to or during the time the IU is being uttered. When we examine how ideas with different activation states are expressed in a stretch of discourse, we see that there is a limit to the amount of new information that can be included during each IU. We can see this illustrated by the beginning of Example (1).

1	Daughter:	*… Isn't that sád about that kid in the paper?*
2		*.. Who .. who's in a cóma?*
3		*He's a- the star .. baseball player at BK?*
4		*… And he got the schólarship to-*
5		*… He was the Gatorade player of the year?*
6		*.. Two years ago [and then he-]*

SIDEBAR 9.8
For more discussion of the way **given** versus **new** information is expressed in discourse, see Textbox 14.12.

The new information in line 1 was the judgment that the kid's predicament was sad. The remainder of this phrase, *about that kid in the paper*, conveyed an idea that the daughter assumed was already accessible to her mother, who she assumed had read the paper too. Once the idea of *the kid* had been introduced and activated, that idea became given information, so that it could be verbalized with nothing more than the weakly stressed pronoun *he* in lines 3 through 6. Thus, given information can be expressed with smaller and less robustly articulated sounds.

9.8.1 Identifiability

In English a noun or a noun phrase is often preceded by a definite or indefinite article: *the* or *a*. At the beginning of Example (2) the noun *story* was preceded by the indefinite article *a* in lines 1 and 2 (the latter being followed by the modifier *shaggy dog*). When the same referent, *story* was mentioned in line 4, it was preceded by the definite article *the*.

1 Alan: *… I got a story to tell you,*
2 *a shaggy dog story,*
3 *but as long as we're talking about that recorder and six-hundred dollars,*
4 *… I'll tell you the story.*

The traditional terms "definite" and "indefinite" are misleading, because the distinction does not involve "definiteness" in its ordinary sense. It is rather a matter of **identifiability: *whether or not the idea expressed by the noun is assumed to be already identifiable by the listener***. In line 1, the idea of the story was not shared knowledge and line 2 only amplified that knowledge. However, once it had been introduced in those two lines, its status changed, and by line 4 it could be preceded by *the*, signaling the speaker's assumption that this story could now be identified.

Similarly, line 8 introduced the idea of a trip assumed to be previously unknown to the listener and thus expressed as *a trip*.

7 Alan: *.. Ray and I and Sue and Buddy,*
8 *… took a trip,*
9 *… to Mexico City.*

In contrast, by line 17, the trip was identifiable and could be expressed as *the trip*.

17 Alan: *… sometime in sixty-eight we took the trip,*

The following sequence illustrates greater complexity in this use of the definite and indefinite articles. Alan first said:

23 Alan: *.. couldn't think of the name of the hotel,*
24 *it wouldn't mean anything now,*

He could assume that the listener would know, based on prior mention of a trip to Mexico City, that he and his wife had stayed in a hotel, and also that the hotel undoubtedly had a name. This context made the ideas of both the hotel and its name identifiable. It would have been inappropriate to say *couldn't think of a name of a hotel*, because it would have implied that no hotel had yet been chosen. At this point he might have gone on to say *but the hotel was fabulous*, but what he said instead was,

25 *but we ended up in a … fabulous hotel*,

In effect he made a new start by explicitly introducing the hotel as if it had not been mentioned before, letting it now become the setting for the room change that was described in what followed.

In Example (1), a number of ideas were identifiable because they were accessible from the context or from the listener's prior knowledge, as with *the paper, the star baseball player, the scholarship*, and *the Gatorade player of the year:*

1 Daughter: *… Isn't that sád about that kid in the paper?*
2 *.. Who .. who's in a cóma?*
3 *He's a- the star .. baseball player at BK?*
4 *… And he got the schólarship to-*
5 *… He was the Gatorade player of the year?*

Identifiability in English is expressed not only by *the* but also by demonstratives like *that* and pronouns like *he*, both of which are illustrated in this example. Evidently the daughter was able to refer to *that kid in the paper* because the words *in the paper* identified which kid it was, and because she assumed that her mother had already read the article in question.

9.8.2 Subjects

The grammatical subjects of clauses usually express ideas that are both identifiable and given, as with the three examples of *he* in lines 3 through 5 above. That is not the whole story, however, as illustrated by the following sequence from Example (1). The grammatical subjects *his younger brother, the article, all the family*, and *sports* do not qualify as given ideas, but as accessible ones.

13 Daughter: *… And his younger bróther*,
14 *played at BK on the fóotball team*.
15 *… And I gue-*
16 *it was the pa-*
17 *the árticle was about you know how*,
18 *… they're all going to-*
19 *all the family's gonna go to the gáme today because*,
20 *.. spórts are very important*.
21 *.. In his [fámily] you know*,

The ideas of the younger brother and his family were accessible from shared knowledge of the kid's background. The idea of *the article* was accessible from the mention of *the paper* in line 1. The idea of *sports* was accessible from prior mention of baseball and football.

Syntactic subjects, in short, although they are most often given, are sometimes instead accessible, although they are still identifiable. That may be especially true in a conversation between two people who share as much prior knowledge as a mother and daughter. Syntactic subjects, on the other hand, seldom refer to new ideas that are non-identifiable. The study of discourse reveals that ***information of different types receives different grammatical treatments, thus that grammatical structures are used to play particular functions in discourse.***

CHAPTER SUMMARY

We have seen that language is usually produced in a series of brief spurts or intonation units that are usually restricted to the expression of a single new idea. A larger level of discourse is realized in topics, or coherent idea clusters. Topics are too large to be focused on in their entirety; they are navigated in a series of IUs that express the included ideas. The direction of the navigation may be guided by the interaction between different parties to a conversation, as in Example (1), or by a conventional schema like the narrative schema that was illustrated in Example (2).

Discourse structure influences words and sentences in a variety of ways. Sentences do not always express stable elements of thought but are composed online as a person is talking. Ideas may be new, accessible, or given, thus determining whether they are expressed with prosodically prominent nouns or with weakly stressed pronouns. They may also be identifiable or non-identifiable, as expressed by the presence of the definite or indefinite article. The subjects of clauses are usually both identifiable and given, although sometimes they are accessible from the context or from prior shared knowledge. The study of discourse and the way it is structured demonstrate that syntax cannot be adequately explained in isolation from the larger context in which words and sentences occur.

SUGGESTIONS FOR FURTHER READING

Chafe, **Wallace**. 1994. *Discourse, consciousness, and time: The flow and displacement of conscious experience in speaking and writing*. University of Chicago Press.

Further discussion of prosodic phrases (intonation units), activation cost, identifiability, topics, and other discourse properties of both spoken and written language.

Gee, **James Paul**, and **Michael Handford** (eds.). 2012. *Routledge handbook of discourse analysis*. London and New York: Routledge.

Tannen, **Deborah**, **Heidi E. Hamilton**, and **Deborah Schiffrin** (eds.). 2015. *The handbook of discourse analysis*, 2nd edn. Oxford: Wiley Blackwell.

These two handbooks provide discussions of a variety of approaches to the analysis of discourse by a wide range of authors representing different backgrounds and interests.

EXERCISES

1. Use the following narrative (slightly edited from a real conversation) as a source of data.

Last summer I was hiking with my brother in Yosemite, and we were almost to the lake where we were going to go, and the air was pretty thin. And there were two women hiking up ahead of us. We got to a rise, and the lake was right there where we were going to camp. And the two of them got to the rise, and the next minute they just fell over. Totally. (You're kidding.) I guess the stop was just too much, and both of them just totally passed out. They both came to life very quickly, but I guess the hike, and then all of a sudden stopping, and the oxygen thing must have really confused them. It was really odd.

i. Identify the parts of the narrative schema. (Not all the parts need be present.)
ii. Find all of the examples of the definite article and explain why each noun phrase is identifiable.
iii. Find all of the syntactic subjects and determine whether each of them expresses given or accessible information. Why do you suppose the speaker avoided saying "two women were hiking up ahead of us"?

2. The following narrative is another slightly edited excerpt from a different conversation.

Steve and I went skiing that day. Harsh voice: *God! It was really windy! When we get to the top of the chairlift, it was like you were a clapper on a bell you know, when you went to get off, and we had to land like that you know, but a huge gust came by, just as we were landing. We were gonna like-* Falsetto: *Aaah! You know we were coming in like this, you know, and, you know, so we'd wait to-* Shouted: *All right now! Zhoom! We jumped off.* Laughter: *It was great!*

i. Identify the parts of the narrative schema. (Not all need be present.)
ii. Try to imagine the special voice qualities that are suggested by the words added in italics. What do these voice qualities add to the discourse?
iii. There were five occurrences of the phrase *you know*, an expression that occurs very often in modern colloquial conversation. Linguists disagree on its function, but discuss briefly what you think its function might be.

3. Read through the following stretch of conversational discourse (edited from SBC: 003 "conceptual pesticides"):

1	ROY:	*Do you have a particular, um,*
2		*use for the red peppers,*
3		*as opposed to the yellow or green peppers.*
4	MARILYN:	*No, no.*
5		*It was all .. salad peppers.*
6	ROY:	*It's all salad peppers.*
7	MARILYN:	*Mhm.*
8	ROY:	*.. In that case I will use a yellow pepper for this evening.*
9	MARILYN:	*.. Oh, .. fabulous.*
10	PETE:	*What can I do.*
11	MARILYN:	*Would you like to … string the beans?*
12	PETE:	*Sure.*
13	MARILYN:	*Man that's a big hunk of fish.*
14	PETE:	*Where do you want 'em put?*
15	MARILYN:	*Shit, it's a huge–*
16	PETE:	*Are they just going .. on that? Or …*
17	MARILYN:	*Uh … you wanna put 'em in a .. colander,*
18		*and then … wash 'em?*

i. Give one example each of an intonation unit from this excerpt which is (a) substantive, (b) regulatory, and (c) fragmentary.
ii. Give one example each of an intonation unit from this excerpt that performs each of the following functions:

a. Introduction of a topic
b. Amplification of an idea
c. Clarification of identity of a referent

d. Correction/contradiction of a previous point
e. Indication of agreement or disagreement
f. Articulation of activities of referents
g. Expression of emotions (like surprise), attitudes, or evaluations

4. Record, transcribe, and analyze a short narrative. Find someone who is willing to briefly describe an important event in their life. Here are some useful prompts:

- What was your favorite travel experience?
- Tell me about the day your child was born/you met your partner.
- What is the closest that you have come to death?
- Tell me about an experience with your father/mother/favorite teacher that had an impact on your life.

i. Record the conversation. You can use a phone or computer as a recording device.

- Ethics: After you turn it on, tell the person that you are making a recording, that you will use the recording for a school assignment, and that you will not use it for any purpose without their permission. Tell them that if they would like a copy of the recording and/or your assignment, you will provide it to them. Ask them if they understand and agree to this.
- Have a conversation with the person, giving them a set of prompts, and ask them to choose what they would most like to talk about.
- Have the person tell the story, but do it as part of the natural conversation; you don't need to be quiet, but can comment, acknowledge with *uh huh* or other backchannels, or ask questions.
- Record for at least two minutes.
- When you are done, thank the person for their participation.

ii. Carefully listen to the conversation several times.
iii. Transcribe the conversation.

- If it is much longer than two minutes, then choose a section at least two minutes in length that contains a coherent narrative or narrative chunk. If it is only a chunk of a narrative, summarize the other parts of the story.
- Do your best to break it into intonation units, putting one unit on each line.
- Number each line.
- Mark the speaker name with initials at the beginning of each turn.
- If two speakers are talking at the same time, put the transcription in square brackets, for example:

S: *I don't think [you should go]*
L: *[Mom, I've got to!]*

Be sure that BOTH overlapped portions are in brackets.

- Do your best to transcribe terminal pitch contours, following the conventions in Textbox 9.2.
- If you think a particular word is being emphasized, put it in CAPS.
- If someone breaks off a line and abandons it, indicate that with two dashes:

S: *Maybe he's* --

- Be sure to transcribe backchannel responses such as "mm-hmm," "oh," etc.
- You can transcribe relevant non-linguistic sounds in double parentheses

S: *I hope not* ((cough))

iv. Analyze the narrative.

- Did the narrative follow the typical schema (see Section 9.6)? If so, state the parts of the narrative and indicate what line numbers contributed to each part. If not, in what way did it deviate?
- Describe the narrative in terms of topics and subtopics.
- Choose three sentences that occurred over more than one intonation unit. Referring to Section 9.7, discuss how the division of the speech into intonation units allows the speaker to present a series of ideas and mirrors the flow of thought.

10 Prosody

The Music of Language

KEY TERMS

- Segmental properties of speech sounds
- Suprasegmental properties of speech sounds
- Pitch
- Timing
- Intensity
- Fundamental frequency
- Intonation unit (prosodic phrase)
- Voice quality
- Creaky voice
- Harsh voice
- Prosodic styles

CHAPTER PREVIEW

We have seen that language is typically not produced in sentences isolated from commuicative contexts but is embedded in longer stretches of discourse and social interactions. Within this broader context, speakers need to direct their listeners' attention to particularly important parts of their utterances, and to convey a range of emotions and attitudes.

Speakers do not simply produce language as long sequences of consonants and vowels in monotonous strings of identical timing. Instead, they vary the rate, pitch, and volume of their speech to add nuance and meaning beyond what is conveyed by the words themselves.

Prosody is a cover term for such variations in pitch, volume, timing, and voice quality. These properties accompany the vowels, consonants, and syllables of spoken language. They function to delimit linguistic units like phrases and sentences while signaling relations between them. These properties also make certain portions of our utterances more prominent, and they are basic to the expression of emotion and attitude.

This chapter will present descriptions of various prosodic phenomena in discourse and methods for transcribing them. It explores some of the functions of prosody, including the organization and evaluation of ideas. It also discusses different types of voice qualities and how these, and other prosodic variables, are manipulated by speakers for rhetorical effect.

LIST OF AIMS

At the end of this chapter students will be able to:

- **list the properties of speech that are covered by the term prosody;**
- **list the four functions of prosody;**
- **listen to a sample of speech and identify its prosodic properties;**
- **relate those properties to their functions;**
- **transcribe a sample of speech and mark some of its prosodic properties;**
- **judge the effects of prosody in commercials, speeches, or other public uses of language.**

10.1 Segmental and Prosodic Properties of Speech

SIDEBAR 10.1

You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quiz, and accompanying audio files.

The sounds of spoken language have both segmental and prosodic properties. These two terms do not refer to different sounds, but to different aspects of the same sound, just as a painting has both form and color at the same time. The term "segmental" refers to the way sounds constitute **segments** of language, such as vowels and consonants. The term **prosody** refers to variations in four different aspects of sounds: their **pitch**, **volume**, **timing**, and **voice** quality. Sometimes these properties have been imagined as "riding on top of" the segments, and thus they have sometimes been called **suprasegmental**.

We begin with an example in which a woman, in the course of a conversation, says the utterance in (1).

(1) *Sure. You've got a real problem.*

The representation of spoken language here is spelled with ordinary English orthography, which is largely restricted to the segmental representation of sounds (see Textbox 10.1). This way of writing language is familiar to all of us. It captures the bare ideas that were communicated but leaves open such factors as the timing of those ideas, which ideas were emphasized, how they were related, and the speaker's attitude toward them. To be sure, the fact that the words in (1) were distributed across two separate sentences, both of which ended with a falling pitch, is suggested by the capital letters and the periods, but that is about as far as ordinary writing usually goes in terms of representing prosody.

To know exactly what (1) sounded like when it was spoken, one needs to hear it. Nevertheless, acoustic displays, such as that in Figure 10.1, can be useful in providing visual representations of several kinds of prosodic features. The words at the top are distributed according to their relative timing. We can see that the words *sure* and *problem* occupied more time than the others, whereas the sequence *you've got a* was uttered rapidly. Directly below the words is a **waveform** that shows how positive and negative energy were distributed across the 1.5 seconds occupied by the entire sequence. We can see a pause, shown at the top with three dots and measurable as 123 milliseconds, which intervened between *sure* and what followed. ***The waveform also suggests the relative* intensity *of these***

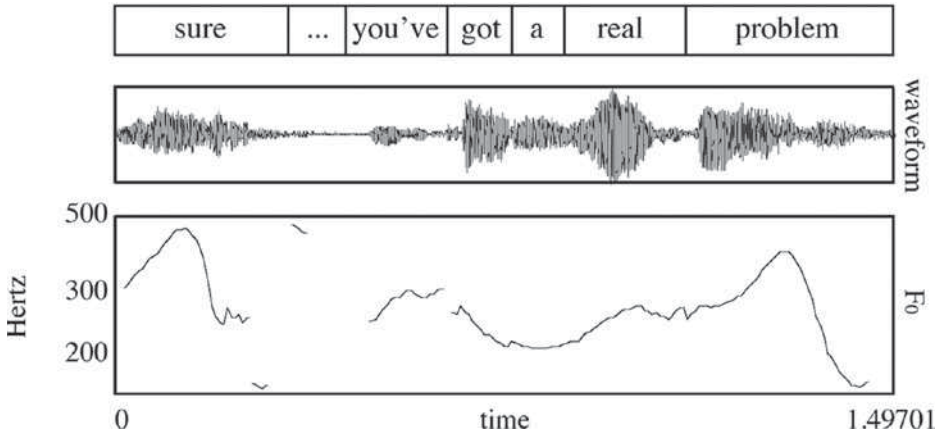


Figure 10.1 Waveform and fundamental frequency in Example (1)

words (perceived as loudness), the loudest being *real*, the next loudest *got* and the first syllable of *problem*, the next loudest *a* and the second syllable of *problem*, and the softest being *you've*.

TEXTBOX 10.1 **MEANINGS CONVEYED BY SEGMENTAL AND SUPRASEGMENTAL PROPERTIES**

The favorable treatment our writing system gives to segmental sounds reflects the fact that they are responsible for conveying *ideas*. A speaker may communicate ideas of events, states, people, and objects by expressing them with linguistic elements like verbs, nouns, and adjectives. In addition to meanings of that sort, language at the same time expresses meanings of other kinds; these meanings are the focus of this chapter.

The display along the bottom of Figure 10.1 shows the **fundamental frequency** (F_0) of the sound wave, with levels given in Hertz (cycles per second) at the left. ***Changes in F_0 are perceived roughly as changes in pitch***. Strictly speaking, there is a need to distinguish physical properties such as intensity and F_0 from perceptual properties such as loudness and pitch, which refer to the way our brains interpret those physical properties in particular contexts. However, the relation between physical sounds and our perception of them is close enough that we can view Figure 10.1 as a useful approximation to the loudness and pitch that we hear.

In the bottom display, we can see that the words *sure* and *problem* were both pronounced with a pitch contour that rose and then fell. Comparing those two rise–fall contours, we can also see that the baseline pitch of *sure* was higher than that of *problem*. The impression given by this raised baseline is that *sure* was an emotionally charged answer to a preceding question, whereas *you've got a real problem* provided more specific information that culminated in an emotionally tinged *problem*. This display also shows that *you've* and *real* were somewhat higher in pitch than *got a*, with those two last words being the least prominent part of the entire sequence in terms of pitch. It is noticeable that *real* was the loudest word

in the entire sequence, although *problem* was considerably higher in pitch. The fact that the word *real* functions to intensify the degree of the problem may explain its heightened volume, while the higher pitch on *problem* is consistent with its central role as the carrier of new information.

There is no universally accepted way of representing prosody in transcripts of speech; different conventions have been followed by different researchers, depending on their interests and goals. One way of capturing the prosodic features described above was first developed in Berkeley, California, and is now in use in Santa Barbara. It is illustrated in (2), where the sequence is divided into two intonation units that are represented on separate lines. An **intonation unit (IU)** is a prosodically coherent segment of speech, a spurt of language whose properties are discussed later in this chapter. In this chapter, a sequence of words within a single IU will be referred to as a **phrase**. The three dots at the beginning of (2b) indicate a pause. The rise–fall in pitch that characterized both *sure* and the first syllable of *problem* is shown using circumflex accent marks over the vowels, while secondary prominences are shown with grave accent marks (`) on *you've* and *real*. The periods at the ends of the lines show the falling pitches at the ends of each of the two intonation units. The arrows at the beginning and end of (2a) capture its raised baseline. A transcript of this sort can help a reader imagine or mimic something that comes close to the way the prosody was actually produced. You can listen to the sound files that accompany the examples in this chapter by going to the website.

Sound file for S&R 10.1

STOP AND REFLECT 10.1 **DIFFERENT MEANINGS FROM DIFFERENT PROSODIES**

How many ways can you say *You've got a real problem* to produce different meanings? Listen to your different prosodies and do your best to transcribe what you have said. What are the different meanings? When you are finished, listen to the associated sound file on the website to hear another speaker's various pronunciations of this sentence.

Sound file for (2)

(2) **a.** ↑*Sûre*.↑
b. … *Yòu've got a rèal prôblem*.

It is important to note that any given phrase can be produced with many prosodic forms; see Stop and Reflect 10.1.

10.1.1 Four Visual Displays

Figure 10.2 supplements Figure 10.1 by illustrating four different ways the properties of sound can be visually represented for further analysis. You can listen to the utterance of a woman saying *Oh I don't recognize that* in the sound file corresponding to Example (3) on the website. This utterance, like that in (1), occupies approximately 1.5 seconds. The relative timing display at the top, the waveform below it, and the F_0 display are already familiar from Figure 10.1. The graph just below the waveform pools positive and negative energy to give a clearer picture of variations in intensity. We can see that what this woman said was loudest at the beginning, with a peak on the pronoun *I*. After that, the volume gradually declined, only to increase again on the word *that*.

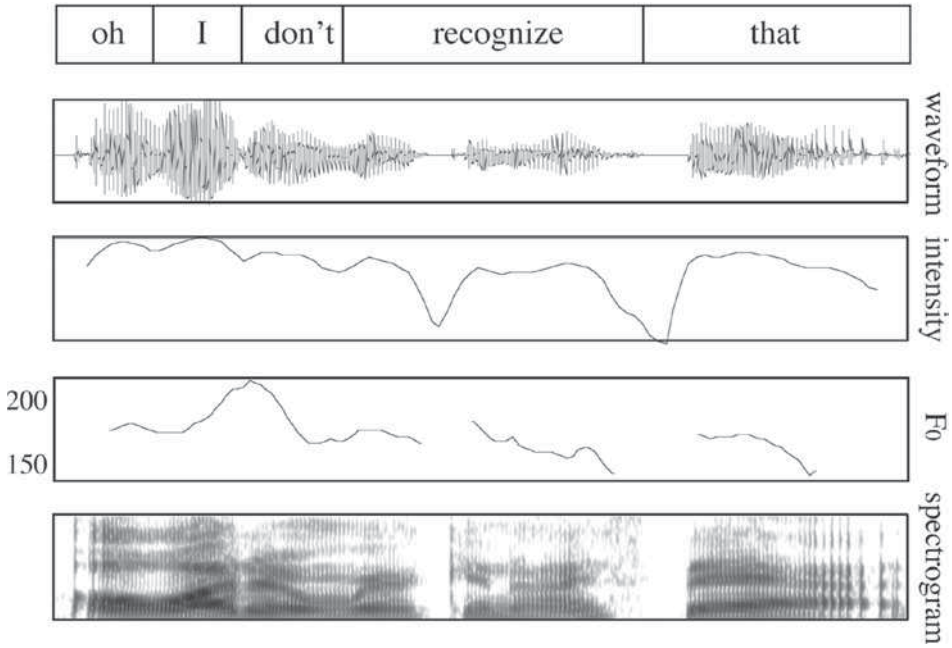


Figure 10.2 Four ways of visually displaying sound

SIDEBAR 10.2
For a discussion of the discourse functions of intonation units, see Section 9.5.

The F_0 display illustrates a tendency to perceive elements toward the end of an intonation unit as higher in pitch than they really are. Listening to this phrase, you might find that you hear the word *that* as carrying approximately the same high pitch as the word *I* near the beginning, even though you can see that its fundamental frequency is significantly lower. *I* was characterized by a rising pitch that peaked at 222 Hz, straddling the boundary between *I* and *don't*, at which point the pitch fell steeply. In contrast, the highest pitch during the word *that* was only 173 Hz. (For more on the use of technology to study prosody, see Textbox 10.2.)

TEXTBOX 10.2 **TECHNOLOGIES AND PROSODIC RESEARCH**

Prosody has been studied in various ways for a long time, but our understanding of it has been greatly enhanced by modern technology. First came the ability to record sounds mechanically and then electronically, and to replay them for further study. But more recent digital technologies have given us analyses of sounds that are more diverse and more accurate than anything that was possible in the past.

In earlier times, pitch, loudness, timing, and voice quality could be studied only through investigators' subjective impressions of what they were hearing, but those impressions could vary considerably with the "ear" and training of the investigator. Although much remains to be understood, technology has brought a new level of objectivity to prosodic research.

Today, high-quality recordings are made digitally with smaller and less obtrusive devices. The digital sound files are ready to be analyzed acoustically by a range of computer programs that are widely available. One open-access program commonly used by linguists is Praat, which is available for free download at www.praat.org.

TEXTBOX 10.2 (*cont.*)

On the left: Linguist Floyd Lounsbury recording the speech of Cayuga language speaker Lydia Greene in 1960 with the aid of a reel-to-reel tape recorder. On the right: current digital recording equipment.

The display at the bottom of Figure 10.2 is a **spectrogram**, where the relative amount of energy at different frequencies is indicated by degrees of darkness: greater energy is shown with darker shading. This display is useful in showing the timing of segments, the quality of vowels, and other aspects of sound that may include voice quality. In this case the **creaky voice** at the end of the word *that* can be clearly seen in the irregular vertical striations at the right end of the spectrogram, as well as at the end of the waveform at the top. One way in which this utterance might be transcribed is shown in (3), where the creaky voice on the last word is shown using a dotted underline. The circumflex accent (^) shows the rise–fall pitch contour that began on the word *I*. Other prominences are shown with the acute accent marks (´) on the first syllable of *recognize* and on the word *that*.

Sound file for (3)

(3) *Oh Î don't récognize thát.*

10.2 The Four Functions of Prosody

Prosody has several distinct functions, including the delineation of units and their relations, and the expression of prominences and emotions. These four functions are illustrated in Figure 10.3. ***Prosody serves both to organize and to evaluate the ideas that language conveys***. Organization includes delimiting speech units such as intonation units and sentences while at the same time signaling how those units relate to the flow of ideas. Evaluation includes the assignment of prominences to new and emphasized information as well as the expression of emotions and attitudes. The first three of the four functions at the bottom of Figure 10.3 are observable in any sample of speech, whereas emotion may or may not be evident (though even an absence of emotion can itself be regarded as an attitude).

All four of these prosodic functions are illustrated in the next example, taken from a conversation during which a woman related how she and her husband arrived home from

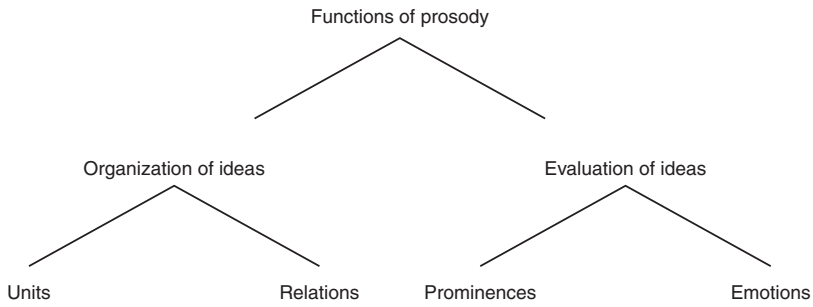


Figure 10.3 The four functions of prosody

a trip, only to find a stranger stealing lemons from a tree in their backyard. She introduced her story by producing the utterance in (4), which is written using standard English spelling.

(4) *And we're pulling up and I see this girl, who I'd never seen before, sort of dart out of our driveway.*

Sound file for (4)

Although the standard English orthography used in (4) provides only minimal prosodic information, it does contain some clues. The capital letter at the beginning and the period at the end suggest a prosodic contour whose boundaries coincided with the entire grammatical sentence. The commas surrounding "who I'd never seen before" reflect its syntactic status as a **nonrestrictive relative clause**, suggesting that this phrase might have been separated from what came before and after it through the use of pauses and a prosodic contour of its own.

10.2.1 The Delineation of Units: Intonation Units

SIDEBAR 10.3
See Section 9.4 for the introduction to the concept of regulatory versus substantive IUs.

As outlined in Figure 10.3, one function of prosody is to segment speech into intonation units like the six that are written in separate lines in (5). (See Sidebar 10.4 for a note on the transcription.) It is characteristic of speech to be uttered in brief phrases of this kind, usually approximately one second long and typically containing between three and five words. Many of these IUs convey substantive ideas, as is true of all except line (a) in this example. In (a) the word *and* links what was to come to the preceding talk about returning from a trip, while the pause filler *uh* helps the speaker hold the floor, both thus regulating the flow of information. IUs can thus be categorized as either **regulatory** like line (a), or **substantive** like all the others.

(5) Line-by-line sound files for (5)

a. *… ánd uh-*
b. *.. we're púlling up;*
c. *… and I sèe this gî=rl.*
d. *.. (who I'd néver seen before-)*
e. *sort of d=árt?*
f. *óut of our dríveway.*

Figure 10.4 tracks fundamental frequency through the entire sequence. The six intonation units and the intervening pauses are identified at the top. The pauses are shown with two or three dots, suggesting their relative lengths in a rough way. It can be seen that the pitch declines toward the end, and that it peaks during (b) and (c).

SIDEBAR 10.4
Transcription Note
Intonation units are transcribed on separate lines of text. Thus in Example (5), there are six IUs, each transcribed on a separate line. Dots at the beginning of an IU represent preceding pauses; two dots are used for short pauses and three for long pauses.

Intonation units are characterized by various properties, not all of which need to be present in any particular case. Often there is an initial pause: a period of silence presumably occupied by cognitive activity of some kind before the next IU is uttered. In Example (5), pauses preceded all but the last two IUs. Sometimes pitch and volume decline in the course of an IU, and an IU may begin rapidly and decelerate toward the end. This deceleration is especially evident in Figure 10.5, which shows the relative duration of the five words in (c). You can see that they becoming progressively longer over the course of the IU.

10.2.2 Signaling Relations: Terminal Pitch Contours

The most consistent property of an intonation unit is a **terminal pitch contour**, ***which not only delimits each phrase but also indicates how the phrase relates to the larger context***: whether, for example, there is more to come within the current sequence of ideas, or whether a sequence has been completed. Figure 10.6 extracts the terminal contours from each of the IUs in (5) and lets us compare their shapes.

The terminal contours in (a), *and uh*, and (d), *who I'd never seen before*, both descend to a level pitch, suggesting more to come. Compare this to the transcription in (5), above. You will note that the 'more to come' contour is transcribed with a hyphen (-) at the ends of these two IUs.

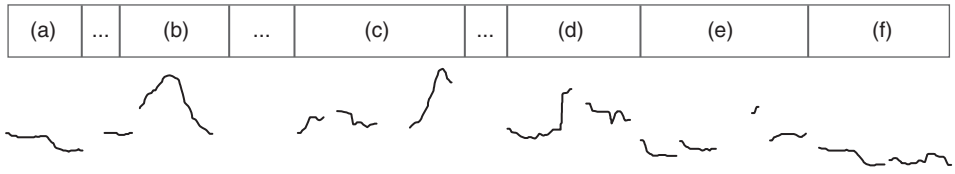


Figure 10.4 Segmentation into intonation units with overall declining pitch

Figure 10.5 Deceleration over the course of an intonation unit

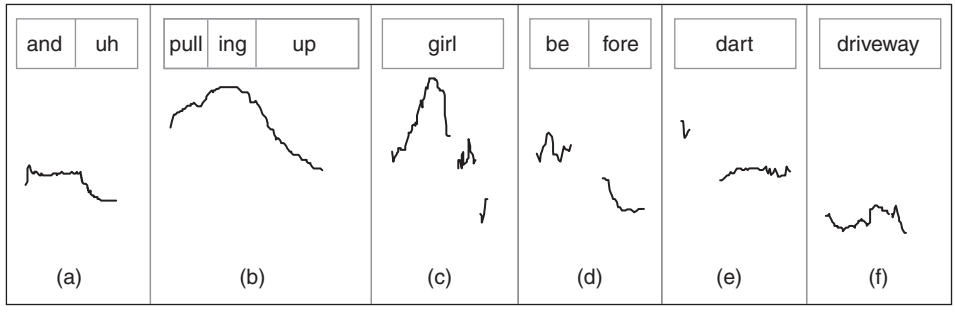


Figure 10.6 Terminal pitch contours extracted from Figure 10.4

TEXTBOX 10.3 **TRANSCRIPTION CONVENTIONS FOR PROSODY**

Terminal pitch contours		
Level pitch	hyphen	-
Partial fall	semicolon	;
Fall to bottom of speaker's pitch range	period	.
Rise	question mark	?
Lengthening of vowel or consonant	equal sign	=
Rise–fall on a single non-final vowel	circumflex	^
Prominent syllable (phrasal accent)	acute accent	´
Secondary prominence	grave accent	`

The terminal contour in (b), *we're pulling up*, has a rise on *pull-* and a fall on *-ing up*, also suggesting more to come but conveying a more active emotional involvement with what will follow. In (5) this contour is transcribed with a semicolon (;).

The word *girl* in (c) was also spoken with a rise and fall, but unlike *pulling up* it fell close to the bottom of the speaker's range, suggesting a temporary closure that was transcribed in (5) with a period (.).

SIDEBAR 10.5

While it is common cross-linguistically for rising pitch to indicate questions and falling pitch to indicate statements, some languages have different patterns. Textbox 2.7 discusses this with regard to the Native American language Chickasaw. The African-American English Language Profile, Section LP11.3.1, describes how the pitch on questions for some speakers of African-American English differs from that in other American English varieties.

The broken trajectory during the terminal contour in (c) reflects a harsh voice quality, expressing in this case a strongly judgmental emotional involvement. The rise–fall during *girl* is transcribed in (5) with a circumflex accent mark (^), and the lengthened pronunciation of this word with an equal sign (=).

In (e) the word *dart* rises slightly to a pitch in the middle of this speaker's range. This contour is typically associated with yes/no questions and thus is transcribed in (5) with a question mark (?). The initial *d* of *dart* is lengthened, and then pronounced with an explosive release that appears as a brief high pitch at the beginning of (e). The lengthening of this consonant is transcribed in (5) with an equal sign (=).

In (f), final closure of the entire sequence is signaled by a fall to the bottom of the speaker's range during *driveway*, transcribed in (5) with a period (.).

In summary, terminal pitch contours are critical parts of intonation units. They serve a wide range of important functions: they help delineate IU boundaries, mark relationships between IUs, differentiate questions and statements, and sometimes convey evaluative or emotional content. Particular transcription conventions have been designed to record these and other prosodic features (see Textbox 10.3).

10.2.3 Indicating Prominence

We have seen that prosody not only delimits IUs but also signals their relation to the larger context. Another function of prosody is to assign degrees of **prominence** to various linguistic elements at several levels. At the level of individual words, greater prominence or

stress is assigned to certain syllables, as illustrated in Figure 10.2 above by the prominence given to the first syllable of the word *recognize*. In that example, the prominence was a matter of higher pitch, whereas loudness remained relatively constant throughout the word. The position of stress in English words is the result of historical processes that took place at different times in the history of the language. Sometimes stress distinguishes different meanings, as the noun *cóntract* (a legal document) is distinct from the verb *contráct* (decrease in size). In the latter case the lesser prominence of the first syllable has led to a reduced vowel quality as well. In some languages prosodic prominence on certain syllables within words follows a more consistent pattern that serves to delimit the words themselves, as with the first syllable stress in Finnish, the final syllable stress in Armenian, or the pre-final syllable stress in Mohawk.

At a more inclusive level, ***entire intonation units may be more or less prominent with relation to other intonation units***. One way to measure the prominence of an IU is by measuring its **mean intensity**, the arithmetic average of the intensity measurements over the IU. Figure 10.7 plots the mean intensity in decibels of the IUs from Example (5). You can see that the IUs (d), *who I'd never seen before*, and (f), *out of our driveway*, are conspicuously less prominent than the others.

Another way to measure relative prominence is with tempo, since more rapid phrases are less prominent than slower ones. Prominence may be expressed by a lengthening of at least some of the segments. Figure 10.8 plots tempo in terms of syllables per second. You can see that (d), *who I'd never seen before*, is uttered more rapidly than the other intonation units. Thus, the reduced prominence of (d) is evident not only in its reduced volume but also in its faster tempo. Its lesser prominence was transcribed in Example (5) by enclosing it in parentheses. It was in fact a parenthetical remark.

Relative prominence also characterizes parts of intonation units. Figure 10.9 focuses on IU (b), *we're pulling up*, tracking both pitch (top line) and volume (bottom line). The word *we're* conveys information that was already **given** (the idea of the speaker and her husband), not

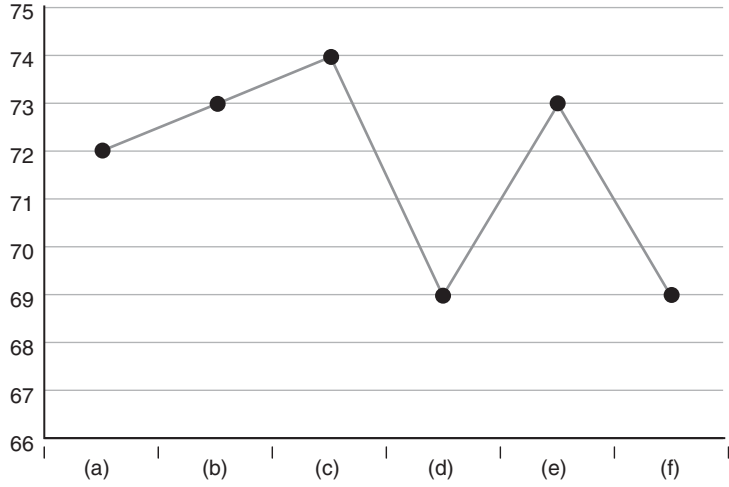


Figure 10.7 Mean intensity of the intonation units in Example (5)

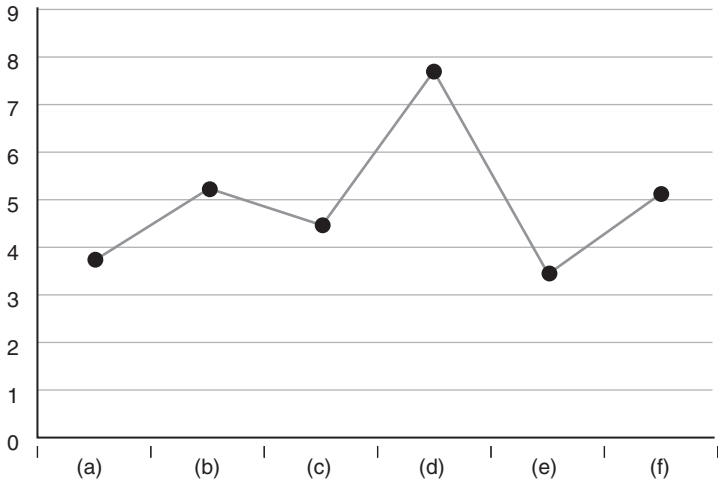


Figure 10.8 Syllables per second for the intonation units in Example (5)

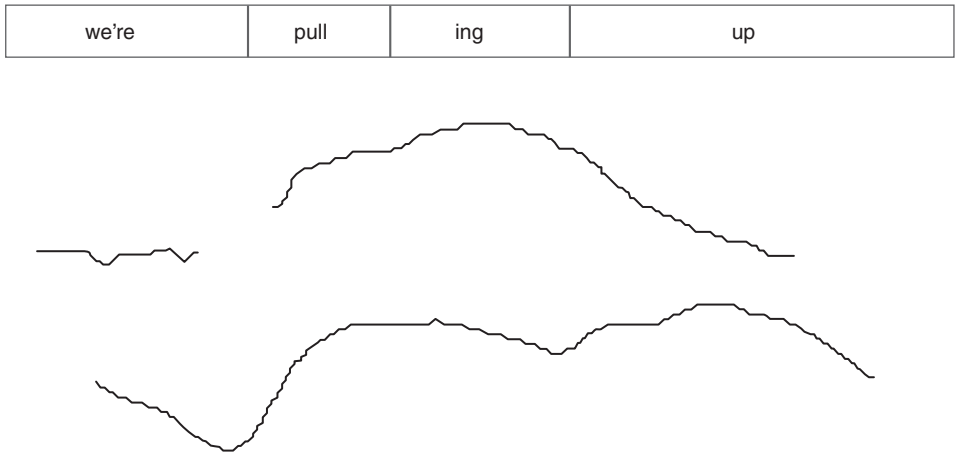


Figure 10.9 Prominence in pitch (top line) and volume (bottom) in Intonation Unit (b)

only because they had already been mentioned in the conversation but also because they were participants in the conversation itself. The **new** idea in this IU is conveyed by the phrase *pulling up*. After the relatively low pitch on *we're*, the pitch rises to a peak during the word *pulling*. With respect to volume, the less prominent word *we're* actually begins with the heightened volume that often characterizes phrase-initial words, but then the volume falls quickly to a low point before beginning to increase with *pulling up*, reaching a maximum during *up*. The decline in pitch during *up*, seemingly at odds with its volume, does not reflect a lack of prominence but was determined by the terminal contour assigned to this intonation unit. Thus,

SIDEBAR 10.6
For more discussion of given versus new information, see Section 9.8.

pulling up can be said to receive the **phrasal accent**, which marks these words as the most prominent phrase in this IU.

Figure 10.10 provides similar information for IU (c), *and I see this girl*. In terms of pitch, the most prominent element was the new idea expressed by *girl*, with a secondary prominence on *see*. Least prominent were *and, I*, and *this*. The prominence of *girl* was expressed with heightened volume as well, already anticipated at the beginning of *this*. As in the last example, there was increased volume at the very beginning of this IU.

10.2.4 Expression of Emotions and Attitudes

A major contribution of prosody is the role it plays in expressing emotions and attitudes. In Example (5) there were two places where the speaker's emotional involvement in what she was saying was conspicuously expressed by her prosody. One example is the word *girl* in IU (c) of Example (5). You can hear this in the corresponding sound file on the website, and you can see this both in the lengthening of *girl* (relative to the other words), visible in Figure 10.10, and especially in the rise–fall pitch contour of that word. The lengthening combined with the pitch pattern express the speaker's emotional attitude toward this girl that might be described as a feeling of disdain.

A different emotional prosody is evident in the word *dart*. Figure 10.11 shows a slight rise to a moderately high pitch on that word, suggesting a questioning attitude.

There is also an increase in volume that is evident at the bottom of Figure 10.11. You can see a dual peak of volume, first on the explosive release of the consonant "d" and then on the "art" portion that follows. The special treatment of the "d" is visible in a brief segment of higher pitch at that point, and in the spectrogram in Figure 10.12, where you can see a spike of acoustic energy accompanying the release of the "d." All of these factors reinforce a feeling of sudden swift movement that is conveyed by the word *dart* itself.

Sound file for (6)

A striking example of the prosodic display of emotion is provided in another conversation, during which one of the participants uttered the sentence in (6).

(6) *Thàt was the û==gliest set of shoes I ever saw in my lîfe.*

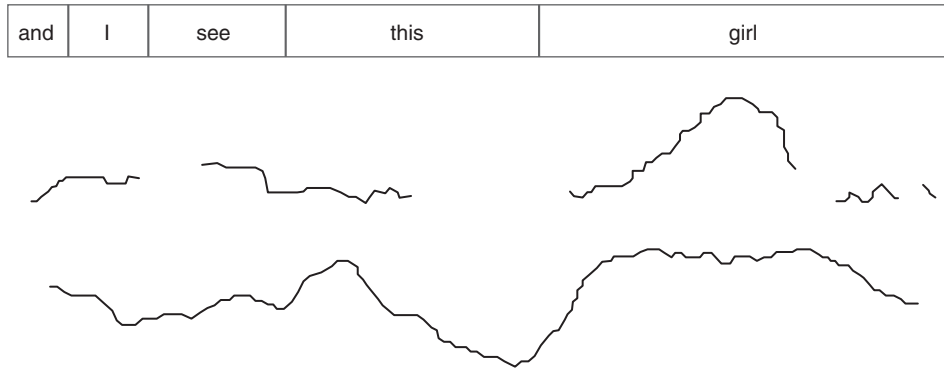


Figure 10.10 Prominence in pitch (top line) and volume (bottom) in Intonation Unit (c)

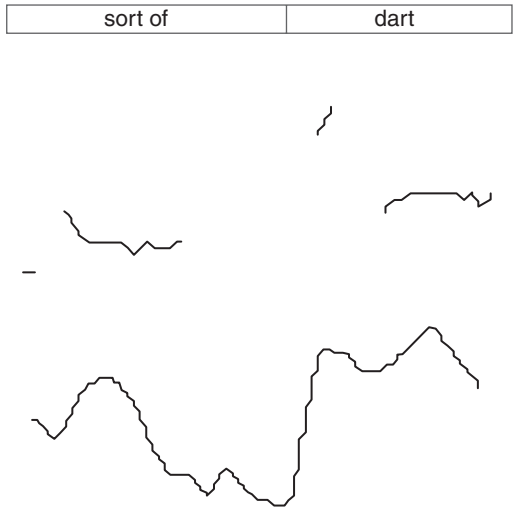


Figure 10.11 Pitch (top line) and volume (bottom line) in Intonation Unit (e)

The pitch pattern for (6) is shown in Figure 10.13. The initial vowel of *ugliest* was uttered with extreme lengthening and a very steep rise in pitch at the beginning, followed by a slow fall and leveling off, all of which capture the feeling of disgust this speaker felt toward the shoes. The final contour on the word *life* at the end shows a second rise–fall pattern, finishing off the entire IU with a continued expression of emotional involvement.

10.3 Special Voice Qualities

At the beginning of this chapter, prosody was defined as a cover term for variations in pitch, volume, timing, and voice quality. Aside from the creaky voice quality in Example (3), the examples so far have focused largely on pitch, volume, and timing. ***Voice quality is a more diverse feature than the others, involving various ways people modify a normal speaking voice, most often with special effects that are produced in the larynx.*** One example is **harsh voice**, produced by irregular vibrations that are superimposed on ordinary voicing. It typically expresses strong emotion, often of anger or fear. In the following example, the speaker is describing a childhood incident in which he was approached by a gang of bullies. When he saw them coming, he expressed his anxiety by saying:

SIDEBAR 10.7
To refresh your memory of the larynx and the ways it is used in producing sounds, see Section 2.1.2.

(7) *Here they â=re.*

Sound file for the word *are* in (7)

The harsh quality of the last word can be heard in the sound file for Example (7), and is visible in the waveform in Figure 10.14. Harsh voice resembles creaky voice, but the vibrations are usually at a higher frequency and there is a more extreme irregularity in the sound wave.

A different voice quality is laughter, which consists of spasmodic pulses of air that are usually (though not always) voiced as they pass through the larynx. Laughter comes in

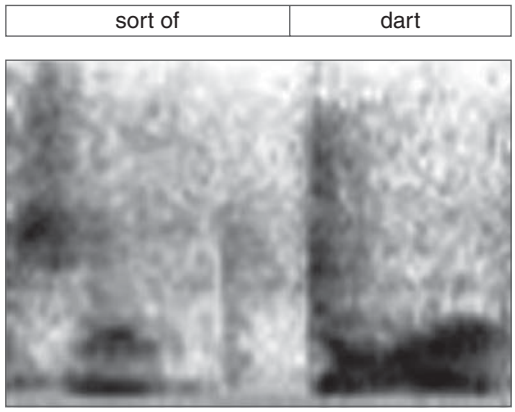


Figure 10.12 Spectrogram of Intonation Unit (e)

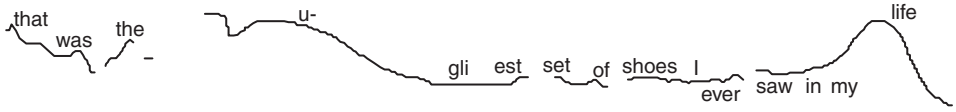


Figure 10.13 Fundamental frequency in Example (6)

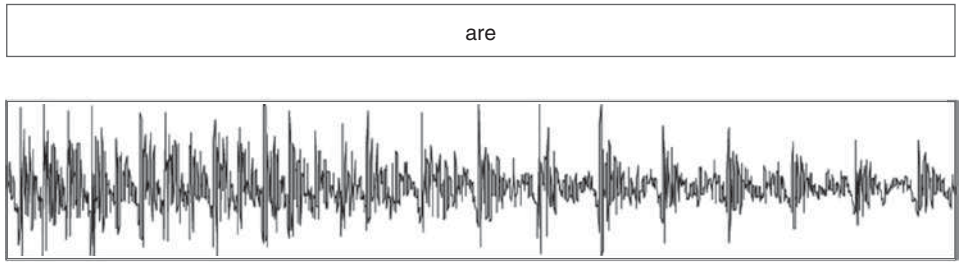


Figure 10.14 Harsh voice from Example (7)

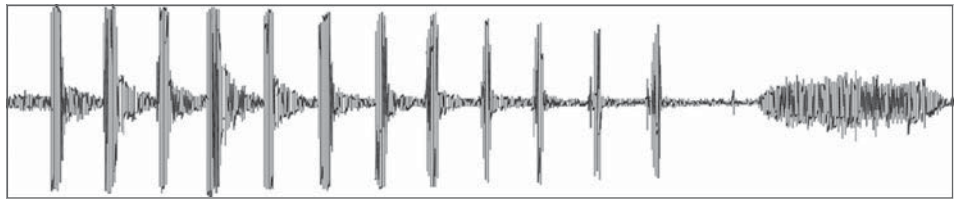
many varieties, but Figure 10.15 shows the waveform of a laugh that includes twelve voiced exhalations followed by a prolonged inhalation that serves to replenish the exhaled air. The laugh pulses are paced at a typical rate of slightly more than five per second. The final inhalation is also visible at the end of the waveform.

Another voice quality is **whispering**, where the vocal folds in the larynx do not come together as closely as in normal voicing. In Example (8), a man (Speaker A) lists possible occupations for his girlfriend (Speaker B), at which point she pauses and whispers to herself, *an explorer!* Her whispering suggests a private emotional involvement in this particular option.

(8) Sound file for Example (8)

a. *Being a doctor or â screen writer or an actress or a philanthropist or an explorer*
b. (whispered) *An explorer!*

The spectrogram in Figure 10.16 contrasts the man's statement in (8a) with the woman's exclamation in (8b). The final portion shows a diminished waveform, indicating reduced



Sound file for Figure 10.15

Figure 10.15 Laughter

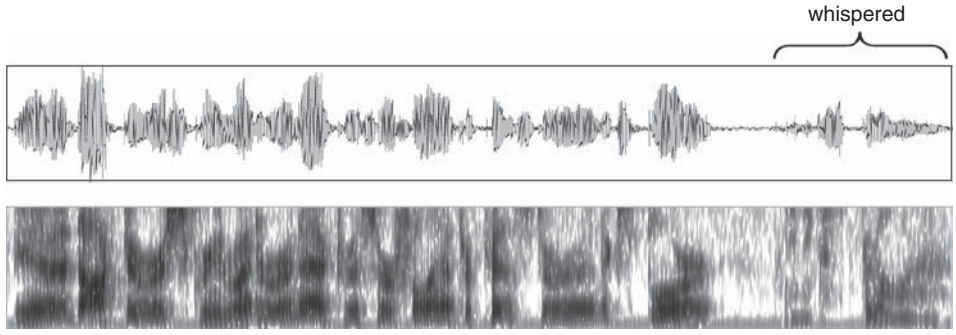


Figure 10.16 Whispering

intensity, as well as an attenuation of the acoustic energy that characterizes the normal voice quality of the man's suggestions; this acoustic energy is visible as blackness throughout the spectrogram.

10.4 Differing Prosodic Styles

All the examples so far were taken from recordings of face-to-face informal interactions. Conversational language is the most basic of all language uses. It is the way most of us use language most of the time, and it probably has been the dominant use of language ever since language evolved into its present form. Nevertheless, language is used in many other ways too: in speeches, debates, oral arguments, sermons, and so on, not to mention the many varieties of written language, from shopping lists to newspaper reports to novels. We have already noticed that ordinary writing does not in itself provide very many ways to mark prosody, but prosody inevitably enters the picture whenever written language is read aloud. ***Prosody can be manipulated for different rhetorical effects and can be a significant feature of speech styles***.

In (9) there is a brief excerpt from a famous speech whose written version has been reprinted many times, but whose audio and video versions are also easily accessible. The speech is powerful even in written form, but it is much more powerful with access to the sound. The orator's style was inherited from a long tradition in which prosody was exploited to add significantly to the effectiveness of the bare words.

Sound file for (9)

(9) *I have a dream that one day this nation will rise up and live out the true meaning of its creed.*

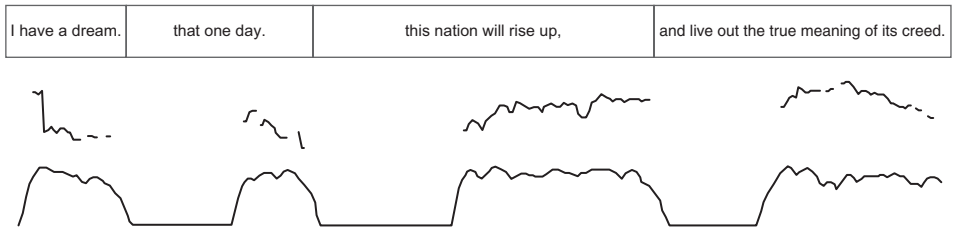


Figure 10.17 Dr. Martin Luther King Jr.'s oratorical style

STOP AND REFLECT 10.2 **PROSODIC INTERPRETATIONS**

As you read the speech excerpt in (9), try to imagine how it sounded. Then listen to the corresponding sound file. How did the prosody you heard differ from what you had imagined based on reading the written words?

Figure 10.17 shows the pitch contours of this excerpt (along the top) and the loudness contours (along the bottom). One obvious feature is the clear separation of the four IUs, separated by pauses of approximately a second and a half. The first two IUs each end with falling pitches that would otherwise be typical of the ends of sentences. The third rises to a higher pitch, and the final IU increases in pitch toward a climax on the words *true meaning*, with a falling pitch at the end.

This distinctive oratorical style, used here by Dr. Martin Luther King, Jr., was characteristic of a style of preaching widely used in African American churches. The prosodic structure is compelling, powerfully capturing the attention of the listener as it moves from IU to IU.

The skillful application of prosody is an important component of acting on the stage. William Shakespeare, like other playwrights of his time, wrote most of his characters' language in a fixed prosodic style known as iambic pentameter. Their speech was divided into separate written lines, each of which was further divided into five **iambic feet**, which are units composed of a sequence of two syllables, the second of which is stressed. A strict adherence to this pattern would impose the prosody shown in (10) on the beginning of *Henry V*, Act 4, Scene 1.

(10) **a.** *Now éntertáin conjécture óf a tíme,*
b. *when créeping múrmur ánd the póuring dárk,*
c. *fills thé wide véssel óf the únivérse.*

Try reading these lines aloud with strict adherence to the iambic pattern indicated with the accent marks. Notice how such a reading conflicts with a more natural prosody. Then ignore the accent marks and read the same lines again, this time trying to express the meaning of the words. Finally, listen to what one person did with this passage, and notice the extent to which he departed from iambic pentameter. The transcription in (11) captures some of his interpretation, with extra line breaks used to show variations in his timing. Imagine how dull the play would sound if actors performed it throughout with strict adherence to iambic pentameter.

(11) **a.** *Nów=.*
b. *.. Éntertáin conjécture of a time,*
c. *… when créeping, murmur,*
d. *.. and the póuring dárk,*
e. *… fílls the wí=de véssel of the úniverse.*

Sound file for (11)

Consider next a concluding excerpt from the 1944 movie *Gaslight*. The character played by Ingrid Bergman has discovered that her husband was using a variety of tricks to make her believe she was going mad. His goal was to have her declared insane so that he could acquire full rights to some expensive jewels that had belonged to her aunt, whom in fact he had murdered. In this final scene his treachery has been discovered, and his wife taunts him as he is tied to a chair. Try saying these lines aloud or to yourself with a prosody that captures the woman's emotions on discovering her husband's treachery, although she still feels a twinge of regret for this tragic conclusion to their marriage (see Stop and Reflect 10.3).

(12) *If I were not mad I could have helped you. Whatever you had done I could have pitied and protected you. Because I am mad I hate you. Because I am mad I have betrayed you, but because I am mad, I'm rejoicing with my heart without a shred of pity, without a shred of regret, watching you go with glory in my heart! Mr. Cameron come!* [She opens the door.] *Come Mr. Cameron take this man away! Take this man away.*

STOP AND REFLECT 10.3 **TRY THIS: HOW WOULD YOU DIFFER FROM BERGMAN?**

Try saying the sentence, "If I were not mad I could have helped you." When you say it, pretend that you wish you were not mad (although you are) because you genuinely want to help the person you love. Are you producing the passage with rising pitch, like Bergman did? How does varying the pitch change the effect of the passage? (Copyright law prevents us from putting a sound clip on this book's website; the clip can be found with a simple internet search.)

Figure 10.18 is a pitch trace of Bergman's voice producing this passage in the movie. The rising pitch conveys Bergman's growing emotional involvement, ending with a final sob on the word *away* that betrays her loss of hope for what she once thought was a loving relationship.

On a more prosaic level, all of us are frequently exposed to language that is read aloud, especially on television or radio. Speakers vary in their ability to make read speech sound as if it is spontaneous. This is illustrated by Examples (13) and (14), excerpted from radio announcements.

(13) **a.** *This Saturday.*
b. *We'll celebrate Presidents Day.*

Sound file for (13)

The prosody of (13) is produced with a restricted pitch range conveying a lack of emotional involvement. Furthermore, both IUs end with sentence-final falling pitches. This prosodic

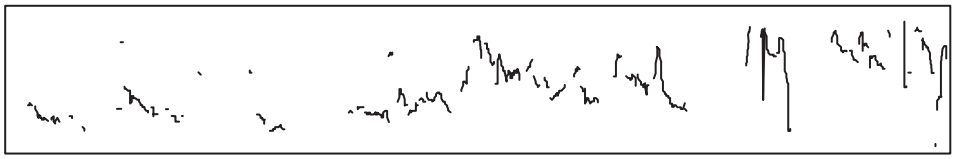


Figure 10.18 Rising pitch with increasing emotional involvement

pattern conflicts with the celebratory sense of the phrases. Try saying (13) as if you really meant it, not necessarily dividing it into these two parts. Then listen to how it was actually spoken.

By way of contrast, consider the excerpt in (14). The speaker here was skilled at sounding spontaneous even though he had a script in front of him. He breaks the sentence into three IUs, inserts the pause filler *uh*, and interrupts the third IU with a pause, as if he were searching for words. This final IU shows an expanded pitch range. Again, try saying this sequence yourself before listening to the way it was said by the broadcaster.

(14) Sound file for (14)

a. *Just park wherever you líke*,
b. *and uh,*
c. *listen to … a free cóncert.*

These examples illustrate the considerable extent to which prosody contributes to the effectiveness of speech. Pitch, volume, timing, and voice quality all play crucial roles in expressing the active involvement of the speaker and in communicating emotional and rhetorical impact to the listener.

CHAPTER SUMMARY

Even detailed written transcriptions cannot fully represent all of the nuances of spoken language; aural information is needed in order to capture the prosody as well. Prosody is a cover term for variations in pitch, volume, timing, and voice quality. Writing systems focus on segmental sounds and show prosody only in an impoverished manner. Prosody is always present as an accompaniment to the segmental vowels, consonants, and syllables of spoken language.

We have seen how prosody has multiple functions, one of which is to delimit linguistic units such as IUs and sentences while signaling relations between them. At the same time, it allows speakers to convey a variety of emotions and to direct their listeners' attention to particularly important parts of their utterances through prosodic distinctions of degrees of prominence. Prosody thus serves both to organize and to evaluate the ideas conveyed by language.

Voice qualities such as creaky voice, harsh voice, laughing, whispering, and sobbing are indicators of various emotional states. Manipulating prosody is an important component of acting, as observable in theater, film, television, radio, and the oral reading of written language of all kinds. Prosodic patterns can be characteristic of particular speech styles and can be used to heighten the effectiveness of oratory. The prosody used in spoken language, as speakers vary the rate, pitch, and volume of their speech, adds nuance and meaning beyond what is conveyed by the words themselves.

SUGGESTIONS FOR FURTHER READING

Chafe, **Wallace**. 2018. *Thought-based linguistics: How languages turn thoughts into sounds*. Cambridge University Press.

Couper-Kuhlen, **Elizabeth**, and **Margret Selting**. 2018. *Studying language in social interaction*. Cambridge: Cambridge University Press.

This textbook on the linguistic analysis of conversational interaction includes online chapters on the use of prosody for interactional purposes.

Cruttenden, **Alan**. 1997. *Intonation*, 2nd edn. Cambridge University Press.

This book is a useful introduction to prosody in general.

Edwards, **Jane A.**, and **Martin D. Lampert** (eds.). 1993. *Talking data: Transcription and coding in discourse research*. Hillsdale, NJ: Lawrence Erlbaum.

This book discusses various approaches to transcribing spoken language; see especially the chapter by Wallace Chafe titled "Prosodic and Functional Units of Language," pp. 33–43.

Szczepek Reed, **Beatrice**. 2011. *Analysing conversation: An introduction to prosody*. New York: Palgrave Macmillan.

This textbook provides an accessible introduction to the study of prosody in conversational interaction. Sound files for all examples are available on the book's website. Each chapter includes a series of practical exercises, with answers available at the back of the book, as well as explicit presentation of relevant scholarly articles.

Wennerstrom, **Ann**. 2001. *The music of everyday speech: Prosody and discourse analysis*. Oxford University Press.

This book discusses the role of prosody in casual conversations, oral narratives, courtroom testimony, and lectures.

EXERCISES

1. Sound file for (1)

The passage below, in which a woman is describing the layout of an apartment, has a corresponding sound file on the website. Listen to the sound file as you read through the passage. Here are her words:

if you go upstairs you're in a hallway and as you start down the hallway to the right it's like a living room and to the left is a bedroom and then if you continue further down there's uh a bathroom on the left and so the hall is real long

Figure 10.19 contains a tracing of her pitch contours, divided into six intonation units. Notice the steep fall to a low pitch that is marked by a very short line near the bottom of four of these segments.

i. Transcribe what the woman says, writing each IU on a separate line.
ii. Mark the terminal contours of each IU, using the transcription conventions given in Textbox 10.3.
iii. Mark the most prominent syllable in each IU by placing an acute accent mark (´) over its vowel.
iv. After each IU, write S for substantive and R for regulatory.

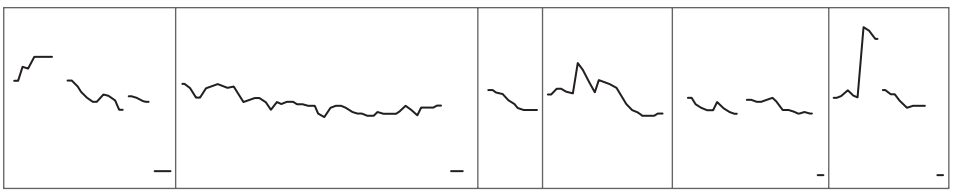


Figure 10.19 Pitch contour for sound file for Exercise 1

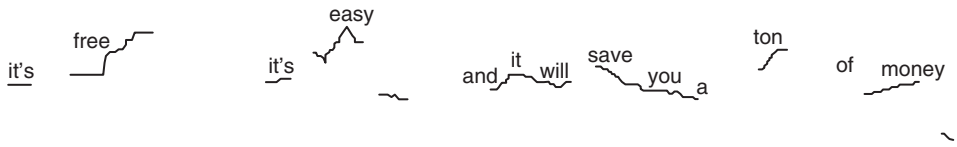


Figure 10.20 Pitch contour for sound file for Exercise 2

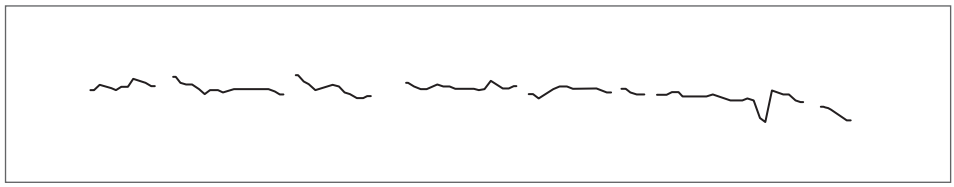


Figure 10.21 Pitch contour for sound file for Exercise 5(a)

Sound file for (2)

2. Listen to the sound file corresponding to Exercise (2), in which the speaker is urging people to buy something. Here is what he says:

it's free it's easy and it will save you a ton of money

A tracing of his pitch contours is given in Figure 10.20.

i. Transcribe what he says, writing each IU on a separate line.
ii. Mark the terminal contours of each IU, using the transcription conventions given in Textbox 10.3.
iii. Mark the most prominent syllable in each IU by placing an acute accent mark (´) over its vowel.
iv. Imagine how he might have pronounced the last IU using different prosody, and rewrite it to show that prosody.

Sound files for 3

3. Listen to the sound files that correspond to each of the short passages below (these are labeled Exercises (3a), (3b), and (3c)). Re-transcribe the data following the prosodic conventions covered in this chapter, marking as many distinctions as you hear.

a. "Becky's Shower"
I thought she told me at somebody's shower Becky's shower no somebody's shower at Becky's house
b. "Ceviche" (ignore singing)
If you'll eat if you'll eat more than that then I'll cook the whole thing if not then I'll make ceviche with the leftovers what do you think
c. "Where are they going to church?" (ignore the first overlapping utterance)

Speaker A: Where are they going to church are they going to CT
Speaker B: Uh-uh some little bitty church somewhere I don't know
Speaker A: Were they going to CT at one point
Speaker B: Uh-uh

Sound files for 4

4. Listen to the sound file for Exercise 4. Transcribe the passage, placing each IU on a separate line of the transcription and adding as much prosodic detail as possible. For each IU, state whether it is regulatory or substantive. Justify your analysis.

Sound file for 5

5. When politicians give a press conference, they usually begin with some prepared remarks before they answer questions from reporters. Here is a remark by former President George W. Bush at the opening of one of his press conferences; listen to the corresponding sound file, labeled Exercise (5a)

The House and the Senate are now considering my supplemental request for operations in Iraq and Afghanistan.

A tracing of his pitch contours is given at the top of this page in Figure 10.21.

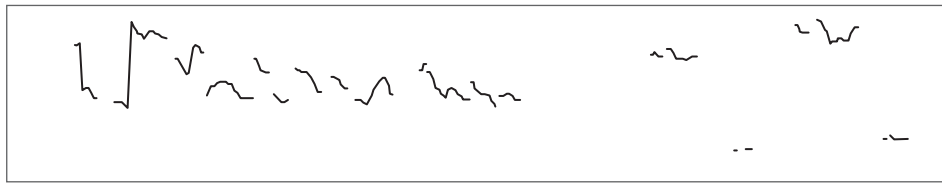


Figure 10.22 Pitch contour for sound file for Exercise 5(b)

Now listen to the sound file labeled Exercise (5b), which contains President Bush's answer to a reporter's question. Here is what he says:

Yeah I think it's I think it's a very interesting point you make in your question they're trying to send a warning basically what they're trying to do is is uh cause people to run you know.

i. Transcribe each of these selections, dividing them into IUs.
ii. Describe one or more differences between reading aloud and speaking spontaneously, as illustrated by these two samples.

6. Using your phone or another recording device, make a recording of yourself saying *He didn't give you the money* in at least four different ways, each having a different meaning. For each utterance:

i. Provide a prosodic transcription of each phrase.
ii. Explicitly write the full meaning of the utterance.
iii. State any inferences that the speaker intends the addressee to make.
iv. State the relationship between these inferences and the prosodic structure of the utterance.
v. Turn in the sound file of your utterances together with your analysis.

7. Find a video on YouTube, which includes a string of speech of at least 30 seconds, that you consider to have significant emotional content.

i. Give the web address of the clip, so that your instructor can access it later. Be sure to state the starting and ending time of the clip you are analyzing.
ii. Transcribe the clip, using the prosodic transcription conventions included in this chapter.
iii. Discuss any issues you have with the transcription. Do you think it is adequate? Why or why not?
iv. State which part of the clip (which IUs) expressly conveys emotion. Then discuss how the speaker's prosody accomplishes this.

8. Search YouTube for "Hamlet to Be or Not to Be." You will find a set of video clips, each featuring a different actor producing the famous soliloquy. Choose three, and for each:

i. State the name of the actor, provide the URL of the video clip, and the start and end times of the utterance *To be or not to be: That is the question.*
ii. Provide a detailed prosodic transcription. Note any changes in voice quality.
iii. Describe the tempo of each clip and state which syllables are longest. Does the actor pause? If so, where in each clip?
iv. Compare and contrast the clips. How has each actor used prosody and to what effect?

11 Language in the Social World

KEY TERMS

- Identity
- Language ideology
- Linguistic repertoire
- Linguistic variety
- Sociolinguistic justice
- Sociolinguistic variable
- Style
- Translanguaging
- Identity
- Language ideology

CHAPTER PREVIEW

This chapter focuses on language as a fundamentally social activity. All of the structural features of language discussed in previous chapters can be used for important social functions. Because language is the basis of human communication, it always occurs in a social context, and the use of language both shapes and is shaped by social relationships, activities, structures, and processes.

The chapter begins by considering differences within a single language as well as differences between languages. We then consider two different social aspects of language: the creative social positions that can be taken through language, and the rigid ideologies that circulate regarding language and its users, which reproduce stereotypes and social inequality. The chapter also discusses the role of linguistic activism in supporting social justice in and through language.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **characterize some of the ways that identity is created through language;**
- **refute language ideologies that value some linguistic varieties or practices over others;**
- **describe the principle and practices of language variation;**
- **describe the principle and practices of linguistic diversity;**

- **explain the relationship between language variation and language change;**
- **characterize communities of practice;**
- **distinguish between correlationist and constructionist views of language and identity;**
- **identify some of the challenges involved in studying gender differences in language use;**
- **identify the forms and social functions of specific linguistic features in language data;**
- **describe some of the ways that linguistic activism can promote sociolinguistic justice.**

11.1 Introduction

SIDEBAR 11.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, and vocabulary quizzes.

Hello. Hi.
G'day.
Good afternoon.
Hi there!
Hey.
Howdy!
How you doin'?
Whassup?
¡Hola!

Every day, in every encounter, from the very first moment you begin to speak, you indicate something about yourself, your addressee, and your current situation. In some sense, each of the utterances listed above "says the same thing": each one functions as a greeting. But from another perspective, these utterances say very different things; they may be used by different kinds of speakers, to different kinds of addressees, and in different speech situations (see Stop and Reflect 11.1).

STOP AND REFLECT 11.1 **THE SOCIAL MEANING OF GREETINGS**

- Which of these greetings would you use? To whom would you use each one? In what situations?
- What other greetings do you use that do not appear in this list? When and to whom do you use each one?
- Which of the greetings would you never use? Who do you think uses them and in what situations?

You probably would not use all of the above greetings to all addressees, and you might use some of them only in special situations. For instance, you might say *Good afternoon* only in a formal context (depending on your age and geographic region), or perhaps you would say *Hi there!* only to a young child. Even *Hello*, which English speakers often think of as the most basic greeting, is likely to be something you use only to strangers or in formal settings (or perhaps on the telephone). You might use some of the above greetings every day, while you might never use others. And regardless of whether these greetings occur in your own speech, you probably have ideas about the sort of speakers who use them: perhaps, for example, you associate *G'day* with Australians and *Whassup?* with youth. Some of these forms may also take on different meanings depending on who uses them. A bilingual Mexican American student might use *¡Hola!* with her friends to signal their shared identity,

while a white American student who doesn't speak Spanish might use the same greeting with her friends to show that she's feeling light-hearted – although this sort of outgroup use might be offensive to her Mexican American classmate. In each case, the language that we use indicates to others how we want to be seen: as a member of various social groups based on such factors as age, gender, sexuality, region, race, ethnicity, and so on, and also as a particular kind of person within those groups. But of course listeners may or may not go along with our self-representations. The examples above indicate that language does not only convey information, nor does it only perform interactional functions such as greeting. Our language also indicates how we see others and our relationship with them: friendly or respectful, similar to us or different from us – imagine, for example, what would happen if you greeted a close friend with a polite *Good afternoon*. Moreover, the way we speak indicates how we understand our current social situation: formal or casual, serious or playful. At the same time, language also serves as a badge of **identity** – that is, the social positioning of self and other. With every utterance, we display our own identities and assign identities to other people, even when we're not talking about identity at all. In other words, language involves both semantic meaning (what our words refer to) and social meaning (what the linguistic choices we make communicate about us or how they are perceived).

SIDEBAR 11.2
Social meaning is part of the broader context that informs pragmatic interpretation, the subject of Chapter 8.

The discussion above also suggests that ***we have beliefs, impressions, and expectations about how we ourselves and others use language.*** We view certain linguistic forms as characteristic of or appropriately used by some social groups and not others (see Stop and Reflect 11.2).

STOP AND REFLECT 11.2 **GREETINGS AND SOCIAL EXPECTATIONS**

- What sorts of greetings might be socially expected more from women than men? What sorts of greetings might be seen as inappropriate for each gender?
- What sorts of greetings might be socially expected more from speakers from some racial or ethnic groups rather than others? What sorts of greetings might be seen as inappropriate from members of each group?

Such social expectations are rarely completely accurate and often are entirely wrong. In most cases, individual speakers' language use is far more complex than we might expect based on their group membership. For instance, many people think that women are more likely than men to use polite greetings, but it is easy to find counterexamples to challenge this notion. Our beliefs about language and language users are rarely neutral: we tend to perceive some forms of language as "better" – more correct, more pleasant, more intelligent-sounding – than others. For example, we might view greetings like *Howdy* or *How you doin'*? as less "correct" in some way than their counterparts *How do you do?* and *How are you doing?*, but we might also feel that they sound friendlier than a more formal greeting. Such beliefs are often strongly held and widely shared, and they have real-world consequences for how speakers are perceived, but they are based in prescriptive attitudes, not descriptive

linguistic facts. From the viewpoint of linguists, all **linguistic varieties** (a cover term that includes languages, dialects, and speech styles and registers) are equally grammatically correct, cognitively complex, and sufficient for their users' social purposes. In everyday life, however, some forms of language are typically highly prized, while others are devalued. Culturally shared ideas about language and its users that advantage some groups of speakers over others are known as **language ideologies**. These ideologies play an important role in reproducing social inequality in two interrelated ways. On the one hand, language ideologies encourage listeners to accept without question that some ways of using language are inferior to others; it is no coincidence that such ways of using language are mostly associated with groups that are marginalized socially and politically. On the other hand, language ideologies provide a kind of camouflage for discrimination against less powerful groups. Racism, xenophobia, classism, sexism and misogyny, homophobia, transphobia, and other forms of social inequality are all supported by ideologies that use language as a stand-in for social differences. Those who espouse these ideologies may deny that they have any prejudice or bigotry toward the group itself – but linguistic discrimination is discrimination nonetheless.

While language ideologies work to perpetuate the status quo, competing language ideologies that explicitly value and support the language use of less powerful groups can offer a challenge to these dominant beliefs. For example, in the hypothetical case described at the beginning of this chapter, the Mexican American student may negatively react to her white classmate's playful use of a Spanish greeting because Spanish speakers in the United States have faced a long and ongoing history of language-based discrimination and harassment. Many speakers from oppressed groups may have an ideology of **linguistic ownership**, which views certain ways of speaking (whether individual words and phrases or entire languages) as cultural property that should not be lightly used by outgroup members.

SIDEBAR 11.3
For an example of how language ideologies have shaped spelling reform, see the Indonesian Language Profile, Section 12.4.1.

This chapter explores these two intertwined social aspects of language: language use as a resource for displaying identity, and language ideologies as a means for reproducing or resisting power. Both of these aspects of language crucially involve **indexicality**, or the association of a linguistic form with a context-specific meaning (*to index* literally means 'to point to'). The indexical meaning of any given linguistic form is not arbitrary or necessarily agreed upon, but depends heavily on competing language ideologies that variously protect and challenge the power of dominant groups.

11.2 Linguistic Diversity and Language Variation

The interdisciplinary field of **sociocultural linguistics** investigates the vast range of interactional, social, cultural, and political (i.e., power-based) uses and meanings of language (the term *sociolinguistics* is also sometimes used in this broad sense as well as to refer to a more specific set of approaches to the study of language and society). The possibility of endowing

language use with social meaning depends on having more than one way of "saying the same thing," and this in turn relies on two fundamental principles of sociocultural linguistics:

1. The principle of linguistic diversity: In most places around the world, it is typical and unremarkable for multiple languages to be used within a single community, by a single individual, within a single interaction, and sometimes within a single utterance.
2. The principle of language variation: Variability is inherent in language; that is, it is normal and expected for speakers to speak in different ways due to social, situational, linguistic, and other factors.

As a result of these two principles, all speakers possess a wealth of linguistic resources for carrying out their social and interactional goals in a variety of cultural contexts. However, in some societies, dominant language ideologies reject these fundamental linguistic principles. Textbox 11.1 discusses one such ideology.

TEXTBOX 11.1 **THE MONOLINGUAL IDEOLOGY**

In some countries, there is strong ideological resistance to the principle of linguistic diversity, particularly among people who speak only the politically dominant language. The ability to speak only one language is known as **monolingualism**. Although monolingualism is relatively unusual around the world, in nations with a strong monolingual ideology, speakers of nondominant languages may face disapproval, discrimination, and even criminalization. For example, in the United States, people who publicly converse with friends or family members in a language other than English may be scolded by monolinguals who overhear them, and workplaces may restrict employees' use of other languages among themselves, even when this enables them to perform their work better. In several cases, parents who speak languages other than English have had their children removed from their care. Such discriminatory policies and practices have been ruled violations of civil rights by US courts. However, monolinguals' hostility to other languages remains a serious social problem in the United States and some other countries.

Even when a speaker is using the dominant language of a society, they cannot escape language ideologies. Most obviously, the prescriptive ideology that many people encounter in schools and other institutional contexts demands that all language users adhere to a single standard variety, but this requirement violates the principle of language variation (see Stop and Reflect 11.3).

STOP AND REFLECT 11.3 **LANGUAGE WITHOUT VARIATION?**

Is it possible for everyone to speak exactly the same way? Is it possible for an individual to speak the same way at all times? Is it desirable to do so? Before answering these questions, reflect on the role of language variation in your own life.

- Think of someone with whom you regularly interact who speaks the same language very differently from you. How would this person react if you tried to speak the way they did? How would you react if they tried to speak the way you do?
- Think of two different situations in which the way you speak varies depending on where you are, what you're talking about, and/or who you're talking to. How would people react if you didn't vary your language use across these situations?

Obviously, speakers of different languages communicate in different ways, but even when speaking the same language, different kinds of people tend to speak differently, and speakers who may seem to be quite similar socially do not always speak alike. Additionally, all speakers vary their speech both across contexts and within the same context, for social as well as linguistic reasons. For example, even in the same conversation a speaker might pronounce the verbal suffix *-ing* sometimes as [ɪn] (as in *I'm doin' homework*) and sometimes as [ɪŋ] (as in *I'm formulating a hypothesis*). In other words, speakers can differ not only in their use of an entire language or dialect but in their use of individual **linguistic features**, or specific forms at any linguistic level. A linguistic feature might be the pronunciation of a specific vowel or consonant (such as the pronunciation of the vowel in words like *half* and *bath* with [ɑː] versus [æ]), the use of a particular grammatical structure (such as *I'm not* versus *I am not* versus *I ain't*), a certain lexical choice (such as *soda* versus *pop* versus *coke*), or a particular interactional practice (such as allowing or avoiding overlap between speaker turns). A key task of sociocultural linguistics is to systematically document these different ways of speaking and to explain their interactional, social, cultural, and political functions and meanings.

11.2.1 Linguistic Repertoires

One of the primary ways that individuals differ from one another with regard to language is in their **linguistic repertoires**: the full range of linguistic varieties that they are able to use to any degree. While in some communities most people are **monolingual** (see Textbox 11.1 above), most people in the world are **multilingual** and many communities around the world involve multilingualism (that is, the use of two or more languages). It may seem that those who know more than one language necessarily have wider repertoires than those who do not, but even monolinguals have multiple ways of speaking (see Stop and Reflect 11.4).

STOP AND REFLECT 11.4 **LINGUISTIC REPERTOIRES**

- What linguistic varieties (languages, dialects, styles) are in your own linguistic repertoire? When do you use each one?
- How does your repertoire compare to that of other members of your family?
- How does your repertoire compare to that of other residents of your city or region?
- How has your repertoire changed over time? How is it currently changing?

There may not be a widely recognized term for some of the varieties in your repertoire, and you may have resorted to creative labels such as *Chinglish* (for a way of speaking that combines elements of Chinese and English) or *skater speak* (for the way some speakers use language when talking about skateboarding). Varieties that are associated with the specialized activities of particular groups are often termed **registers**. Some registers are primarily used in professional or other formal settings, such as legal or religious contexts. Others, like the skater register, are much more informal, but they also involve special ways of speaking – in this case, related to the activity of riding a skateboard. Extremely informal registers may include the extensive use of **slang**, a set of rapidly changing lexical items

often associated with youth and casual social contexts. Many nonlinguists incorrectly use the term *slang* to refer to what are correctly termed *dialects* (or better, *varieties*). This misuse frequently reflects a language ideology that devalues varieties associated with socially marginalized groups. It is important to recognize that unlike slang, which primarily involves the lexicon, all dialects also include phonology and grammar. Thus, to label a variety as "slang" denies its structural complexity and systematicity.

11.2.2 Dialects and Style Shifting

Varieties considered to belong to the same language are often divided into dialects. Traditionally, the term **dialect** refers to a variety of a language that is characteristic of a group defined on the basis of a factor like geography (e.g., Egyptian Arabic), race or ethnicity (e.g., Turkish German), or social class (e.g., Cockney, the working-class variety of English spoken in London). Dialects are usually considered forms of the same language because they are generally **mutually intelligible**. Linguists' use of the terms *language* and *dialect* therefore differs from the political (i.e., governmental) use of these terms. For example, Hindi, spoken in India, and Urdu, spoken in Pakistan, are now considered separate languages for political reasons and are written with different writing systems, although the spoken languages are mutually intelligible. Conversely, many languages of China, including Mandarin, Cantonese, and others, are often called dialects despite being mutually unintelligible in their spoken form, because their speakers are politically unified under a single government and they share a writing system. In addition, mutual intelligibility may be asymmetrical due to such factors as status differences between varieties, greater media availability in one variety, and individuals' motivation to communicate with the other group. Thus, the distinction between a language and a dialect may be based on political or social factors rather than on linguistic factors, and the linguistic criterion of mutual intelligibility is not absolute. You may have discovered this for yourself if you have ever tried to speak to someone with a very different dialect from your own.

Like *slang*, the label *dialect* is often misapplied in ways that reveal negative language ideologies. Nonlinguists often erroneously apply the term *dialect* to languages without writing systems, such as many indigenous languages of the Americas and Africa. This usage stems from a colonial ideology that positions such languages as inferior to those with a written tradition. The term *dialect* tends to be used for those varieties of a language that are less prestigious due to the social devaluation of their speakers. But in fact ***everybody speaks a dialect***. You may think you do not speak a dialect because you perceive your way of speaking as simply "normal," but if you visit an area where another dialect is spoken you'll quickly discover that you're the one perceived as speaking a dialect! Some speakers are **bidialectal** (or multidialectal) – that is, fluent in two (or more) dialects – but no one has mastery over every existing variety of a given language.

It is also important to distinguish dialects from accents. While a dialect is a complete linguistic system that includes phonological, grammatical, and lexical characteristics, an **accent** involves only the phonological characteristics of a given variety. Although we tend to pay special attention to unfamiliar accents, there is no such thing as accentless speech. ***Everyone has an accent*** – that is, everyone's speech has a particular set of phonological

features. As with the issue of dialect, it is sometimes said that someone "has an accent" when what is really meant is that the speaker's phonology is noticeably different from that of the observer or of the surrounding community. Thus, which dialects or accents count as "normal" is a matter of social perception, not linguistic facts.

Some languages have a particular dialect that enjoys special status: the standard. The standard is not simply one dialect among others but a different linguistic phenomenon altogether. The **standard *is an artificial* linguistic variety *that has been deliberately engineered to function as the prestige variety*** and typically also as a wider means of written and spoken communication across social groups that speak different dialects. Unlike most dialects, which emerge from their everyday use by speakers, the standard is governed by prescriptive rules that are codified in dictionaries and traditional grammar books and imposed by authorities through the educational system and other means, often as a way to create a national identity across different ethnic or cultural groupings. The standard may be based on the speech of elites, or it may be constructed out of several existing dialects, but strictly speaking, ***no one truly speaks the standard***, because it is more an idealization – or, more accurately, an ideological construct – than a living variety.

SIDEBAR 11.4
For a detailed discussion of how a standard language was implemented for the purposes of nation-building, see the Indonesian Language Profile (LP12).

One purpose of a standard is to freeze the language in place, but given the principle of language variation, this is an unnatural and impossible goal. In any case, only a tiny minority of the world's languages has established a standard variety. Each English-speaking country has developed its own unofficial standard, but if you compare the speech of elites across the nation (such as members of Congress in the United States or news announcers in Britain), you'll find a wide range of variation, especially at the phonological and lexical level. There are governmental or other entities that monitor language use, establish standard orthography (spelling), support the use of the standard, and issue official pronouncements regarding which linguistic forms are acceptable in institutional contexts such as the media and education. Inevitably, however, in everyday speech these policies are often disregarded. Such organizations exist for a wide range of languages. Although most focus on national and world languages like Spanish, Turkish, and Mandarin Chinese, others work to overcome a history of marginalization, as in the case of Haitian Creole, and/or to revitalize endangered languages like Maori and Yiddish.

SIDEBAR 11.5
For discussion of the French organization that monitors language use, l'Académie française, see Textbox 13.1.

Linguists sometimes distinguish the standard, or prestige dialect, from the vernacular, or nonstandard speech. For example, a great deal of sociolinguistic research has found that middle-class speakers primarily use a more standard-like variety, while working-class speakers use a more vernacular variety. In most situations, however, it is more useful to think of the vernacular and the standard as varieties that are associated not simply with particular social groups but also with particular social situations. This view focuses on the speaker's linguistic repertoire within a given language. From this perspective, the **vernacular** is the variety of a language that a speaker uses for ordinary, everyday interaction, such as with

close family members and peers. One implication of this definition is that, as with dialects and accents, ***every speaker has a vernacular***; for any given speaker, the vernacular may be relatively standard or relatively nonstandard. While the vernacular is used in casual situations, in more formal contexts, speakers usually adjust their speech so that it more closely approaches the standard. This phenomenon of alternating between different varieties or styles of the same language based on the social context is termed **style shifting**.

Although all speakers regularly style-shift without conscious awareness, style shifting can also be used more deliberately to achieve particular communicative effects. This use of style shifting can be seen in the speech of Barack Obama. Both as a candidate and as president, Obama demonstrated a high degree of linguistic flexibility, which enabled him to navigate a difficult path as a Black politician who also needed to appeal to white voters.

When Obama was president-elect, he displayed this flexibility in a much-discussed interaction at a diner in Washington, DC. After Obama placed his order and paid the African–American cashier twenty dollars, the cashier asked if he needed change. "Nah, we straight," he replied. This comment was perceived as a radical departure from Obama's usual standard English speech style not only because of the use of the slang term *straight* 'even, square' and the casual pronunciation of *No* as *Nah*, but also because it involved African–American English grammar, specifically the **zero copula**, or the optional absence of a copula form within a clause (compare *We**'re** straight* in other varieties of English). For Obama to style-shift in this public context was likely not simply an automatic adjustment to his setting and addressee but a deliberate indexing of his identity to voters on the eve of his inauguration: both as a regular guy who paid for his own lunch and generously tipped hard-working Americans, and as an African American who was about to assume the most powerful office in the world but had not forgotten his ties to the Black community.

SIDEBAR 11.6
The use of the zero copula is further discussed in the African–American English Language Profile, Section LP11.3.2.

11.2.3 Multilingualism and Codeswitching

In addition to variation within a single language, which is characteristic of all languages, most communities also feature diversity across languages, with two, three, or more languages in regular use. Typically, these languages are not isolated from one another; rather, speaking more than one language enables people to communicate with those around them. Despite the monolingual ideology of the United States and most other English-speaking nations, as well as Japan, Korea, France, and many others, multilingualism is far more typical than monolingualism around the world, and it is widespread even in supposedly monolingual nations. India is an example of a highly multilingual nation, with over 400 living languages representing four major language families. In addition to the two official languages, Hindi and English, India officially recognizes twenty-two regional languages. Most speakers know at least two languages, and often more.

Multilingualism introduces an additional set of resources into speakers' linguistic repertoires. In monolingual communities, linguistic repertoires are largely a matter of variation within a single language. In multilingual communities, a speaker's repertoire may include two or more languages, and people may also have facility in multiple varieties

within each of these languages. Some US Latinxs of Puerto Rican heritage, for example, use Standard Puerto Rican Spanish, Nonstandard Puerto Rican Spanish, Standard American English, Puerto Rican English, and sometimes other regional or ethnoracial dialects such as New York English or African–American English as well. (Although for analytic purposes linguists may distinguish all of these as separate varieties, they may not be neatly separated from one another in practice, as discussed further below.) These varieties are all in wide use in Puerto Rican communities in the mainland United States, but individual speakers may have access to some varieties and not others depending on their background; for example, Puerto Ricans educated in the mainland United States who experienced English-only education may not have had the opportunity to learn spoken and written Standard Puerto Rican Spanish.

In many multilingual communities, speakers use each language in a particular physical context (e.g., English at work, Hindi at home). The use of two different languages or dialects according to social domain is called **diglossia**. Unlike style shifting, which may occur in a single situation based on topic or addressee, in diglossia, different varieties are used in different situations. In reality, however, the boundaries between domains often blur, and only in a few situations is a language more or less fully circumscribed by a specific domain of use. For instance, languages such as Classical Arabic, Classical Hebrew, and Sanskrit are generally restricted to religious or scholarly contexts. As these examples suggest, in addition to different languages or dialects, diglossic situations also often involve special registers specific to each domain.

SIDEBAR 11.7
For more discussion and examples of diglossia, see Section 13.3.

Multilingual speakers in many communities may have the additional ability to combine the languages they speak through **codeswitching**, or the use of two or more languages within a single interaction or utterance while conforming to the phonological and grammatical system of each language. A negative language ideology held by monolingual and multilingual speakers alike views codeswitching as "impure" language use, or as a sign that the speaker is not fluent in either language. The truth is that ***only speakers who are fluent in two or more languages are able to engage in codeswitching***. Example (1) presents two illustrations of codeswitching between Cantonese and English by young adults in Hong Kong. Because of Hong Kong's history as a British colony, college graduates are typically bilingual in English and Cantonese, the primary language of Hong Kong. (Following the 1997 handover of Hong Kong to China, Mandarin has gained in prominence, and like English it is spoken by about half the population.)

(1) (Source: Chen 2008: 61; slightly modified transcripts; English is marked in boldface)

a. Frank

ze m hai ngo m hang gong, ji hai ze hou lou sat gong ze e mou di
'Not that I don't want to speak, that is, very honestly speaking, that is without some

moderate *zung sing di get yan ze dou wui gok dak ngo hai deoi si*
moderate neutral sort of people would all feel that I am speaking of the matter

m deoijan ze o: zi gei ***personally*** *ze o jau hou siu tai pin le ze o m wui*
and it is not personal. I myself personally I seldom get too biased. I will not'

b. Kelly
It doesn't matter how you deal with them, it doesn't matter who you are,
kei sat ***the way that you present yourself by*** *lei go* ***language***
'actually your

ji ging bei zo jat zung ***arrogant*** *ge gam gok bei keoi dei le*
already gives people an arrogant impression'

Codeswitching is triggered by multiple interactional factors, including the language used by the previous speaker, the speaker's goals (e.g., emphasis, disagreement), and the topic. In addition, codeswitching is shaped by complex linguistic factors. Codeswitches are of three general types: **insertion** (switching a lexical item within a single clause), alternation (switching between entire clauses), and **tag switching** (switching at a **discourse marker**, a lexical item that is independent of the grammar of the clause but performs discourse-level or interactional functions). Because so many factors play a role in codeswitching, it is difficult to predict when a switch will occur, but it is often possible to explain the function of a switch after the fact (see Stop and Reflect 11.5).

SIDEBAR 11.8
For examples of **discourse markers** in English, see Textbox 7.5.

STOP AND REFLECT 11.5 **TYPES OF CODESWITCHES**

Find an example of each of the following in the data in (1).

- insertion switching
- alternation switching
- tag switching

Tip: Bear in mind that codeswitching involves switching both from Language A to Language B and from Language B to Language A.

Codeswitching should not be confused with types of language mixing that do not require fluent bilingualism. One such phenomenon is **interlanguage**, a characteristic of nonfluent language learners' speech in which structural elements of the learner's first language and second language are combined due to the learner's incomplete mastery of the second language. As part of interlanguage, language learners may mix languages because they are unable to sustain speech in their target language. Both structurally and functionally, codeswitching is entirely different from interlanguage. At the structural level, interlanguage often co-occurs with nonnative features within the second language. At the functional level, language learners use interlanguage because they lack sufficient knowledge of the target language and must fall back on their first language. By contrast, bilingual speakers codeswitch purposefully, if not fully consciously, to achieve a wide variety of communicative goals, including to convey particular nuances of meaning, to create social connection, and to structure their discourse. Bilingual speakers sometimes report that they codeswitch because they can't think of the right word in one of their

SIDEBAR 11.9
For further discussion of interlanguage, see Section 15.2.3.

languages, but research demonstrates that this sort of codeswitching as a "crutch" is in fact quite rare in fluent bilingual speech.

Another phenomenon that must be distinguished from codeswitching is **lexical borrowing**, a process of adding new vocabulary to a language that does not require any ability in the source language at all (though bilinguals as well as monolinguals may engage in lexical borrowing). Whereas in codeswitching, the phonological and grammatical systems of both languages are kept separate as the speaker moves from one language to the other, in lexical borrowing, the borrowed lexical item is fully integrated phonologically and grammatically into the borrowing language. For example, Spanish speakers in the United States often incorporate lexical borrowings or **loanwords** from English into their speech, like *lonche* 'lunch,' *parquear* 'to park,' and *yarda* 'yard.' Conversely, monolingual English speakers use numerous Spanish borrowings with English phonology and grammar, such as *alligator* (from *el lagarto* 'the lizard') or *burrito* (literally, 'little donkey'), pronounced in English as [bəˈɹiɹoʊ] instead of Spanish [buˈrito]. Borrowing is a common result of linguistic and cultural contact between groups, but unlike codeswitching it does not require fluent bilingualism or even any knowledge of the language that is the source of the borrowing. (To explore codeswitching and borrowing further, see Stop and Reflect 11.6.)

SIDEBAR 11.10
For more on borrowings, including lexical borrowing, see Section 13.2.

STOP AND REFLECT 11.6 **CODESWITCH OR LOANWORD?**

What would you want to know in order to determine whether the English lexical items in Example (1) above are insertional switches or loanwords? In answering this question, consider how you know that a word such as *alligator* or *burrito* in English is a loanword and not a switch.

When linguists analyze these phenomena, they consider criteria such as the following:

a. whether the words are pronounced according to the phonology of the source language (here, English) or the target language (here, Cantonese);

b. whether the words are adapted into the grammatical structures of the target language;

c. whether the words are understood even by monolingual speakers of the target language;

d. whether the words are considered by the speakers themselves to be part of the target language.

(As it turns out, according to these criteria, all of the English words in Example (1) are part of codeswitching rather than borrowing.)

Finally, it is important to realize that not all bilinguals are able to codeswitch, and not all speakers who codeswitch do so in the same way. In Example (1a) above, Frank, who was educated in Hong Kong and has a "local" identity, follows the insertional codeswitching style typical of most young Hong Kongers. In Example (1b), Kelly, who was educated in the United States during her teen years and then returned to Hong Kong, has a "returnee" identity and combines insertion switching with alternation switching and tag switching. This returnee style of codeswitching is widely disparaged by local Hong Kongers as pretentious and overly Western. In fact, in Example (1b) Kelly is describing the negative ideologies of her local peers toward her returnee speech style. Although she tries to adapt to the local codeswitching style in order to fit in and make friends, she is not always fully aware of her switching (as is typical with codeswitching in general). And there is another reason why it

is difficult for Kelly to abandon her codeswitching style: it indexes her identity as a "world citizen," as she puts it.

As Kelly's situation demonstrates, how we use language is intimately tied to our identities, yet the identity we seek to project through language may not be what others perceive, depending on their own language ideologies.

11.2.4 From Codeswitching to Translanguaging

Although sociocultural linguistics provides analytic tools for identifying the contributions of different languages to interactions like Example (1), most of the time speakers are not focused on linguistic boundaries. Instead, speakers draw on their full linguistic repertoires to the extent possible in a given social context in order to achieve their communicative goals. In the case of bilingual speakers who engage in complex codeswitching practices, it has been argued that rather than trying to account for the function of each individual switch or seeking to classify a given term as a switch or a borrowing, linguists should recognize codeswitching or code mixing itself as a separate linguistic variety. In fact, bilingual speakers often do just that by coining terms such as *Spanglish* (Spanish and English), *Franglais* (French and English), and *Portuñol* or *Portunhol* (Portuguese and Spanish).

Some researchers take this idea even further, pointing out that speakers' linguistic repertoires are made up of specific linguistic features that may not necessarily coincide with the boundaries between recognized languages and dialects. In any case, it is often not possible to draw sharp boundaries between linguistic varieties, as seen in the earlier discussion of languages and dialects. Thus some researchers have argued for conceptualizing blended language practices as **translanguaging**, or a speaker's use of features from their linguistic repertoire as a unified whole, regardless of the source of these features from a linguistic standpoint. On the one hand, translanguaging may be seen as a broader concept that includes style shifting, codeswitching, lexical borrowing, interlanguage, and more. On the other hand, it offers an alternative to all of these concepts by examining language use from a unitary perspective rather than focusing on linguistic boundaries. In this way, the concept of translanguaging challenges linguists' own language identities by reminding us that ***what we call languages and dialects aren't straightforward linguistic realities but are social and political constructs that may not reflect speakers' own identities as language users***.

SIDEBAR 11.11

Language contact, the study of how languages influence each other when their speakers are in contact, is the topic of Chapter 13; creoles, new languages which arise from language mixing, are discussed in Section 13.4.

11.2.5 Linguistic Activism and Sociolinguistic Justice

As we have seen, language users from many different nondominant groups are frequent targets of negative language ideologies. One way that linguists combat these ideologies is by carrying out and sharing scientific research that corrects these widespread misperceptions. However, because language ideologies aren't fundamentally about language but about struggles between powerful and subordinated social groups, simply doing good research isn't enough. For this reason, a growing number of linguists – including many sociocultural

linguists – engage in **linguistic activism**, or direct action to challenge language-based social inequality. These linguists often work in partnership with – and frequently as members of – communities facing linguistic oppression, such as immigrant groups, indigenous communities, and groups with marginalized racial, ethnic, sexual, gender, or religious identities. Linguistic activism can involve advocating for more equitable institutional policies and practices, supporting speakers' use of their full linguistic repertoires, ensuring that language accurately reflects individual and group identities, and preserving varieties threatened by dominant languages (see Textbox 11.2). The goal of this activist work is **sociolinguistic justice**, or self-determination for linguistically subordinated individuals and groups in struggles over language. In the next section, we will further explore issues of identity, ideology, and social inequality in relation to language.

TEXTBOX 11.2 **LEARNING MORE ABOUT LINGUISTIC ACTIVISM**

The following blogs by sociocultural linguists provide more information about issues related to linguistic activism and sociolinguistic justice.

- The Educational Linguist, by Nelson Flores
  https://educationallinguist.wordpress.com
  Critiques the racial politics of language ideologies and the harm these ideologies inflict on students of color.
- Language on the Move, by Ingrid Piller
  www.languageonthemove.com
  Explores a wide range of issues of language and social inequality with a focus on linguistic diversity.
- Trans Talk, by Lal Zimman
  www.medium.com/TransTalk
  Discusses the role of language in the experiences of transgender, non-binary, and gender-non-conforming people.

11.3 Variation, Ideology, and Identity

Unlike switching between languages, which is often very noticeable to others, most variability within an individual language is not noticed at all. It is impossible to produce a given utterance, word, or even phoneme in exactly the same way each time we speak, and this constant linguistic variability goes unremarked most of the time. Yet all speakers constantly use variation to position themselves as particular kinds of people, to take specific stances in interactions with others, and to establish certain kinds of relationships. As a result, a particular social meaning often comes to be attached to a particular linguistic form. A linguistic feature that varies either across speakers or in the speech of a single speaker is called a **sociolinguistic variable**, and the alternate forms that this variable takes in speech are called **sociolinguistic variants**. Over time, some variants may catch on while others disappear. Through this process, ***variation is the source of language change.***

An illustration of the relationship between linguistic variation, language change, and social meaning can be seen in the case of the pronunciation of /ɹ/ after a vowel, or **postvocalic /r/**, in the history of English, as described by researcher Thomas Paul Bonfiglio. The **rhotic** variant of postvocalic /ɹ/ is pronounced as [ɹ], while the **nonrhotic** variant is pronounced as a vowel. In unstressed syllables this vowel is often [ə], as in *better* ['bɛɾə]

(or [ˈbɛtə], depending on the dialect), while in stressed syllables the vowel is an offglide or lengthening of the preceding vowel, as in *car* [kʰɑː]. In the eighteenth century the nonrhotic pronunciation emerged in Cockney, the variety of the London working class. This pronunciation, though initially stigmatized, eventually became trendy among the middle and upper classes of London and among American elites on the East Coast and in the South who emulated English fashions. Until the early twentieth century, the US Midwestern rhotic pronunciation was often seen by nonrhotic speakers as provincial and harsh or aggressive. But the indexicality of rhoticity in the United States changed with the arrival of Eastern and Southern European immigrants in East Coast cities and the northern migration of African Americans, all of whom used the nonrhotic pronunciation. Owing to racism, this form took on a new, negative meaning in the eyes of the middle-class white population. Consequently, the rhotic pronunciation associated with white Midwesterners gained status. The nonrhotic pronunciation continues to decline in the United States even among groups that have traditionally used it, despite remaining prestigious in much of the English-speaking world.

The example of postvocalic /r/ illustrates several important points regarding language variation:

1. The speech of non-elite groups, not the elite, drives linguistic innovation and change.
2. Linguistic variation leads to systematic changes in the language when certain sociolinguistic variants gain ground over alternatives.
3. Sociolinguistic variants often come to index particular social groups and their ideologically associated traits, enabling speakers to use those variants to stake out specific identities.
4. A sociolinguistic variant may have different indexicalities for different groups or in different contexts, and indexicalities also change over time.
5. Linguistic forms do not have any inherent social meaning or social value. Instead, their status is based on how the speakers who use them are socially perceived and evaluated.

Language variation and change, then, are closely connected to processes of social identity, cultural ideology, and power and inequality.

The relationship between language and identity has been understood in different ways within different strands of sociocultural linguistics. In the **correlationist** tradition, researchers have sought to discover the social meaning of linguistic structures by finding correlations between social categories and the use of particular sociolinguistic variants. From this perspective, language reflects social identities: we speak as we do because of who we are. For example, linguists have long known that working-class speakers are more likely than middle-class speakers to use [ɪn] rather than [ɪŋ] in verb forms like *talking, running*, and *sleeping*. In this approach, speakers' social categories are used to predict which linguistic forms they will use and to explain why they made these choices. In the correlationist view, language is seen as reflecting social identities: the starting point of linguistic analysis in this approach is speakers' social category membership, which is used to explain a given linguistic phenomenon.

SIDEBAR 11.12
For more on the ways language variation and change are connected to processes of social identity and cultural ideology, see Chapter 13.

However, many sociocultural linguists now see the relationship between language and identity from the reverse perspective. Rather than using social categories to explain language, we can look to language use to gain insight into how people want to be perceived by others. According to the **constructionist** view, ***language creates social identities***. By speaking in particular ways (such as by saying *runnin'* more often than *running*), we index our identities as particular kinds of people (such as working-class rather than middle-class), and those who hear us speak make inferences about our background, our abilities, and even our personalities based on the linguistic forms we use.

These inferences may either support or undermine our own goals for how we wish to be seen, since both speakers and hearers are actively engaged in how language is used and socially interpreted. In addition, language is not understood simply as a mirror reflecting preexisting categories of identity to which the speaker passively belongs. Instead, language is a vehicle for social action, as speakers use linguistic structures to lay claim to a desired set of social characteristics and listeners accept or challenge these identity claims. In this process, speakers and hearers rely on culturally shared understandings of how various social groups speak.

11.3.1 Language, Gender, and Sexuality

The tension between identity and ideology in language use is especially evident in the linguistic study of gender and sexuality. Research in this area has been closely connected to the work of activists concerned with gender inequality in language. The feminist study of language and gender was established in the midst of the women's movements of the 1970s, and early research focused on critical analyses of androcentrism, a perspective that treats men as the default, unmarked type of human. One way in which androcentrism is reflected and reinforced linguistically is the use of the **generic masculine**, in which a masculine linguistic form is used to refer to an unspecified person or group, as exemplified in older expressions like *Man's inhumanity to man* and *To each his own*. Some English speakers continue to prefer *he* as a generic pronoun (rather than *she, they*, or *she or he*), despite objections that such language marginalizes those who don't identify as male.

The generic masculine is widespread in languages with **grammatical gender**, a system for categorizing nouns into two, three, or more classes which are marked by grammatical agreement on words of other categories. (For languages with many such classes, the term "noun class" is typically used rather than "grammatical gender.") Grammatical gender systems generally place women in one class and men in another, with the social expectation that so-called feminine forms will be used in reference to women and masculine forms in reference to men. The generic masculine is found in languages like French, Hebrew, and Hindi, where masculine grammatical forms are used for nonspecific referents and when referring to groups of mixed gender. It is rare for a language to use generic feminine forms, although some examples exist, such as Tunisian Arabic. And linguistic innovations have been proposed to avoid gender marking altogether (as illustrated by the use of *Latinx* instead of the generic masculine form *Latino* in this chapter).

SIDEBAR 11.13
Systems of grammatical gender are introduced in Section 5.2.

While struggles over the generic masculine are ongoing, in English generic masculine forms are becoming much less common, as gender-neutral substitutes have been made (e.g., *committee chair* replacing *committee chairman*). Other relatively successful gender-related language

reforms include the introduction of *Ms.* as a title that can be applied to women regardless of their marital status. However, changes promoted by those concerned with sexism, homophobia, and transphobia in language continue to be hot-button issues in the public sphere.

STOP AND REFLECT 11.7 **GENDER- AND SEXUALITY-RELATED LANGUAGE REFORM IN ENGLISH**

Language change often occurs without speakers' awareness, but when language perpetuates problematic ideologies, people may take an active interest in changing how we use it. Think about the following examples:

- Some speakers use the word *bitch* as a verb meaning 'complain.' It is also used as a derogatory term for a woman. Some people see both uses of *bitch* as contributing to sexism against women.
- The use of *they* as a generic pronoun to refer to a single person has a long history in English, including use by celebrated authors such as Jane Austen, Lewis Carroll, and William Shakespeare. Prescriptivists may argue that singular *they* is ungrammatical and should not be used, but some individuals with trans and/or nonbinary gender identities identify with the pronoun *they* rather than *she* or *he*.
- Over the past century, the word *gay* has shifted from meaning 'happy' to being the most common term to refer to people (especially men) who are attracted to others of the same gender. Following that change, the word began to be used by younger speakers as a general term of negative evaluation (e.g., *That's so gay*, meaning 'That's stupid/uncool').

What arguments might language activists make in response to these issues? Why do you think these debates become intensely heated? Would a sociocultural linguist be more likely to see these as matters of prescriptivism or of sociolinguistic justice?

Early feminist linguists argued that gender inequality in language arises not only in grammar but also in how women and men speak, or at least in how they are thought to speak (see Textbox 11.3).

TEXTBOX 11.3 **"WOMEN'S LANGUAGE": LANGUAGE IDEOLOGY OR LINGUISTIC REALITY?**

A much-discussed book by Robin Lakoff, originally published in 1975, proposed that women's language is characterized by features of what she considered powerless speech, including the following:

1. Special terminology related to "women's work" such as color terms like *magenta* or words related to activities like sewing.
2. "Empty" adjectives like *divine, charming, cute*, etc.
3. Indicators of questions on declarative utterances: tag questions ("It's so hot, isn't it?") and rising intonation in statement contexts ("What's your name, dear?" "Mary Smith?")
4. Hedges like *well, y'know, kinda*, etc.
5. The use of intensifier *so*
6. Hypercorrect grammar
7. Superpolite forms
8. Women don't tell jokes
9. Women speak in italics [i.e., use frequent emphatic stress]

(Lakoff [1975] 2004: 78–81)

Other researchers sought to test these claims in the speech of women and men, with mixed results. Linguists now understand that the notion of **"women's language"** is not necessarily a description of the speech of all (or most, or any) women, but rather a language ideology regarding how women are expected to speak – or suffer the social consequences if they do not. Lakoff herself recognized the ideological power of "women's language" in restricting women's behavior and opportunities. It may seem that this decades-old ideology is no longer relevant, and it

TEXTBOX 11.3 (*cont.*)

is certainly true that some of the characteristics of conventionally feminine language use have changed over time, as cultural ideologies of femininity have changed. However, ideologies about how women and men "should" speak and act are still with us, as is the underlying ideology of gender as fixed and binary.

Many ideologies about supposed differences in the language use of women and men focus on discourse practices. These ideologies portray women as more cooperative, social, and attuned to their interlocutors' needs, while men are characterized as competitive, informative, and attuned to their interlocutors' status. For example, men are often said to interrupt more often than women because of their need to demonstrate dominance. Women, by contrast, are frequently said to talk more than men because of their interest in building and maintaining social relationships. Although there are certainly women and men whose behavior seems to fit these expectations, empirical study presents a more complex picture.

Comparing whether women or men talk more, for instance, requires us to decide how to quantify speech – for instance, do we count the number of words used, the amount of time spent speaking, how many separate ideas are expressed, or how many turns a person takes in a conversation? Next, we need to decide whether to account for differences in the type of talk – for instance, do supportive comments like "mhm," "I see," and "wow" inserted into another person's stream of talk count in the same way a statement expressing new information would? Furthermore, we have to consider how the context of our observations plays a role in the results; when people claim that women talk more, they tend to have in mind social peers engaging in intimate conversations, not necessarily the more formal, institutionalized talk that happens in classrooms, boardrooms, or courtrooms. Often what researchers of language, gender, and sexuality find is not that women speak one way and men speak another, but that women and men are often inclined – or permitted – to do different things with language in different contexts because of differences in gender-based power (consider, for example, Hillary Clinton's language during her 2016 US presidential campaign versus Donald Trump's language).

STOP AND REFLECT 11.8 **CURRENT IDEOLOGIES OF "WOMEN'S LANGUAGE"**

- When you imagine a woman who would be likely to use features of "women's language," as described in Textbox 11.3, what type of woman do you picture? What characteristics other than gender seem important, such as age, class, race or ethnicity, or sexuality?
- In your opinion, which of the features listed in Textbox 11.3 are still associated with women? Why does this association persist?
- In your opinion, which of the features index social meanings other than (or in addition to) their association with women? Why might they have these meanings?
- Can you think of linguistic features not listed here that are currently associated with women (or with certain kinds of women)? How might they have come to have this association?

Despite such ideologies about how women and men speak (or should speak), there is in fact a great deal of variability in the speech of each gender and a great deal of similarity across the genders. Even when linguists do feel able to make generalizations about gender, these are by no means straightforward: For example, correlationist studies have found that women lead sound changes by making greater use of innovative vernacular variants, but that they often have more conservative, standard speech when it comes to stigmatized vernacular variants.

Ultimately, though, ***it is almost impossible to generalize about how women or men speak***. This is because gender looks – and sounds – very different depending on how it intersects with other identities like sexual orientation, ethnicity and race, or socioeconomic class. What it means to be a person with a particular gender identity, a person of color, or a teenager differs substantially depending on the multiple communities and identities that speakers negotiate as well as the experiences of power or oppression associated with those identities. An individual's or group's experience of multiple simultaneous forms of marginalization and oppression based on social categories is known as **intersectionality**, and this experience may affect language production and perception. (Textbox 11.4 on p. 278 provides an example of intersectionality.) An intersectional perspective on identity moves us away from the quest for differences between women and men and toward a more holistic and contextualized view of speakers' identities.

11.3.2 Styles and Communities of Practice

The shift from correlationist to constructionist perspectives on language and gender has led to changes in the way sociocultural linguists think about variation. Older models of style shifting and language change framed variability as largely determined by a speaker's demographics along with factors such as social context, but today sociocultural linguists tend to be more attuned to the way speakers exert agency by making linguistic choices that position them socially.

Demographic categories like gender are central to how we are perceived by others, but more important to our own identities and hence to our language use are the social groupings that we orient to in everyday life. These social groupings are sometimes termed **communities of practice**, or social groups that jointly engage in culturally meaningful activities. Communities of practice include families, friendship groups, teams and clubs, professional and community-based organizations, and any other group that undertakes a shared effort. In accounting for speakers' language use, membership in different communities of practice may override shared demographic membership. Thus the community of practice model helps us understand why it is so difficult to make generalizable claims about whether women tend to be more standard or more vernacular than men.

For example, a classic study done by Penelope Eckert in the 1980s in a largely white suburban high school near Detroit, Michigan, found a sharp distinction between "jocks" and "burnouts." Jocks were clean-cut, dressed in bright or pastel colors and trendy "preppy" styles, were college-bound, and participated in sports, student council, and other school-sponsored activities. Meanwhile, burnouts wore non-trendy dark clothing, were rebellious or disengaged from school, smoked cigarettes, and planned to find jobs in the

local community after high school. Linguistically, burnouts used more nonstandard grammar (specifically, **negative concord**, or the marking of negation in more than one possible grammatical position, as in *They didn't never do nothing to help*), and they also outpaced the jocks in some elements of a sound change in progress in the vowel system of the Detroit area. Previous correlationist studies of variation and language change would lead us to expect that girls would be leading this sound change while boys would make more frequent use of negative concord. However, the way these variables patterned with respect to gender ended up interacting with the locally meaningful categories of jock and burnout. For example, it was the "burned-out burnout girls" (that is, girls who got into the most trouble at school) who were the most advanced participants in some parts of the sound change, particularly the raising of the central vowel in the diphthong /aɪ/. The most extreme raised variant is [ʌɪ], so that *fight* sounds almost like "foight" and *all-nighter* sounds similar to "all-noighter" (a slang term used by burnouts to refer to staying out all night partying). The female jocks, while they led the sound change relative to male jocks, made much less use of the innovative variant than either female or male burnouts.

Figure 11.1 presents in visual form the correlation of combined speaker gender and social category with the extreme raising of /aɪ/. The numbers, derived from statistical calculations that are widely used for analyzing sociolinguistic variation, are probability values for the use of the innovative raised pronunciation by each group of speakers. Numbers above 0.5 indicate that the change is favored in that group; numbers below 0.5 indicate that the change is disfavored in that group. The differences between the five speaker groups are all highly statistically significant.

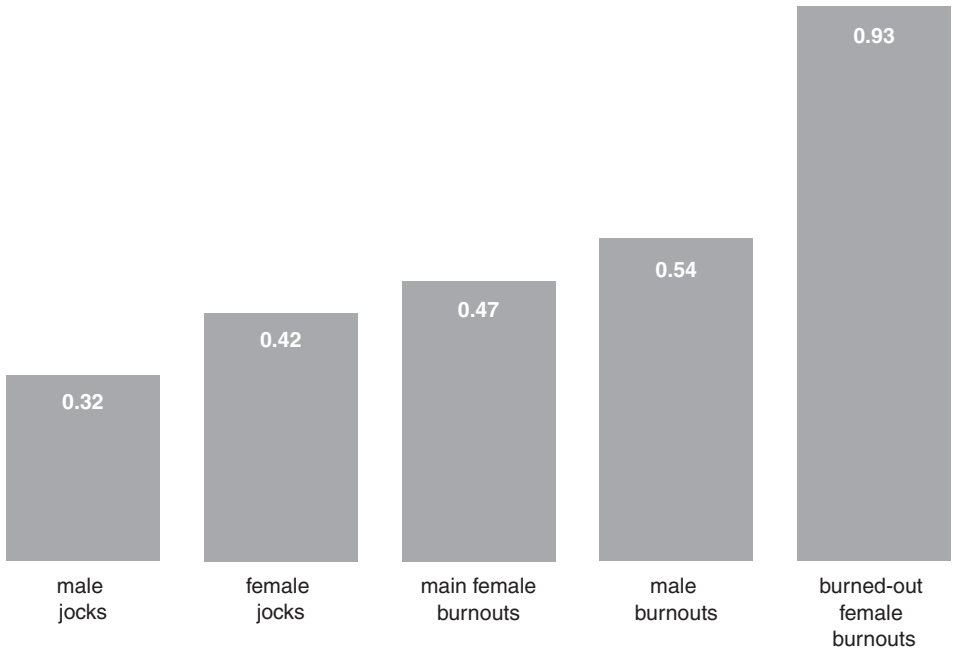


Figure 11.1 Extreme raising of /aɪ/, combining gender and social category, separating two clusters of burnout girls (adapted from Eckert and McConnell-Ginet 1995: 503)

The figure shows that jocks mostly tended not to use the new pronunciation, regardless of gender, and that among the burnouts, most girls had a slight tendency to avoid it. Even burnout boys as a group only slightly favored the innovative variant. By contrast, the burned-out burnout girls were the clear leaders in the use of raised /aɪ/. It seems that this variant was especially important for burned-out burnout girls in indexing a tough, rebellious identity. It isn't that the burnout girls were less feminine than the female jocks – or, for that matter, than the male jocks. Rather, they were adhering to a different set of local norms for how girls should speak.

The example of the jocks and burnouts demonstrates that although we may be tempted to sort speakers into simple demographic boxes, such as "white suburban high school girl" or "African–American lesbian professional," speakers often work hardest to distinguish themselves from others to whom they seem similar. This is shown in a study of sociolinguistic variation among Beijing professionals in the 1990s, as China shifted toward a global market economy. State employees tended to use local phonological variants, including adding a rhotic quality to syllable-final vowels, a feature that indexed a smooth, streetwise identity. Meanwhile, employees of similar backgrounds with equivalent positions at transnational corporations used full tones in unstressed syllables, a characteristic of the Hong Kong and Taiwan dialects of Mandarin but not of Beijing Mandarin; this feature was viewed by locals as a cosmopolitan, "yuppie" way of speaking. Such research shows that it is largely through their language use that seemingly similar groups are able to differentiate themselves from one another.

STOP AND REFLECT 11.9 **COMMUNITIES OF PRACTICE**

- What local communities of practice were important in your own high school or in the town or city where you grew up? Did any communities of practice define themselves partly in contrast to other groups?
- How did members of each group index their identities both linguistically and in other ways (such as clothing, activities, or attitudes)?
- How did people change community of practice membership or manage to belong to multiple communities of practice at the same time?

Linguistic researchers of communities of practice do not simply focus on language use. They also examine such issues as how speakers dress, what activities they engage in, their goals and attitudes, and their orientation to larger social and cultural forms (e.g., school, global culture). In short, they look broadly at the locally available categories of **style**, or socially distinctive ways of doing things. Communities of practice are often characterized by distinctive styles. Although clothing, activities, attitudes, and the like are all important dimensions of style, language is an especially valuable resource for aligning oneself with some social groups and distinguishing oneself from others. ***Every aspect of the way we talk indexes information about our identities.*** At the same time, this information is not accessible to everyone. The social meaning of our style often requires insider knowledge – such as residence in a local community or attendance at a particular high school – in order to be correctly recognized and interpreted. The issue of interpretation is especially important given the multiple social meanings that a linguistic form can index.

TEXTBOX 11.4 **THE INTERSECTION OF SEXUALITY AND IMMIGRATION IN DANISH**

Sociocultural linguists are interested in both the production and the perception of social meaning. One area of particular interest to perception researchers is sexuality. Speakers of several languages, including English, Spanish, Japanese, and Danish, have been shown to be more likely to view men as gay if they produce /s/ with a slightly fronted place of articulation compared to men who are perceived as straight. (This perception is associated with the widespread ideology that gay men have a distinctive "lisp," although a fronted pronunciation is not the same as lisping.) However, the connection between sexuality and /s/ is complicated when we consider how sexuality intersects with other aspects of identity. In Danish, a fronted /s/ indexes not only gay men but also speakers of a variety known as "street Danish" that is associated with immigrant youth. In a tightly controlled experiment, a team of Danish linguists found that listeners were more likely to hear a speaker of standard Copenhagen Danish as "gay" when a fronted /s/ was present. However, for listeners who thought they were listening to a speaker of "street Danish" (based on a distinctive type of intonation used in that variety), the presence of a fronted /s/ had no effect on the perception of the speaker's sexuality. In short, the perception of a variant as having a specific social meaning (such as "gay") depends on the other linguistic features that accompany it.

It appears that these listeners were influenced by social ideologies about sexuality, race and ethnicity, and immigration. In Denmark (and most Western nations), the prototypical gay person is a white non-immigrant. This perception is due to listeners' failure to consider the possibility of an intersectional identity – for instance, that a speaker could be both gay and an immigrant. Lack of awareness of intersectionality may make it more difficult for listeners to hear the voice of an immigrant as the voice of a gay man.

11.3.3 Stances, Personas, and Identities

Although social categories like race and ethnicity, gender, and sexuality are constructed through language use, speakers do not make their linguistic choices simply to signal that they are women, that they are in their forties, that they come from a working-class family, or that they are bisexual. More often, speakers are focused on how to position themselves at multiple levels within specific interactions.

To begin with, depending on the situation and the other participants, we enact a variety of social and cultural roles, such as teacher, sibling, or best friend. The **relational roles** we perform imply a certain set of social rights, obligations, relationships, and areas of expertise that influence the way we speak in particular contexts. Moreover, throughout social interaction we rapidly take up and abandon temporary roles such as narrator, joke-teller, or question-answerer. These **interactional roles** allow us to engage in specific linguistic activities within social interaction. In addition, each time we speak we also position ourselves toward what we are saying and toward our interlocutors. Such positionings, or **stances**, linguistically enact our attitude at any given moment. Finally, through the way we enact all of these categories, community memberships, roles, and stances we create **personas** (or personae). Personas are social types associated with specific personal attributes and/or broader social groups. For example, we may present ourselves as "bubbly," "aggressive," or "laid-back," attributes that may be ideologically associated with social groups like "cheerleader," "lawyer," or "hippie," which in turn may be tied to locally meaningful styles or broader social categories of race, gender, social

class, and the like. Speakers can index many different kinds of identity all at the same time: demographic categories, styles based in local communities of practice, relational social and cultural roles, interactional roles, stances, and personas. This wide range of identity positions necessarily requires speakers to use an equally wide range of linguistic (as well as nonlinguistic) resources to index themselves as particular kinds of people in a given situation.

This point is illustrated in a case study of the speech of a gay white American medical student, Heath. Heath's use of a falsetto (i.e., extremely high-pitched) voice quality for expressive purposes was measured in three different social contexts: with his friends at a barbecue, on the telephone with his father, and during a medical consultation with an elderly patient. The results showed that Heath's speech to his friends involved a falsetto voice that was not only more frequent than in other contexts (see Table 11.2), but also of longer duration and of broader pitch variability, and used in a wider variety of utterance types. The researcher argued that Heath uses falsetto to create a flamboyant "diva" persona but that he does so not simply because he is gay – after all, many gay men do not adopt this sort of persona, and Heath himself does not always do so. Rather, the use of falsetto to construct a diva persona is specific to this particular speaker in a particular context. Identity, then, is not simply a static category but an ever-changing image that we produce through language and other practices.

TABLE 11.1 Frequency of falsetto occurrence in Heath's speech across situations (adapted from Podesva 2007: 486)

	Barbecue	Phone	Patient
Number of falsetto utterances	35	10	15
Total number of utterances	386	260	403
Percent falsetto utterances	9.07	3.85	3.72

All of the categories, styles, roles, stances, and personas we inhabit, whether temporary or more durable, together constitute our identities, because they comprise the variety of ways that we position ourselves and are positioned by others within the social world. Thus, although identity is often thought of as a psychological phenomenon, it is more fundamentally a social and interactional process, constructed and negotiated every time we engage with others, based on our own and others' language ideologies. A speaker may say *talkin'* instead of *talking* in order to sound casual but instead be perceived as uneducated; they may swear to convey strong feeling and instead be perceived as unladylike (if female-identified) or as appropriately tough and masculine (if male-identified); they may use translanguaging practices in order to show solidarity with other bilinguals and instead be perceived as unable to speak either language well. Sociocultural linguistics offers us a wealth of analytic concepts and tools for closely examining language as perhaps the most basic and pervasive way that we display identity.

CHAPTER SUMMARY

Language is more than a tool for communicating information or accomplishing immediate interactional goals; it is also a resource for creating social meaning, a marker of who we are and how we want to be seen by others, and a site of struggles for power on the one hand and social justice on the other. In this chapter, we have seen that the principle of linguistic diversity and the principle of language variation together make possible the numerous social functions that language plays in our lives. Linguistic resources may be used to position the speaker as a particular kind of person in a particular social context. Likewise, language may be used to display social identities at multiple levels, from brief interactional stances to more enduring personas and categories. However, as speakers we are not entirely free to create whatever identity we want using whatever kind of language we want. We are constrained by our own linguistic repertoires, as well as by language ideologies that may lead others to interpret our language use negatively or inaccurately. At the same time, language ideologies are not entirely rigid and can be challenged or changed through individual and collective action. In so doing, we create new ways of linguistically positioning ourselves and others within our social worlds.

SUGGESTIONS FOR FURTHER READING

Alim, **H. Samy**, and **Geneva Smitherman**. 2012. *Articulate while Black: Barack Obama, language, and race in the U.S*. New York: Oxford University Press.

An engaging discussion of the politics and practices of African–American English as viewed through the language use of the first Black president of the United States.

Bell, **Allan**. 2014. *The guidebook to sociolinguistics*. Malden, MA: Wiley-Blackwell.

This introductory textbook provides an overview of key topics in linguistic diversity and language variation while also offering a guide for student research.

Ehrlich, **Susan**, **Miriam Meyerhoff**, and **Janet Holmes** (eds.). 2014. *The handbook of language, gender, and sexuality*, 2nd edn. Malden, MA: Wiley-Blackwell.

The second edition of a key resource for current research on language, gender, and sexuality.

García, **Ofelia**, **Nelson Flores**, and **Massimiliano Spotti** (eds.). 2017. *The Oxford handbook of language and society*. New York: Oxford University Press.

An authoritative reference to many different issues in sociocultural linguistics, with an emphasis on critiquing power and inequality.

Piller, **Ingrid**. 2016. *Linguistic diversity and social justice: An introduction to applied sociolinguistics*. Oxford: Oxford University Press.

The first textbook to focus on the use of sociolinguistic research to advance social justice.

EXERCISES

1. Classify the following pairs as *different languages*, as *different dialects of the same language*, or as *the same variety*. Why might nonlinguists and linguists come up with different answers in some cases? (You may need to do some internet research to reach a decision in some cases.)

a. Salvadoran Spanish and Castilian
b. Dutch and Pennsylvania Dutch
c. Dutch and Afrikaans
d. Farsi and Persian
e. Gullah and Geechee
f. Haitian Creole and French
g. Indonesian and Malay
h. Taiwanese and Mandarin
i. Silacayoapan Mixtec and Coatzospan Mixtec
j. Yiddish and German

2. The following passage is taken from an interview that Carmen Fought (2003: 159) conducted with a 45-year-old bilingual Mexican American man.

i. Classify the type of each codeswitch from English to Spanish in the data. (Spanish portions are marked with italics in the passage.)

Original: But I am the only one that came out *músico*. My- all my brothers were into sports, basketball, baseball, *y todo*, and I couldn't do that. *No me gustaban*. I could, you know, play *y todo, pero a mí me gustaba más la guitarra*.

Translation: But I am the only one that came out *a musician*. My- all my brothers were into sports, basketball, baseball, *and everything*, and I couldn't do that. *I didn't like them.* I could, you know, play *and everything, but I liked the guitar more.*

a. *músico*
b. *y todo*
c. *No me gustaban.*
d. *y todo, pero a mí me gustaba más la guitarra*

ii. Based on the above excerpt, how would you argue against the language ideology that codeswitching indicates that the speaker is not fluent in either language?
iii. Why might some linguists argue that this use of Spanish and English constitutes a unified whole rather than a combination of two separate systems?

3. Match each of the examples in a–e with the appropriate term in (a)–(e).

a. *I have twenty-one years*. (= *I'm twenty-one years old.*)
b. *Ungewöhnliche Hobbys* ('Unconventional hobbies,' the subject line of a discussion thread on a German dating site)
c. *I dun have lah!* ('I really don't have it!' said by one Singaporean person to another)
d. *Aljuab Khata'a, sorry* ('The answer is wrong, sorry,' a Facebook comment by an Arabic-English bilingual in Australia)
e. *"I chuned him, 'Let's chuck.' "* ('I told him, "Let's go,"' said by a South African speaker of Indian descent. *Note: chun* is from the British English pronunciation of *tune*.)

i. slang
ii. translanguaging
iii. lexical borrowing
iv. interlanguage
v. tag switching

4. Consider each of the following linguistic features and then answer the questions (i) to (iii).

Interactive IPA chart

   a. The choice of an adverbial intensifier (i.e., a word that strengthens the meaning of an adjective) in a sentence like "Taylor is _____ nice."

      (a) *quite*
      (b) *really*
      (c) *so*
      (d) *super*
      (e) *totally*
      (f) *very*
      (g) *hella*

   b. The pronunciation of intervocalic /t/ as [t], [ɾ], or [ʔ] in words like *better, pretty*, and *seated*.

      i. Brainstorm as many aspects of identity as you can that might be associated with each variant. Consider demographic categories, communities of practice, social and cultural roles, interactional roles, stances, and personas.
      ii. Do some variants have more associations for you than others? What language ideologies may underlie some of these associations?
      iii. Discuss your answers with a classmate. Do you both agree on the indexicalities of each variant? Do any of the indexicalities seem to be related?

5. For each of the following situations, what issues of linguistic ownership, if any, might arise? Support your answers by referring to the concepts introduced in this chapter.

   a. the use of African-American English by a Nigerian rapper
   b. the use of African-American English by a Finnish rapper
   c. the use of English between a Portuguese-speaking sales clerk and a Chinese-speaking customer in Brazil
   d. the use of the term *queer* as a slur by a straight person
   e. the use of the term *queer* as a term of self-identification among LGBT (lesbian, gay, bisexual, transgender) people
   f. the use of slang from LGBT communities of color (e.g. *throw shade*, 'criticize or insult someone, usually indirectly') by white straight fans of the US reality television show *RuPaul's Drag Race*

6. Table 11.2 shows a partial selection of first-person and second-person pronouns used in Japanese, a language in which pronouns are typically grammatically optional. Take note of the different meanings associated with each pronoun.
   i. Compare the Japanese pronoun system with the pronoun system in English or another language that you know. What kind of information is encoded or omitted in each system?
   ii. What social functions do pronouns seem to play for speakers of Japanese compared to speakers of the other language? Given that pronouns are often optional in Japanese, why do speakers use them at all?
   iii. What are some possible social or cultural reasons the Japanese pronoun system works the way it does? What kinds of linguistic reform might some speakers advocate?

7. Not all speakers of languages with grammatical gender adhere to the norm of mapping grammatical gender onto social gender. One example of a group that alternates between feminine and masculine grammatical forms is a transgender group in India known as hijras. Hijras are typically assigned to the male gender at birth but describe their identities and bodies as neither female nor male. Hindi, one of the languages spoken by hijras, has extensive grammatical gender marking. Although hijras usually use feminine grammatical forms for themselves, at times they refer to themselves or one another with masculine forms.

TABLE 11.2 Japanese first-person and second-person pronouns

Pronoun	Person	Formality	Gender norms	Other traits
watakushi	1	Very formal	Women and men	Unmarked formal pronoun
watashi	1	Both formal and informal	Women and men	Informal use associated with women
atashi	1	Informal	Usually women (esp. younger)	Conversational, rarely written
boku	1	Informal	Usually men (esp. boys)	In use by some younger women; can be perceived as humble
ore	1	Informal	Usually men	Sometimes seen as rude, can index intimacy between interlocutors
otaku	2	Formal	Women and men	Also used among self-identified nerds and obsessive fans
anata	2	Formal and informal	Women and men	Often used to refer to generic 'you,' e.g., in commercials
kimi	2	Informal	Women and men	Affectionate when used among peers, often along with *boku*
omae	2	Very informal	Usually men	Used by older or higher-status speakers
kisama	2	Rude	Usually men	Historically highly formal, now used sarcastically to indicate lack of respect

Examine the following utterances from Hindi-speaking hijras in which masculine forms are used (slightly modified from a study by Kira Hall and Veronica O'Donovan). What are some possible reasons the speakers use masculine grammatical forms in these utterances, given that they usually use feminine forms? Superscript ^{m} indicates a masculine form; ^{f} indicates a feminine form.

a. *ghar mẽ, to – mardānā rahare^{m} the^{m}, to mardānā bolī bolte-bolte^{m} haī*
'(Before becoming hijras,) they were^{m} living in a masculine way at home, so they were always speaking^{m} masculine speech.'

b. *jo baṛā^{m} hotā^{m} hai to guru. jo choṭī^{f} hotī^{f} hai, to kā bolalā nāṁ se bulāte haī*
'We'll call someone (i.e., a hijra) who is^{m} elderly^{m} guru. But we'll call [a hijra] who is^{f} younger^{f} by her name.'

c. *to apne logō mē cācā^{m} vagairah nahĩ kalite^{m} haī na? mausī^{f} kahēge^{m}, apne guru^{m} ko guru^{m} bolẽge^{m}*
'But among ourselves we don't say^{m} cācā^{m} ('paternal uncle') etc., right? We'll say^{m} mausī^{f} ('maternal aunt'), (but) we'll call^{m} our guru^{m} ('leader') guru^{m}.'
(*Note*: Hijra communities have hierarchies based on constructed kinship relationships like aunt/niece and spiritual relationships like guru/disciple.)

d. *maī hindū hū̃ to apnā hindū kā kaīn kartī^{f} hū̃, jo musalmān hai vah apnā musalmān kā kām kartā^{m} hai*
'I'm Hindu so I do^{f} the work of Hindus but whoever is Muslim does^{m} the work of Muslims.'

e. *hā̃, Channū hai, [place name omitted] mē jo Channū hai, to vah bhī ādmī^{m} hai, hijṛā to hai nahī̃*
'Yes, Channu [personal name] is – that Channu who lives in [place name omitted] is a man^{m}, he's not a real hijra (despite claiming to be one).'

YouTube "Barack Obama's Presidential Announcement"

8. As noted in the chapter, politicians often provide interesting illustrations of language variation. For this activity, you will view Barack Obama's 2007 announcement of his candidacy for president. This speech took place in Springfield, the capital of Illinois; at the time, Obama was an Illinois senator. Read through the instructions and view the first two minutes or so of the speech, from approximately 0:46 to 2:49. As you listen, notice when Obama style-shifts between standard English and a more colloquial speech style. Pay particular attention to his pronunciation of *you* and his pronunciation of the morpheme *-ing*. Then answer the questions below.
   - **i.** What variation did you notice in Obama's pronunciation of *you*? Phonetically transcribe each variant, and for each variant, give at least two examples of utterances where it occurs.
   - **ii.** What variation did you notice in Obama's pronunciation of *-ing*? Phonetically transcribe each variant, and for each variant, give at least two examples of utterances where it occurs.
   - **iii.** What appears to be the function of these shifts? That is, why does Obama shift at these points and what social effect does his style shifting have?
   - **iv.** Does Obama shift into African–American English or another variety? Why do you think he used this variety rather than another in this context? (Hint: Consider his use of other variables, such as postvocalic /r/.)
9. The study of linguistic landscapes – the use of multiple linguistic varieties in public signage – is a valuable way to gain insight into language ideologies. For this activity you will document the linguistic landscape of your own community by photographing linguistically interesting signs using a smartphone or camera. Depending on whether your community is multilingual or monolingual, you may focus on signage in multiple languages, multiple varieties of the same language, or both. Some signs may be monolingual while others may involve some form of translanguaging.
   - **i.** For each sign you photograph, make a note of where the sign was located, what it was communicating, and who the target audience seemed to be.
   - **ii.** For each sign, what may have motivated the linguistic choices of the sign's creator?
   - **iii.** For each sign, what language ideology underlies its use of language? (This might be an ideology discussed in the chapter or another that you identify and describe.)
10. Think about the following ideologies about gender differences in language, and brainstorm other ideologies about language and gender in your own communities of practice. How would you go about testing their accuracy? Use the chapter's discussion of whether women or men talk more as a starting point.
    - **a.** Men interrupt their interlocutors more often than women do.
    - **b.** Women talk about their feelings more than men do.
    - **c.** Men tend to dominate discussions in workplace meetings.
    - **d.** Women are more polite than men.
    - **e.** In interactions between heterosexual partners, men are more likely to choose the topics of conversation.
11. Consider some issue of inequitable language use that concerns or affects you. This may be the use of gendered nouns or pronouns, as discussed in the chapter, the use of words and expressions that have their roots in offensive stereotypes (such as *gyp* from *Gypsy*, referring to the Roma people, or words for mental illness like *mad* or *crazy* used to express intensity), controversial social group labels (such as *Hispanic*), or some other issue. How might you design a linguistic activism project to address this problem in your local community or more broadly? What challenges might you confront, and how would you address objections to your proposed reform?

12 Language Change

The Dynamicity of Linguistic Systems

KEY TERMS

- Synchrony and diachrony
- Sound change
- The Great Vowel Shift
- Grammaticalization
- Renewal
- Analogy
- Cognates
- Language families
- Proto-languages
- The Comparative Method
- Linguistic paleontology

CHAPTER PREVIEW

In previous chapters, we have talked about languages of the world and how they have different ways of expressing similar meanings. We have also examined various specific aspects of linguistic structure, including phonology, morphology, and syntax. But how did these structures within each language come to be? And how do languages come to be so different from each other?

This chapter describes how languages evolve over time: how sounds can shift, how sound systems can be restructured, and how grammar develops. It then discusses **genealogical relationships** among languages and how they can be detected. It closes with a glimpse of what reconstructed languages can tell us about their speakers. An important aspect of language change is the fact that it is not arbitrary; it is the result of acts of speakers, as they learn their languages, use them, repair them, and extend them to use in new situations and for new purposes. The investigation of language change can tell us much about why languages are as they are, with all of their seeming irregularities. It can also provide us with a view of the human mind at work, recognizing patterns, and extending them to new situations and uses.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **name and briefly describe some common kinds of sound changes;**

- **give examples of sound changes that have occurred in the development of English;**
- **explain why English spelling can be difficult to learn;**
- **write rules describing simple sound changes;**
- **name and describe processes involved in grammaticalization;**
- **define the term "language family" and name several known families;**
- **apply the steps of the comparative method to a data set, reconstructing proto-forms and stating sound changes.**

12.1 Language Change

Earlier chapters have shown that languages are tightly patterned, in ways speakers rarely imagine. Because languages seem to operate so smoothly, we might assume they are inert; nothing could be further from the truth. ***All living languages are dynamic, constantly being reshaped by their speakers***. Most of these adjustments are so gradual that they go unnoticed. Yet when we look carefully at the kinds of changes that occur in language, we can catch glimpses of the human mind at its most creative.

SIDEBAR 12.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quizzes, a review quiz, a Guide to Historical Reconstruction, and an interactive problem on Proto-Northern-Iroquoian.

Apart from occasional new technical terms or slang expressions, we are rarely aware of language change. Can you identify the language below? Can you understand it?

Sigemunde gesprong æfter dēaðdæge dōm unlytel,
syððan wīges heard wyrm ācwealde, hordes hyrde.

It is English, but English at an earlier stage of development. This Old English passage is from *Beowulf*, a manuscript written well over a thousand years ago.

(1) *Beowulf* 884–887

sigemunde	*gesprong*	*æfter*	*dēaðdæge*	*dōm*	*unlytel*
to.Sigmund	has arisen	after	death.day	glory	great

'To Sigmund sprang forth great glory after his death,

syððan	*wīges*	*heard*	*wyrm*	*ācwealde*	*hordes*	*hyrde*
Since	of.fight	brave	serpent	killed.off	of.treasure	guardian

because in brave warfare, he killed the dragon, guardian of the treasure.'

Examine the passage carefully and look for any similarities between the language used and modern English. Some of the words are immediately familiar: *æfter* 'after,' *dēað* 'death,' and *dæg* 'day.' Some become identifiable after some consideration. *Unlytel* is 'un-little' or 'not small'; *heard* is the ancestor of modern *hardy, hord* of modern *hoard*, and *hyrde* of modern *herd*, as in *shepherd*. But there are certainly differences between the English of then and now. These differences fall under several types:

- Phonological: The noun *dæg* 'day' has a *g* at the end. The vowel in *heard* is not the same as that of modern *hardy.*

- Morphological: The verb *ge-sprong* has a prefix *ge-*, an old marker of past participles (adjectival forms of verbs). Many of the nouns have case suffixes, which identify their roles in the sentence. The nouns *wīg* 'fight' and *hord* 'treasure,' for example, end in *-es*, the genitive marker meaning 'of.' The name *Sigemund-e* ends in the dative marker *-e* meaning 'to.' The compound *dēaðdæg-e* 'death day' also ends in the dative *-e*, which identifies it as the object of the preposition 'after.'
- Syntactic: The verb 'sprang' occurs in second position in the first clause, before its subject 'great glory.' This word order is occasionally found in stylized constructions today, but it is rare in everyday conversation. In the second clause, the object 'dragon' occurs before the verb 'killed,' which is not a possible order today. Modern English word order is strongly SVO.
- Lexical: Some of the vocabulary has been replaced by other words in modern English, such as *wīg* 'fight, warfare.'
- Semantic: The meanings of a number of the words have changed. *Dōm* 'glory' has developed into modern *doom; wyrm* 'serpent, dragon' into modern *worm; cweal-de* 'kill-ed' into modern *quell-ed*.

12.2 Sounds

SIDEBAR 12.2
To refresh your memory of **allophones**, see Section 3.2.2.

Chapter 3 described ways that speakers alter their pronunciation of sounds. These alternations can result in allophones. Over time, the same kinds of processes can result in significant sound change.

12.2.1 Here and There: Sound Change

English spelling is notorious for being difficult to learn. It seems to fit the language badly. There is a reason for this. Old English was written in a version of the Roman alphabet introduced by Irish missionaries. Words were spelled according to their pronunciation at the time, with letters representing their Latin values. ***As sounds changed over the course of the development of English, spelling practices changed too, but not as quickly as pronunciation.*** Words now spelled with final *e*, such as *her(e)* and *ther(e)*, were once pronounced with a full final vowel. As time went by, this unstressed *e* underwent **lenition** (weakening). By Chaucer's time in the late fourteenth century, it had become reduced to schwa [ə]. Further lenition resulted in complete loss.

SIDEBAR 12.3
Lenition and other common phonological processes are summarized in Textbox 3.6. Reviewing the material in this textbox now will benefit your understanding of sound change and the material in this chapter. Also see Textbox 12.2 (later in this chapter).

Sound changes can be described with rules much like those used in phonology. The term **synchrony** is used to refer to language structures at a single point in time. Synchronic rules, such as those discussed in Chapter 3, are operative at a specific moment, typically the present. The term **diachrony** is used to refer to comparisons of two or more points in time. A diachronic rule describes a change in the system between one time and another. We could describe the lenition of the vowel *e* to schwa with a diachronic rule like the one below:

*e > ə (The vowel *e* became schwa.)

The asterisk * marks a sound that we infer existed at an earlier time; we have not actually heard it, but we hypothesize what it might have been, in this case on the basis of early documents. Where synchronic phonological rules contain an arrow ➔, diachronic rules usually have the symbol >, which can be read as 'became.' Textbox 12.1 discusses this and other differences in rule-writing between historical linguistics and phonology.

TEXTBOX 12.1 **RULE-WRITING IN HISTORICAL LINGUISTICS AND PHONOLOGY**

Note that rule-writing in historical linguistics is similar to rule-writing in phonology. The primary differences are as follows: the use of the symbol >, rather than ➔, between the input and the output of the rule; the frequent use of rules with no contexts, indicating that the sound change was unconditioned and thus took place everywhere; and the representation of multiple phases of a sound change in a single rule, e.g., *e > ə > Ø.

Rule-writing guide in Chapter 3 online resources

The lenition of *e* to schwa that we saw in *here* and *there* did not occur everywhere in the language. It happened only at the ends of words: it was what is called a **conditioned sound change**. We can specify the context in which it occurred (only at the ends of words), in the same way as in a synchronic phonological rule. We add a slash / to announce that the environment for the change is coming up. We use an underline (a blank) __ to stand for the position of the sound in question. We then specify what sounds occur before it to the left of the blank, and what sounds occur after it to the right. In this case, it does not matter what occurred before the *e*, so nothing appears on the left. The crucial context is what occurred after the *e*, namely a word boundary. This is indicated by the symbol #.

*e > ə /_# (The vowel *e* became schwa at the ends of words.)

The weakening or leniting of word-final *e* did not stop at schwa. It continued over time until there was no vowel left at all. We can add this fact to our rule, with a zero:

*e > ə > Ø /_# (The vowel *e* became schwa and was then lost at the ends of words.)

There are numerous other examples of lenition that took place during the development from Old English to Modern English. As we saw in (1), the noun 'day' was spelled *dæg*. The final *g* was pronounced at the time, but it later underwent lenition to a velar fricative, then was further weakened to just a glide.

STOP AND REFLECT 12.1 **ENGLISH SPELLING**

Have you ever wondered why English words like *night, light*, and *right* are spelled with *gh*? Those words once contained velar fricatives [x], which were first lenited (weakened) to [h], and then ultimately lost.

STOP AND REFLECT 12.2 **ENGLISH SPELLING**

A number of English words begin with the letters *kn*, such as *knee, knight, knit, knead, knave, knife, knock, knot, know*, and *knuckle*. What could explain these spellings? Could you summarize the reason with a diachronic rule? Think about it and compare your answer with that found in Sidebar 12.4.

12.2.2 Trees and Leaves: Change in the System

Sound change can have more profound effects; it can result in the remodeling of the sound system. The most common way to form a plural in present-day English is to add the suffix *-s* to the basic form of the noun: *tree/tree-s, flower/flower-s*. But not all words follow this pattern. Consider the plurals of *leaf, wife*, and *shelf: leaf/leave-s, wife/wive-s*, and *shelf/shelve-s*. The noun roots change shape: /li:f ~ li:v-/, /waif ~ waiv-/, /ʃɛlf ~ ʃɛlv-/.

STOP AND REFLECT 12.3 **IRREGULARITIES**

In English we have singular/plural pairs *knife/knives*, and *self/selves*. Can you imagine why we have *chef/chefs* and not *chef/cheves*? Compare your answer with that found in Sidebar 12.6.

SIDEBAR 12.4

Answer to Stop and Reflect 12.2:
The spelling of English words such as *knee, knight*, and *knit* reflects an earlier pronunciation of these words. They originally began with the consonant cluster /kn/. Over time, the /k/ was lost and the initial cluster was simplified to /n/. This /k/ is still pronounced in other Germanic languages, for example German *Knie* /kni:/, 'knee.'

A diachronic rule for this could be expressed:

*k > Ø /#_n

SIDEBAR 12.5

To refresh your memory of complementary distribution, see Section 3.2.2.

As seen in Chapter 3, phonemes may have alternate pronunciations, called allophones. A common process that produces allophones is **assimilation**, whereby a sound comes to be more like its neighbors. Old English originally had just one series of fricative phonemes: /f/, /θ/, /s/, /ʃ/, and /x/. Each of these fricatives had allophones. When a fricative occurred between voiced sounds, it was automatically voiced too. We could write a synchronic phonological rule to describe the allophony at that time. Fricatives assimilated to their neighbors in voicing.

[fricative] → [+voice] / [+voice] __ [+voice]

The voicing was predictable: the fricative [v], for example, occurred only inside of words, between voiced sounds, while [f] occurred everywhere else, that is, at the beginnings of words, at the ends, or next to a voiceless sound. This is a familiar pattern of **complementary distribution**.

With the Norman invasion in 1066, French speakers began to arrive in England in significant numbers. As time went by, the influence of their language on English became increasingly apparent. Many French words were adopted into English. The adverb *very*, for example, came into English from the Old French *verrai* (modern French *vrai* 'true'). The ancestors of the present-day English words *veal, veil, venerable, vengeance, venison, venom, vent, vermin, vessel, villain, vine, voyage*, and many more were borrowed from French. The influx of so many words beginning with *v* upset the old pattern of complementary distribution. The result was minimal pairs such as *fine* and *vine*. Voicing was no longer predictable. This led to a change in the phonological system: the addition of a new phoneme /v/. Sounds that were originally allophones became separate phonemes.

12.2.3 The Moon and the Goose: The Great Vowel Shift

Have you ever wondered why the letter *o* is pronounced [o] in words like *so*, but [u] when it is doubled, as in *moon* and *goose*? Vowels are some of the most puzzling aspects of the English spelling system.

SIDEBAR 12.6

Answer to Stop and Reflect 12.3:

The plural of *chef* (*chefs*) is not formed in the same way as those of *knife* and *self* (*knives, selves*) for a reason. *Knife* and *self* are Germanic in origin. This means that they were already part of English when speakers started automatically voicing fricatives between voiced sounds (*knives, selves*). The voicing pattern began to fade after the Norman Conquest. By the time *chef* came into English, the automatic voicing was long gone.

As mentioned earlier, when the Roman alphabet was adopted for the spelling of Old English, the vowel letters were used to represent approximately the same sounds as in Latin. Like Latin, Old English had both long and short vowels: long vowels – as in *moon* and *keep* – simply lasted longer than short ones. At a certain point, English speakers began to shorten long vowels in certain contexts, a conditioned sound change. One of these contexts was before consonant clusters, as in *monthly* and *kept*. Then, beginning around 1400, vowel sounds began to shift. Long vowels began to rise. Long low vowels (ā, ɔ̄) were pronounced as mid (ǣ, ō). (English vowel length is traditionally written with a macron, or a bar, over the vowel.) Mid vowels (ē, ō) were pronounced as high (ī, ū). The highest long vowels (ī, ū), which could not rise any higher, broke into diphthongs (əi, əu). These changes, which took place gradually over a period of three centuries, are referred to collectively as the **Great Vowel Shift**. Stages in the process can be seen in Table 12.1.

Because of these shifts, the pronunciation of vowels in Modern English is now very different from that in Old English, when the spelling system originated. This history explains some of the puzzles of modern spelling. The words *moon* and *goose* are spelled with *oo* because they were once pronounced with long *o*. The words *beet* and *beat* are spelled differently because they were once pronounced differently: there was a **merger**. The two vowels ī and ē merged by the time of Wordsworth to ī. The result was a change in the system, from seven long vowels (including diphthongs) to six, and a reduction in the number of long vowels that were not diphthongs.

TABLE 12.1 *The Great Vowel Shift* (Anttila 1972: 65)

Chaucer (1343–1400)		Shakespeare (1564–1616)		Wordsworth (1770–1850)	Modern English (present)
bite	ī	*bite*	əi	ai	ai
bete	ē	*beet*	ī	ī	ī
bete	ǣ	*beat*	ē	ī	ī
name	ā	*name*	ǣ	ē	ē
foal	ɔ̄	*foal*	ō	ō	ou
fol	ō	*fool*	ū	ū	ū
foul	ū	*foul*	əu	au	au

SIDEBAR 12.7

In Table 12.1, the columns for Chaucer and Shakespeare show both the spelling (on the left) and the pronunciation of the first vowel (on the right). English orthography changed between Chaucer and Shakespeare, but it has changed little since then, even though pronunciation has continued to shift.

SIDEBAR 12.8

The interplay between perceptual distinctness and articulatory effort is discussed in Textbox 3.4.

The Great Vowel Shift also explains what might seem like senseless allomorphy, such as that of the noun roots in *moon/mon-thly* and *goose/gos-ling*. The vowels in *moon* and *goose* were long, as we can still see from their spelling. During the Great Vowel Shift, they rose from [o:] to [u:]. The vowels in *month* and *gosling*, on the other hand, had been shortened, because they occurred before consonant clusters. They were in **closed syllables**. They did not participate in the shift.

Changes in sounds and sound systems are constantly occurring in languages all over the world. We cannot predict exactly which changes will occur at a particular time, but we do know about the kinds of changes that tend to occur under particular circumstances. Some of the more common types of sound change are listed in Textbox 12.2.

TEXTBOX 12.2 SOME COMMON SOUND CHANGES

Certain types of sound changes occur more often than others, usually because they result in less effort for speakers. Some of the more common types are below.

1. **Lenition**
   Speakers often try to put as little energy into pronunciation as possible. Some common kinds of lenition, or weakening, are shifts of voiceless stops to voiced ones (p > b, t > d, k > g), stops to fricatives (p > f, t > s, k > x), oral fricatives to h (f > h, s > h, š > h, x > h), voiced obstruents to glides (b > w, v > w, g > j, dʒ > j), and shifts of vowels toward the center (i > ə, e > ə, a > a). We saw an example of lenition in the shift of Old English *dæg* to Modern English *day*.
2. **Loss**
   Extreme weakening ultimately results in complete loss of a sound. We saw loss of the velar stop [k] from English words like *knee* and *knife*, and loss of the velar fricative [x] from English words like *night* and *right*. The lenition and loss of final [e] is rampant, as in *here* and *there*.
3. **Consonant Addition: Excrescence**
   Consonants are sometimes added sporadically. Proto-Indo-European **swesr-* developed into Proto-Germanic **swestr*, with an added *t*, the ancestor of Modern English *sister*. Old English *þunrian* changed into *þundrian*, 'thunder,' with an added *d*. (Compare German *Donner*.) Such excrescent consonants usually result from tiny shifts in the timing of articulatory movements. Moving from the nasal stop *n* to the oral continuant *r* of *þunrian*, speakers closed off the nasal passage before opening up the mouth, resulting in the oral stop *d*.
4. **Vowel Addition: Prothesis and Epenthesis**
   Vowels are sometimes inserted to break up consonant clusters. Addition at the beginning of a word is termed **prothesis**. A well-known example is the shift of Latin *spiritus* to Spanish *espiritu* 'spirit.' Addition within a word is termed **epenthesis**, as in the pronunciation of English *athlete* as *athalete*.
5. **Fusion**
   Two sounds sometimes merge into one. We saw an example of vowel fusion in the shift from Old English *dēað* to modern *death*, now pronounced [dɛ̲θ].
6. **Breaking**
   One vowel sound may separate into two. We saw breaking in the long high vowels affected by the Great Vowel Shift. An example is the vowel of English *foul*, pronounced [u:] in Chaucer's time but [au] today.

TEXTBOX 12.2 (*cont.*)

7. Assimilation
Sounds often become more like those around them. The final consonant in English *leaf*, for example, became voiced when it was surrounded on both sides by other voiced sounds, as in *leaves*. This was assimilation in just one feature, voicing. The negative prefix *in-*, as in *in-edible* or *in-tangible*, takes on the point of articulation of a following consonant: *im-possible* [im-p], *in-complete* [iŋ-k]. It shows complete assimilation before a liquid: *il-legal, ir-regular.*

8. Palatalization
A very common kind of assimilation is palatalization. Here a consonant takes on the point of articulation of a following front vowel or glide, becoming palatal. When a stop is palatalized, it often becomes an affricate. Between the time of Proto-West Germanic and that of Old English, **k* shifted to the affricate *č* before front vowels *i, e,* and the glide *j*. We can hear this in English *church* (Old English *cirice*). Its German cognate *Kirke* still retains the original velar stops *k*.
Numerous other kinds of sound shifts occur as well, some of them gradual and regular, such as the vowel raising of the Great Vowel Shift, and others sudden and sporadic, such as the occasional pronunciation of the word *irrelevant* as *irrevelant*, a kind of change known as **metathesis**.

12.3 Grammar

It might be tempting to think that since all languages have grammar, often with fairly rigid rules, the grammar we see now has been there from the beginning. But like sounds, grammar is constantly evolving.

12.3.1 Grammaticalization Processes

Grammatical meanings are typically expressed in languages with small words (e.g., articles, prepositions, auxiliaries, etc.), clitics (e.g., English genitive *='s*, future *='ll*, and negative *=n't*), and affixes (prefixes, suffixes, infixes, circumfixes). Some examples of affixes discussed elsewhere in this volume are given in (2).

(2) Some grammatical affixes

Manange	*a-* $k^hʌ^{22}$	'not come'	*a-*	NEG prefix 'not'
Goemai	*mòe-jàpnúún*	'siblings'	*mòe-*	PL prefix '-s'
Karo	*o-ya'wan*	'I left'	*o-*	1SG prefix 'I'
Seneca	*sa-:ayö'*	'he came back'	*sa-*	REP prefix 'again'
Chontal	*sago-duy*	'eating'	*-day*	DUR suffix '-ing'
Ilocano	*gilin-an*	'grinder'	*-an*	NMLZ suffix '-er'

The grammatical morphemes that arise in languages are not random. They grow out of what speakers choose to say most often on an everyday basis. Most grammatical morphemes begin life as full words, usually with relatively general meanings. In some cases, these origins can still be detected. For example, according to the *Oxford English Dictionary*, the English grammatical morphemes *beside* and *besides* developed from Old English phrases *be si:dan* and *be sides* 'by the side.' The word *be* is the ancestor of our modern preposition *by*. The word *si:dan* is the Old English noun *side*, with the dative case ending (required by the preposition *be*). The word *sides* is the same noun with the genitive

case. Both originally had only a spatial meaning: 'by the side of, near.' The first can still be used that way: *beside the tree*. The second is now used only with more abstract meaning: 'in addition, moreover.' The development of lexical forms to grammatical forms (e.g., prepositional phrases to prepositions and adverbs), and from grammatical to even more grammatical forms (e.g., the abstract adverb *besides*) is termed **grammaticalization**.

Grammaticalization does not affect single words in isolation. It normally applies to words in particular constructions. As speakers use a certain sequence of words with increasing frequency, it can become automated and processed as a unit. It is a bit like driving to a friend's house in an unfamiliar area. The first time you go, you might think consciously about each stage of the journey: turning off the highway here, continuing for one mile, veering left, passing the fire station, etc. After several visits, you no longer focus on the individual steps; you simply drive to visit your friend. A similar cognitive process occurs with frequent phrases or constructions. Rather than focusing on each word, speakers simply select the whole construction as a chunk. Grammar is the product of the cognitive routinization of frequently recurring patterns of expression.

SIDEBAR 12.9
For another example of the historical development of grammatical forms, see the Finnish Language Profile, Textbox LP4.2, on the development of cases in Finnish.

Constructions undergoing grammaticalization are typically extended to more and more contexts. As a result, their meanings tend to become more general and more abstract. We saw an example of such **abstraction** in the shift of the meaning of *besides* from physical location to 'moreover.' (See Textbox 12.3 for another such example.) In most languages, full lexical items such as nouns and verbs occur with certain inflectional morphemes, such as tense or plural markers. These markers typically disappear during grammaticalization, a process termed **decategorialization**. We can see this in the development of English auxiliaries, which no longer carry person agreement. We can say *She sing-s*, but not *She can-s sing*. Finally, words undergoing grammaticalization within a particular construction tend to lose their individual salience, typically losing their stress and ultimately showing further **phonological erosion**. This, too, we can see in the case of English auxiliaries, such as the erosion of *will* to *'ll*, as in *I'll*.

TEXTBOX 12.3 **GRAMMATICALIZATION PATHWAYS**

Certain types of grammatical developments occur again and again in the world's languages. One common **grammaticalization pathway** is the development of body-part nouns into adpositions. The origins of prepositions in Dhaasanac (a Cushitic language of Ethiopia and Kenya), for example, are still clear: *ʔafu* 'in front of' comes from the noun for 'mouth,' *bál* 'beside' from 'chest,' *sugu* 'behind' from 'back,' *géere* 'inside' from 'belly' (Tosco 2001, cited in Heine 2011).

Prefixes and suffixes usually develop through similar processes. We can still perceive the origins of some. The English suffix *-ful* in *playful, masterful*, and *useful* creates adjectives. In measure terms like *spoonful, cupful*, and *armful*, it creates nouns. The source of the suffix is still obvious: it developed from the adjective *full*, which survives in present-day English.

When a word undergoes grammaticalization, the original form may continue in the language with its function. Both the adjective *full* and the suffix *-ful* already existed in Old English. The two have survived alongside each other for over a thousand years.

We can observe processes of grammaticalization occurring in English as we speak. One of the most discussed examples is /aimna/ (see, e.g., Hopper and Traugott 2004: 2–4). Do you recognize it? Try pronouncing it with a verb: /aimnə it/. This is *I am going* to, as in *I am going to eat*. This construction apparently developed out of constructions like *I am going to see my father*. The original meaning involved a change in physical location for a purpose. A locative adverb could be included: *I am going [to town] to see my father*. The intended action would occur in the future, following the change in location indicated by the motion verb *go*. The current meaning of the construction is simply future tense. This shift in meaning from purpose to futurity is a kind of **metonymic** process, or a change resulting from the frequent association of two elements in the same speech situation. If someone acts in order to bring about some event (*I am going* [*in order*] *to see my father*), that event will normally take place in the future (seeing my father). The original construction thus involves both purpose and futurity. Over time, the futurity is reinterpreted as the primary meaning.

SIDEBAR 12.10
For an introduction to **metonymy** and **metaphors**, see Section 7.11.

Grammaticalization can also have a syntactic side. At a certain point, speakers apparently reinterpreted the syntactic structure of the construction *be going to* from a main clause *I am going* plus a purposive subordinate clause *to see my father* (*I am going* [*to see my father*]), to a sentence with a future auxiliary phrase *be going to: I am going to* [*see my father*]. This process is called **syntactic reanalysis**. Speakers came to conceive of the syntactic structure in a new way. Such a shift is not immediately obvious. It becomes apparent only when these speakers create new sentences that are incompatible with the old analysis. When one says *I am going to like it*, it is unlikely that motion is intended. The fact that syntactic reanalysis has occurred is confirmed by sentences with a second verb *go*, like *I am going to* [*go to town*].

The *be going to* future construction also shows phonological effects that are typical of developing grammatical constructions: the words are losing their individual stress and undergoing further phonological erosion. We now hear *I'm going to eat, I'm gonna eat, Imna eat*, and even sometimes *Ima eat*. Note that such reduction does not occur with the original more concrete construction. No one would reduce *I'm going to town* to *I'm gonna town*.

Grammaticalization can involve **metaphorical extension**, or the use of an existing word or construction from one domain to express a concept in another. A frequent metaphorical change involves the extension of markers denoting spatial relations to use for the realm of time. An example can be seen in Cherokee, an Iroquoian language now spoken primarily in North Carolina and Oklahoma. Cherokee contains an ancient verb prefix *ta-* meaning 'hither, toward the speaker.'

(3) Cherokee cislocative 'hither' (Montgomery-Anderson 2008: 328, 354)

ta-kinatansiinooheéli 'He's crawling toward us'
ta-àkiiluhcheéli 'He came up to us'

This prefix has now been extended to indicate future tense as well.

(4) Cherokee future (Montgomery-Anderson 2008: 330–331)

ta-yuùhali	'He will look for it'
ta-kintlecheéli	'He will take revenge on us'

This development suggests a view of the future as something that is coming toward us.

As we look at the kinds of distinctions encoded in grammatical markers in languages around the world, we find that some meanings occur in language after language, such as negation, tense, plurality, and causation. The frequency of such grammatical morphemes points to certain universal human concerns, and to concepts that people tend to express often. At the same time, we sometimes find surprising grammatical markers, with very specific meanings. The suffixes in (5) are from Nuuchahnulth.

(5) Nuuchahnulth suffixes (Stonham 2005)

-'ahs	'in a vessel or container'
tuw'-ahs-iƛ	'jumped into the canoe'
tuw'-	'jump'
-'ači-	'in the bay, gulf, inlet'
ƛii-ʕači-ʔiš	'he was shooting in the bay'
ƛii -	'shoot'
-at	'out of the woods'
wika-at'-as	'she did not come out of the woods'
wika-	'come'
-ačn'ut	'from snout to dorsal fin'
hitweeʔin sučʼiit-ačn'ut	'it was five fathoms from snout to dorsal fin'
sučʼ-iit-	'five-fathom'

SIDEBAR 12.11
Learn more about Nuuchahnulth in Language Profile 5.

Nuuchahnulth is a language of the Wakashan family, spoken on Vancouver Island, off the coast of British Columbia. The ocean has been a central part of the lives of Nuuchahnulth people for a long time. Examples like these show that the general processes by which grammatical morphemes and patterns develop are very similar across languages, but the specific distinctions they encode are shaped by the concerns of individual speech communities.

12.3.2 Renewal: Restoring Expressive Power

The kinds of processes seen in the previous section are constantly at work in all languages. But if this is the case, shouldn't all languages have eroded to nothing or nearly nothing by now? In fact, there are other processes of change that help to maintain a certain equilibrium.

As frequently used expressions become routine, they can lose their expressive punch: their impact can fade. But a primary function of language is communication: speakers use language to convey their thoughts, often in creative ways. This creativity can restore freshness and power to the language. An illustration of such a cycle is the development of negative constructions in English. In Old English, negation was usually indicated with a negative particle *ne*, as in the sentence *ic ne wa:t* 'I don't know.' (The verb *wa:t* 'know' has since fallen

out of English.) Negation is expressed frequently in all languages, so negative constructions are likely candidates for routinization and erosion over time. Old English *ne* was already a small word. But negation is crucial information. To highlight its importance, speakers often reinforced negative sentences with extra words, such as *wiht* 'something, anything' or *na: wiht* 'nothing, not anything.' After a while *ne* was no longer used on its own; *na: wiht* became the regular negative marker. With regular use, its emphatic force began to diminish as well. Its phonological form has now eroded to modern *not* and even *n't*.

(6) English negation (Hock and Joseph 1996: 176)

Stage I	*ic ne wa:t*	'I don't know' (Old English)	basic
	ic ne wa:t (na:)wiht	'I don't know (no) thing'	emphatic
Stage II	*ic ne wa:t*	'I don't know'	basic
	ic ne wa:t (na:)wiht	'I don't know at all'	emphatic
Stage III	*ic ne wa:t na:wiht*	'I don't know'	basic
Stage IV	*I wot(e) not*	'I don't know' (Shakespeare)	basic

The cycle of **renewal** continues today. Modern speakers often reinforce what is now the ordinary negative *not* with phrases like *at all* or *a bit*.

12.3.3 Analogy: Repairing Patterns

The human capacity for pattern recognition is crucial for learning and using a language. ***Not only do humans search for patterns as they learn their mother tongue, and use them as models for creating new utterances; they often go further to repair what they perceive to be irregularities.*** Language can change both when children make novel hypotheses about the patterns behind the speech they hear, and when speakers attempt to regularize existing patterns.

We saw earlier that sound change can create irregularities in morphology. The most common way to form plurals in English is simply to add a plural suffix to the basic form of the noun: *tree/trees*. But because of various events in the history of English, some nouns change their form in the plural, as in *leaf/leaves* /li:f~li:v-/.

STOP AND REFLECT 12.4 **HAVE YOU REPAIRED IRREGULAR FORMS?**

Try saying the pair *house/houses* and listen to your pronunciation. For many English speakers, the noun *house* shows the same kind of allomorphy as *leaf/leaves*: it is /hauṣ~hauz-/. The cause is the same. But for other speakers, in many cases younger ones, the irregularity has been repaired: they use the same form of the noun root in the singular and the plural: [hauṣ~hauṣ-]. Which pronunciation do you use?

Repairs like the regularization of the plural of *house* are termed **analogical remodeling**. Speakers perceive a strong pattern among certain pairs of words (*tree/trees, flower/flowers, bird/birds, cloud/clouds*) and, by **analogy** to those pairs, remodel exceptions to make them fit the pattern.

Whether the remodeling occurs when children are first acquiring their language or later in life, once it has occurred, the result simply becomes part of the language. Have you ever

thought about the past tense of the verb *dive*? The original form is *dived*, but for many speakers, it is now *dove*. This might at first seem surprising: the most common past-tense marker in English is *-ed*. But English also contains robust sets of what are called **strong verbs**. These verbs form their past tenses with a vowel change, a pattern called **ablaut**. One such pattern can be seen in *drive/drove* and *ride/rode*. The past tense of *dive* was apparently remodeled by analogy to such verbs.

SIDEBAR 12.12
See the Akkadian Language Profile, Section LP14.5, for an example of analogical back-formation combined with sound change.

In this section we have seen only a sample of the ways languages can evolve. Many more occur, some quite commonly, others more rarely. Most examples here have been taken from English, but all of these processes occur in languages around the world.

12.4 Language Relationships

Example (7) shows the numerals 'one' through 'five' in a variety of languages. The numerals in (7) are written in standard orthographies or transliterations, rather than the IPA. You may recognize some of the languages. Take a moment to compare them and to work through the questions in Stop and Reflect 12.5 before reading on.

STOP AND REFLECT 12.5 **GROUPING LANGUAGES BASED ON NUMERALS**
Take a moment to compare the numerals in (7). Can you organize the languages into groups, based on the forms of their numerals? Are there any languages that stand out as not belonging to any group? What could explain the similarities between these numeral words across languages?

(7) Numerals in twenty-seven languages

	'one'	'two'	'three'	'four'	'five'
a.	un	deux	trois	quatre	cinq
b.	uno	dos	tres	cuatro	cinco
c.	uno	due	tre	quattro	cinque
d.	um	dois	três	quatro	cinco
e.	un	doi	trei	patru	cinci
f.	eins	zwei	drei	vier	funf
g.	een	twee	drie	vier	vijf
h.	ein	tsvei	drei	fier	finef
i.	en	två	tre	fyra	fem
j.	en	to	tre	fire	fem
k.	jeden	dwa	trzy	cztery	pięc
l.	adín	dva	tri	cētírye	pyait
m.	jeden	dvě	tři	čtyri	pět
n.	eden	dva	tri	četiri	pet
o.	e'na	di'o	tri'a	te'sera	pen'te
p.	egy	kettö	háirom	néigy	öt

q.	yksi	kaksi	kolme	neljä	viisi
r.	bir	iki	üç	dört	beş
s.	satu	dua	tiga	empat	lima
t.	maysá	duá	talló	uppát	lima
u.	wahid	itsnayn	tsalatsa	arbaa	chams
v.	echad	schnayim	schloschah	arba	chamischah
w.	ichi	ni	san	shi	go
x.	-moja	mbili	tatu	nne	tano
y.	énska	tékeni	áhsen	kayé:ri	wisk
z.	sga:t	dekhni:h	së̈h	ge:ih	wis

Words in different languages may resemble each other for several reasons. One is **onomatopoeia**, or imitation of sounds. Names of birds, for example, are sometimes coined from imitations of their calls, like *whippoorwill* or *chickadee*. Speakers of different languages might come up with similar imitations. This is an unlikely explanation for similarities among numerals. A second possibility is chance: only a certain number of sounds can be made with the human mouth, and it is not impossible that the same combination of sounds could have similar meanings in different languages by chance. There is a verb *č*ʰ*úw* in Central Pomo, a language indigenous to Northern California, which means 'eat.' It has no relation to English *chew*, however. A third is **language contact**: often speakers adopt words from one language into another. This is the source of much English vocabulary, such as *spaghetti* (Italian), *champagne* (French), and even *tea* (Chinese). But words for the lowest numerals are rarely borrowed. The fourth and perhaps most common reason for lexical similarities across languages is that the languages are descended from the same parent language. The similar words are a common inheritance from their ancestor, that is, **cognates**.

SIDEBAR 12.13
For a detailed discussion of language contact and **borrowing**, see Chapter 13.

Languages are always changing. The change typically begins with variation, from speaker to speaker and situation to situation. As long as speakers are communicating with each other, they will not change their speech so radically as to interrupt intelligibility. When a community splits, however, and the splinter groups no longer interact, their speech will no longer change in parallel. The longer they are separated, the greater the differences will become. **Dialects** will develop: people may still understand each other but notice differences, as in the case of British and American English. In time, speakers in the different communities will no longer understand each other, as in the case of English and German. At that point, they are said to speak different **languages**. All languages that are descended from a common parent are said to belong to the same **language family**. The languages within a family are often called **daughter languages**. They are said to be **genetically** (**genealogically) related**.

SIDEBAR 12.14
For more on the distinction between *dialects* and *languages*, see Section 11.2.2.

The languages represented in Example (7) are the following: (a) French, (b) Spanish, (c) Italian, (d) Portuguese, (e) Romanian, (f) German, (g) Dutch, (h) Yiddish, (i) Swedish,

(j) Danish, (k) Polish, (l) Russian, (m) Czech, (n) Macedonian, (o) Greek, (p) Hungarian, (q) Finnish, (r) Turkish, (s) Indonesian, (t) Ilocano, (u) Arabic, (v) Hebrew, (w) Japanese, (x) Swahili, (y) Mohawk, and (z) Seneca. Most (a–o) are from the same language family as English, called **Indo-European**. Several, however, are from different families, and their numerals look quite different. Hungarian and Finnish (p, q) are from the Finno-Ugric family. Turkish (r) is from the Turkic family. Indonesian and Ilocano (s, t) are from the Austronesian family. Arabic and Hebrew (u, v) are from the Semitic branch of Afroasiatic. Mohawk and Seneca (y, z) are Iroquoian. Turkish (r), Japanese (w), and Swahili (x) have no relatives on the list.

Among the Indo-European languages, numerals in some languages resemble each other especially closely, such as those in French, Spanish, Italian, Portuguese, and Romanian (a, b, c, d, e); those in German, Dutch, and Yiddish (f, g, h); those in Swedish and Danish (i, j); and those in Polish, Russian, Czech, and Macedonian (k, l, m, n). As far as is known, the original Indo-European speech community separated into over a dozen groups: Romance (a–e), Germanic (f–j), Slavic (k–n), etc. Many of these groups then divided again. The Germanic group split into a North Germanic subgroup (the modern Scandinavian languages), a West Germanic subgroup (English, Dutch, Frisian, German, Yiddish), and an East Germanic subgroup (Gothic). In general, languages that have split the most recently show the most similarities: they have shared a longer history of common development.

12.4.1 Family Trees

Relationships are often illustrated with what is termed a **family tree** or **Stammbaum** (see Textbox 12.4). A sample fragment of the Indo-European family tree is given in Figure 12.1.

Indo-European, the language from which English, German, French, Russian, Greek, Albanian, Armenian, Farsi, Hindi, and many other languages are descended, is thought to have been spoken around the fifth millennium BCE. Because there are no written records

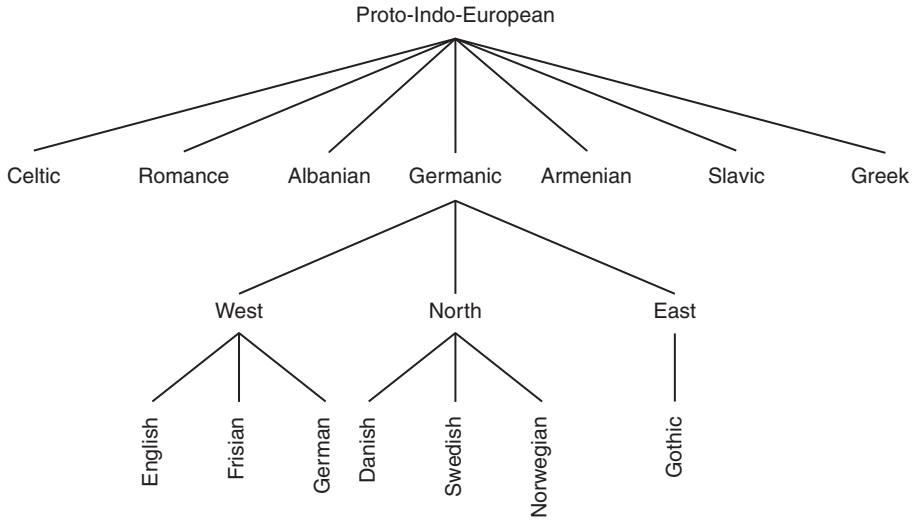


Figure 12.1 Abbreviated tree of the Indo-European language family

of it, all that is known is what can be reconstructed by comparing the daughter languages. (See Textbox 12.5 for more on methods used to determine subgroupings.) A reconstructed ancestral language is termed a **proto-language**. The reconstructed ancestor of English and its relatives is called **Proto-Indo-European**.

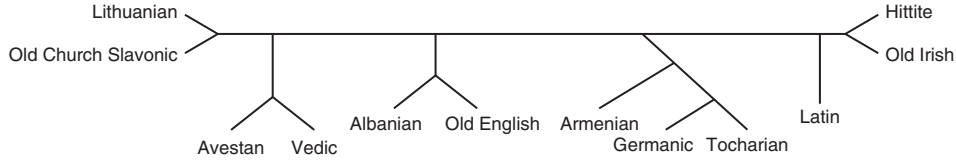
TEXTBOX 12.4 **TREE DIAGRAMS**

Family trees are schematic idealizations of language relationships. Splits are rarely as abrupt as the diagrams might suggest. Languages often continue to be influenced by each other and by languages outside of the family. Full versions of the tree seen in Figure 12.1 are available on many websites and can be found by searching online for "Indo-European tree."

TEXTBOX 12.5 **CLADISTICS**

Computational methods are also being explored for answering questions about subgroupings, that is, interrelationships among languages already known to have developed from a common ancestor. One method, which comes from work in evolutionary biology, is cladistics. Similarities among languages are calculated in terms of the numbers of features (or "characters") they share, such as lexical cognates, sound changes, and inflectional morphology. A group of languages that share a significant number of features is called a "clade." A clade can be likened to a subgroup in a traditional family tree. But while family trees show a common parent language at the top, with successive splits into subgroups and ultimately individual languages at the bottom, as in Figure 12.1, cladistics first produces networks, or "unrooted trees." Cladograms simply arrange languages in terms of degrees of similarity. An example of a cladogram, from Taylor et al. (1998: 400), is below. It shows degrees of similarity among some Indo-European languages, based on a set of forty-six characters.

The lengths of the lines here are meaningful. Note that the line representing the Avestan-Vedic branch is longer than that for the Albanian-Old English branch. This is meant to indicate that Avestan and Vedic underwent more common changes than Albanian and Old English.



A cladogram showing similarity among some Indo-European languages

12.5 The Comparative Method

To determine that languages are related, we begin by looking for resemblances among basic words, like the numerals in (7) above. But random similarities do not, on their own, constitute evidence of genealogical relationship. The similarities could be due to any of the four factors mentioned above: onomatopoeia, chance, contact, or common inheritance. To uncover genealogical relationships, we look for recurring **sound correspondences**. This is done by applying the **comparative method**. The method will be illustrated here with three languages indigenous to northern California: Wintu, Nomlaki, and Patwin.

(8) Wintu, Nomlaki, and Patwin (Shepherd 2006)

	Wintu	Nomlaki	Patwin
a. 'ear'	ma:t	ma:t	ma:t
b. 'milkweed'	boq	boq	bok
c. 'frog, toad'	wataqmet	wataq	wata:k
d. 'house'	qewel	qewel	kewel
e. 'bone'	paq	paq	pak
f. 'wild goose'	laq	laq	lak-lak
g. 'play, gamble'	łaqal	taqal-a	łakal-a
h. 'hole'	holoq	holoq	holok
i. 'hawk'	qačit	qacit	katit
j. 'good, straight'	čal-a	čal-a	tal-o:
k. 'red-tailed hawk'	lad	čeqčeq	tektek
l. 'hurt, sick'	koy-i	koy-a	čoy-i
m. 'be ashamed'	kay-a:	kay-a	čay-i
n. 'enemy'	yuken	yuken	yučen
o. 'body hair'	sekey	sekey	sečey
p. 'climb'	dek-ma	dek-na	det-mu
q. 'woodpecker'	tarak		tara:t
r. 'basket root'	se:k	se:k	se:t
s. 'ash tree'	irik-mi		irit
t. 'strap, tumpline'	surut	su:t	surut
u. 'belt'	tir-i	ti:	tir-i

12.5.1 Step I: Identifying Similar Morphemes

The first step is to identify potential **cognates**, or morphemes that are similar enough in form and meaning to be descended from the same morpheme in a common parent language.

Compare the words in (8) to see whether any might not belong. Wintu *lad* (k), a kind of hawk, is completely different in form from Nomlaki *čeqčeq* and Patwin *tektek*. We will not consider it further in our comparison.

Potential cognates must also be similar enough in meaning to have developed from the same word in the parent language. Full semantic details of the words could not be included in (8) for reasons of space; however, some of the words in (8) have exactly the same meanings, such as *ma:t/ma:t/ma:t* 'ear' (a), while others differ. Differences do not mean they cannot be related: meanings can change over time. But the differences must represent plausible semantic change. Nomlaki *yuken* and Patwin *yučen* in (n) are translated 'enemy.' Wintu *yuken* is translated 'dangerous, at war, Shasta.' The Shasta people were the northern neighbors of the Wintu. The semantic relationship between 'enemy' and 'dangerous/Shasta' is sufficient for us to consider them possible cognates. On the other hand, Nomlaki has a word *leni* 'grass,' and Patwin a word *le:ni* 'yesterday.' This difference is too great for them to be cognates.

Finally, it is crucial that specific morphemes be compared. The 'frog' words in (c) are Wintu *wataqmet*, Nomlaki *wataq*, and Patwin *wata:k*. The element *-met* in Wintu is an 'amphibian reptile suffix' (Pitkin 1985: 348). It also appears in Wintu *yir-met* 'mountain

lizard' and *yoho:l-met* '(another kind of) frog.' We only need to compare the roots *wataq/wataq/wata:k*. In the forms in (p) for 'climb,' *dek-ma, dek-na*, and *det-mu*, only the roots *dek* are comparable. We do not need to consider the suffixes in our comparison.

Most of this first step has already been done for you in (8). Potential cognates have been assembled, and morphemes have been separated with hyphens.

12.5.2 Step II: Listing Correspondences

When we compare the words *ma:t/ma:t/ma:t* ear' in (a), we see that where Wintu has *m*, Nomlaki and Patwin also have *m*. We can summarize this in what is called a **correspondence set**: *m/m/m*. In the same word we see *a:/a:/a:* and *t/t/t*. In *qacit/qacit/katit* 'hawk' (i), we find the sets *q/q/k, a/a/a, č/č/t, i/i/i*, and *t/t/t*. These sets recur in the data, and with more data, we would see even more. Take a moment now to list all the consonant correspondence sets you find in the data in (8). List each set once, arranging any that share sounds, or are phonetically similar, near each other.

In the words 'tumpline' (t) and 'belt' (u), Nomlaki shows nothing where Wintu and Patwin both show *r*. We write this correspondence using a zero: *r/Ø/r*. Nomlaki words for 'woodpecker' (q) and 'ash' (s) are not available. We represent this gap in the data with a hyphen when first setting up the sets. For the first sound in 'woodpecker,' we write *t/-/t*. Since we have only one other set where this pattern would appear to fit, in this case *t/t/t*, we can assume that *t/-/t* exemplifies this pattern. (However, if we had two other correspondence sets where the pattern could fit, such as *t/t/t* and *t/d/t*, then we could not make such an assumption.)

p/p/p	*s/s/s*	*y/y/y*	*m/m/m*	*l/l/l*	*q/q/k*	
b/b/b	*h/h/h*	*w/w/w*	*n/n/n*	*ɬ/ɬ/ɬ*	*k/k/č*	*č/č/t*
d/d/d				*r/Ø/r*	*k/k/t*	*t/t/t*

12.5.3 Step III: First Pass at Reconstruction

We now propose sounds in the parent language, Proto-Wintun, that could be the ancestors of each correspondence set. Each reconstructed sound should be such that:

a. The changes from it to each of its reflexes (descendant sounds) in the daughter language are as plausible as possible, i.e., the kinds of natural changes we know that sounds undergo cross-linguistically. Earlier in this chapter we saw some particularly common kinds of change, e.g., lenition and assimilation.

b. The changes are as few in number as possible.

The most likely ancestor of the set *p/p/p*, for example, is *p. This is a hypothesis that Proto-Wintun contained a sound *p that remained unchanged during the several thousand years of development into modern Wintu, Nomlaki, and Patwin. We follow the same procedure for other uniform sets: *b for *b/b/b*, etc. Each has remained the same in the daughter languages.

Proto-Wintun

*p > p	in W, N, P	*m > m	in W, N, P
*b > b	in W, N, P	*n > n	in W, N, P

*t	>	t	in W, N, P	*l	>	l	in W, N, P
*d	>	d	in W, N, P	*ł	>	ł	in W, N, P
*s	>	s	in W, N, P	*w	>	w	in W, N, P
*h	>	h	in W, N, P	*y	>	y	in W, N, P

The same procedure gives us easy reconstructions for the vowels, which are generally identical in the daughter languages. So far things look so simple that we hardly need to write them out.

For the set *r/Ø/r*, a reconstruction of *r is most appropriate, but this entails a change. The data here indicate that *r has disappeared in Nomlaki.

*r	>	r	in Wintu, Patwin
		Ø	in Nomlaki

We next turn to *q/q/k*. Two possible reconstructions spring to mind: *q or *k. A choice of *q entails just one change, *q > k in Patwin. It is a plausible change: shifts from uvular to velar are common cross-linguistically.

*q	>	q	in W, N
		k	in P

A choice of *k for the *q/q/k* set, however, would entail two changes, *k > q in Wintu and *k > q in Nomlaki. Moreover, this change is much less common cross-linguistically. (It occurs mainly by assimilation to low back vowels.)

12.5.4 Step IV: Combining Sets

We now turn to the sets *k/k/č* and *k/k/t*. A separate proto-sound must be posited for each correspondence set, unless there is evidence for combining the sets. A likely ancestral sound for both *k/k/č* and *k/k/t* would be *k. There may have been one original sound, *k, which developed one way in some contexts and another way in others. *k may have developed into Patwin *č* in some contexts, and *t* in others. To determine whether this happened, we investigate the environments where each occurs. (This procedure is similar to that used for finding allophones in complementary distribution.) We can list their contexts as follows. The blank represents the correspondence set in each word. The sound that occurs before it in each language is on the left, in the order Wintu/Nomlaki/Patwin. The sound that occurs after it in each language is on the right.

k/k/č	k/k/t
a/a/a__i/i/i	e/e/e__m/n/m
#/#/# __ o/o/o	a/-/a: __ #/#/#
#/#/# __ a/a/a	e:/e:/e: __ #/#/#
u/u/u __ e/e/e	i/-/i __ m/-/#
e/e/e __ e/e/e	

We do have complementary distribution. The set *k/k/č* always occurs before vowels. In contrast, the set *k/k/t* never occurs before vowels; it always occurs before a consonant or at the end of the word. With this information, we can posit a single ancestral sound *k. This *k remained *k* in Wintu and Nomlaki. It changed to *č* (the affricate [tʃ]) in Patwin. This is a

plausible sound change, a simple fronting of the obstruent. Before another consonant or at the end of a word, this *č* was simplified to the stop *t*. This too is a plausible change.

*k	>	k	in Wintun, Nomlaki
		č	in Patwin
		č > t	/_C
			_#

We are left with the set *č/č/t*. The most obvious reconstruction is *č, a sound not used for our Proto-Wintun consonant inventory so far. It implies just one change, *č > t in Patwin, and, as noted, it is a plausible change.

*č	>	č	in Wintun, Nomlaki
		t	in Patwin

We should check to be certain that there is not complementary distribution between the contexts in which the *č/č/t* and the *t/t/t* correspondences occur. In fact there is not. Both occur, for example, at the beginning of a word before *a*, as in (j) 'good, straight' *(č/č/t)*, and (q) 'woodpecker' *(t/t/t)*. There is also no complementary distribution between the sets *k/k/t* and *t/t/t*. Both occur after *e* at the end of a word, as in (r) 'root' (*k/k/t*) and (a) 'ear' (*t/t/t*). A check of the contexts for the sets *l/l/l* and *ɬ/ɬ/ɬ* also shows no complementary distribution. Both occur, for example, at the beginning of words before *a*, as in (f) 'wild goose' (*l/l/l*) and (g) 'play, gamble' *(ɬ/l/ɬ)*.

12.5.5 Step V: Ordering Rules

Each of our rules represents a hypothesis about a sound change that took place in the language. It is unlikely that they all occurred at once. So can we tell anything about the order in which they did occur? Looking back at the last section, we see that we hypothesized the two changes below for Patwin.

1. *q > k
2. *k > č

Our work indicates that the Proto-Wintun word for 'hole' was *holoq. If we assume that the two rules we see there operated in that order (1 before 2), we would have the following sequence of changes:

*holoq	>	*holok	>	holoč
*q > k			*k > č	

If, however, we hypothesize that they occurred in the opposite order (2 before 1), we would have the following sequence of changes:

*holoq	>	holok
(*k > č)	*q > k	

Change 2 (*k > č) would not have affected the word 'hole,' because at that point the word did not yet contain a *k* (*holoq). The fact that the modern form is *holok* and not *holoč* demonstrates that this second ordering, with *k > č occurring before *q > k, is correct.

12.5.6 Step VI: Inventory Check

We now consider the inventory of consonants that we have reconstructed for Proto-Wintun:

*p	*t	*č	*k	
*b	*d			
	*s		*h	
*m	*n			
*w	*l	*ɬ	*r	*y

This is a reasonable, balanced inventory. The absence of *g is noteworthy, but languages with [b] and [d] but no [g] are actually not uncommon cross-linguistically.

12.5.7 Step VII: Reconstructing Words

We are now in a position to reconstruct full words. We will assume that the vowel inventory consists of *i, *e, *a, *o, and *u, with no changes in the daughter languages. Some reconstructions are straightforward:

	Wintu	Nomlaki	Patwin	Proto-Wintun
a. 'ear'	ma:t	ma:t	ma:t	*ma:t

Others require undoing the sound changes we posited:

b. 'milkweed'	boq	boq	bok	*boq
i. 'hawk'	qačit	qačit	katit	*qačit
t. 'tumpline'	surut	su:t	surut	*surut

Where the meanings of the cognates in the daughter languages are not identical, we must choose a proto meaning. The words in (f) with their translations are Wintu *laq* 'wild goose,' Nomlaki *laq* 'brant, green-wing teal,' and Patwin *laklak* 'goose species.' The most likely meaning of the Proto-Wintun term is 'goose.'

Interactive problem-on Proto-Northern-Iroquoian

Comparative reconstruction is one of the primary methods that linguists have used to determine language relatedness and to reconstruct protolanguages. This method is complemented by **internal reconstruction**, discussed in Textbox 12.6.

TEXTBOX 12.6 **INTERNAL RECONSTRUCTION**

There are additional techniques for reconstructing earlier stages of languages. Internal reconstruction takes as a point of departure alternations within a single language. For an example of how it works we can look at Zuni, a language isolate indigenous to the North American Southwest. We cannot apply the comparative method to Zuni, because there are no data from related languages to compare.

Zuni contains a verb prefix *an-* called an "applicative." The applicative indicates that an additional participant is involved in the situation. Added to the verb 'consent,' it creates a new verb that means 'consent to (someone),' that is, 'permit someone to do something.' Added to a verb meaning 'feel pleasure,' it forms a new verb 'feel pleasure at (something), to enjoy (something).'

sewaha	'to consent'	*an-sewaha*	'to consent to'
ʔeluma	'to feel pleasure'	*an-ʔeluma*	'to enjoy'

But this prefix does not always appear as *an-*. Before *h* it takes the shape *ah-*; before *l*, it is *al-*; before *w* it is *aw-*; before the glide *y* [j] it is *ay-*.

heye	'to defecate'	*ah-heye*	'to defecate on'
lalhi	'to jump'	*al-laʔhi*	'to jump at'
weʔa	'to burst out laughing'	*aw-weʔa*	'to burst out laughing at'
yučilati	'to be amazed'	*ay-yučiʔatika*	'to be amazed at'

TEXTBOX 12.6 (*cont.*)

The method of internal reconstruction looks beyond such alternations to the scenario which is likely to have created them. We know that one of the commonest kinds of sound change is assimilation, whereby a sound shifts to become more like its neighbor. The shifting shapes of the Zuni prefix appear to be the result of such changes. We hypothesize that the original applicative prefix was simply *an-, the most common form. Over time, regular processes of assimilation occurred, resulting in the forms we have today: *ah-* before *h, al-* before *l, aw-* before *w*, and *ay-* before *y*. We have thus reconstructed a proto-form of the prefix, and several sound changes, based only on data in this one modern language.

12.6 Linguistic Paleontology

Reconstruction of vocabulary in a proto-language can provide glimpses of the world of its speakers. If, for example, we can reconstruct a term for 'snow,' we can hypothesize that the speakers lived in an area with snow or within sight of snow. We have this term for Proto-Indo-European, reconstructed as **sneigwh-*. Watkins (1981) provides an overview of Indo-European life as seen through reconstructed vocabulary.

The Indo-Europeans apparently lived in an area with wolves (**wlp-*, **wlkwo-*), bears (**rkso-*), beavers (**bhibhru-*), and mice (**mūs-*). There were salmon or trout (**laks-*), eels (**angwhi-*), cranes (**ger-*), eagles (**er-*), thrushes (**trozdos-*), and starlings (*storos*). They knew wasps (**wopsā*), hornets (**kr̥əs-ro-*), flies (**mu-*), and bees (**bhei-*). They gathered honey (**melit-*) and made mead (**medhu-*), a honey-based alcoholic beverage. Watkins hypothesizes that the Indo-Europeans oriented themselves by facing east, because the root **deks-* 'right' also meant 'south.'

Kinship terms reveal an interesting pattern. There are numerous terms for relatives by marriage on the husband's side, such as 'husband's father,' 'husband's mother,' 'husband's brother,' 'husband's sister,' 'husband's brother's wife,' and 'son's wife,' but none for the corresponding terms on the wife's side. This fact suggests that couples took up residency with the husband's family.

The Indo-Europeans were farmers. They had words for 'grain' (**grano-*, ancestor of our corn), or wheat or spelt, and perhaps rye and barley. They ground it (**melə-*, ancestor of *meal* and *mill*). They had verbs for 'sow' (**sē-*), 'plow' (**plōg-*), 'yoke' (**yeug-*), and 'gather' (**kerp-*, ancestor of *harvest*). They kept livestock, including cattle (**gwou-* 'cow/bull'), sheep (**owi*), lambs (**agwhno-*), goats (**ghaido-*), and pigs (**porko-*, ancestor of *farrow*). They had dogs (**kwon-*), and this term was apparently the basis for their word for 'horse' (**ekwo-*). The root **peku-* meant both 'wealth' and 'cattle.' They could weave (**webh-*), sew (**syū-*), and produce textiles (*teks-* 'fabricate, weave'). They knew the wheel (**k^{w}ek^{w}lo*, based on the verb root **k^{w}el(H)-* 'turn').

Indo-European vocabulary was rich in words for ideas, abstractions, and relations. There were numerous terms for mental activity, among them **men-* (source of English *mind*). There were also terms for 'king' (**reg-*), a deity (**deiw-*), religious law (**leg-* and **yewo*, ancestor of Latin *jūs*), and for preaching, praising, and prophesying or singing (**sengwh-*).

As we reconstruct Proto-Indo-European vocabulary and draw inferences about the lives of the Indo-Europeans, we cannot help but wonder just where these people lived. There have been many hypotheses, but the puzzle is not yet solved. One approach is to compare the reconstructed vocabulary with what we know about the natural environment and archeological findings for that period, around the fourth millennium BCE, probably not earlier than 5000 BCE and not later than 2500 BCE. The Indo-Europeans apparently lived where there were wolves, bears, beavers, foxes, otters, hedgehogs, and mice; sparrows, quail, thrushes, cranes, vultures, blackbirds, crows, ravens, eagles, jays, pheasants, and storks; and turtles, frogs, and snakes. But unfortunately most of these animals and birds are ubiquitous through Europe and adjacent Asia, so they do not help us to pinpoint a specific Indo-European homeland.

The term for 'birch' is clearly reconstructible to **bherg'o*-. As pointed out by Mallory (1989: 161), it denotes the birch in Indic (*bhurja*-), Iranian (Ossetic *bärz*), Germanic (*birch*), Baltic (Latvian *berzs*), and Slavic (Russian *berëza*). But the Latin cognate *fraxinus* means 'ash,' and there is no cognate in Greek. About half of the tree names reconstructed for Proto-Indo-European show a shift in meaning in Greek. These facts are taken to suggest that the Indo-Europeans originated elsewhere, then later moved into the area, applying original terms to the new trees they encountered.

One possible location of the homeland is the grasslands area north of the Black and Caspian Seas, known as the Pontic-Caspian steppes (Fortson 2004: 41). The reasoning behind this proposal is interesting. We know that the Indo-Europeans had the wheel. Archeological evidence suggests that wheeled vehicles were invented around 3300–3400 BCE. The Indo-European community could thus not have broken up before this time. At this time, the steppes were inhabited by a group known as the Yamna, who came from the area between the steppes and the nearby forest between the Dnieper and Volga rivers. We know that the Indo-Europeans knew horses. The teeth of horses found in this area from that time show microscopic abrasions, from clamping down on a bit. Additional aspects of culture reconstructed through linguistic paleontology match archeological findings in the area. But without a written tradition, it is not possible to identify the language of communities uncovered archeologically. This hypothesis, while promising, must remain just that.

CHAPTER SUMMARY

We have seen that all aspects of language undergo change. At the phonological level, certain types of sound change are particularly frequent, such as those involving lenition or assimilation. Many of these are motivated by a desire on the part of speakers to reduce the effort necessary for speech. Sound change can have effects beyond the shifting of individual sounds: it can result in the restructuring of the phonological system, with the addition and loss of distinctive features and phonemes. It can also produce seeming irregularities, such as allomorphy. Grammar tends to develop via certain pathways. Grammatical morphemes develop most often from independent lexical items, a process termed grammaticalization. Grammaticalization typically involves a

constellation of changes, including cognitive routinization, generalization of meaning, decategorialization, and ultimately phonological erosion. But not all change is reductive. Speakers are constantly reanalyzing the patterns underlying speech, repairing perceived irregularities by analogical remodeling, and renewing constructions that have lost their expressive force.

The fact that languages are constantly changing can result in the differentiation of languages over time. A language family consists of all of those languages descended from a common parent or proto-language. Relationships among these languages are often represented by family tree diagrams. In this chapter we have seen an example of the comparative method, used to establish genealogical relationships among languages and to reconstruct aspects of their common parent, such as its sound system and vocabulary. The reconstruction of vocabulary in the proto-language can in turn provide glimpses into the lives of its speakers.

Languages are dynamic systems, constantly changing in all areas of their structure and content. The changes are not predictable, but they are also not random. They are shaped by certain human cognitive faculties such as pattern recognition, the routinization of recurring patterns of expression, and the creative acts of speakers eager to find fresh and powerful ways of conveying their thoughts.

TEXTBOX 12.7 **GLOSSING CONVENTIONS USED IN THIS CHAPTER**

Convention	Meaning	Convention	Meaning
DUR	durative	REP	plural
NEG	negation	PL	repetitive
NMLZ	nominalizer		

SUGGESTIONS FOR FURTHER READING

Crowley, **Terry**, and **Claire Bowern**. 2010. *An introduction to historical linguistics*. 4th edn. Oxford University Press.

This is an interesting, reader-friendly introduction to the field, with examples drawn from languages not traditionally cited in such introductions.

Gelderen, **Elly van**. 2006. *A history of the English language*. Amsterdam: John Benjamins.

This book is an excellent introduction to the history of English.

Heine, **Bernd**. 2011. "Grammaticalization in African languages." In **Heine**, **Bernd** and **Heiko Narrog** (eds.), *The Oxford handbook of grammaticalization*. Oxford University Press. 696–707.

This book features a fascinating but somewhat advanced article on grammaticalization.

Slade, **Benjamin** (ed.). *Beowulf on Steorarume*. www.heorot.dk/.

You can find the full text of *Beowulf* by searching for "beowulf" online. A variety of translations are available. You can learn more about the language of the time from an online glossary of all words in the manuscript.

Watkins, **Calvert**. 1981. "Indo-European and the Indo-Europeans." In *The American heritage dictionary of the English language*. Boston: Houghton Mifflin. 1496–1502.

This book contains further discussion of the Proto-Europeans.

EXERCISES

In the exercises here, related forms have already been assembled for you. Normally a major part of work in historical linguistics involves this step as well, the discovery of related forms. These exercises provide just enough data for you to be able to detect certain patterns. Normally, one would consider much more data for a solid analysis.

Guide to historical reconstruction (comparative method)

1. French vowels: sound change

(Thanks to Ben Fortson for expertise on the Romance exercises.)
Several of the exercises for this chapter present data from Romance languages. As we saw in Figure 12.1, Romance is one of the branches of the Indo-European language family. Most of the modern languages in this branch are descended from Latin. Among these are French, Italian, Portuguese, and Spanish, as well as Romanian, Provençal, Catalan, Rhaeto-Romance dialects, and more.

For this problem, look only at the stressed syllables. First describe in words what happened to the vowels in these syllables during the development of French. Then write a rule to capture your description.

SIDEBAR 12.15

Transcription note

The transcription here uses the standard Romance spelling systems, with one addition. The symbol ´ has been added before the stressed syllable in each Latin word. The breve mark (˘) indicates that a vowel is short.

		Latin	French
a.	'foot'	´pĕde	pied
b.	'yesterday'	´hĕrī	hier
c.	'honey'	´mĕl	miel
d.	'holds'	´tĕnĕt	tient
e.	'stone'	´pĕtra	pierre
f.	'hundred'	´cĕntu	cent
g.	'wind'	´vĕntu	vent
h.	'seven'	´sĕpte(m)	sept
i.	'loses'	´pĕrdiŭt	perd
j.	'iron'	´fĕrru	fer

2. Greenlandic consonants: sound change

(Data from Fortescue, Jacobson, and Kaplan 1994) Languages of the Eskimo-Aleut family are spoken over a wide area of the Arctic, from Siberia to Greenland. The family consists of two main branches: Eskimoan and Aleut. The language of Greenland, called Kalaallisut, is a member of the first branch. The data here show one consonant sound shift. Write a rule to describe this sound change. (The symbol *y* here is used for the IPA [j], while the symbol *c* here represents the IPA [tʃ].)

	Proto-Eskimoan		Kalaallisut (Greenlandic)	
a.	*qayaq	'kayak'	qayaq	'kayak'
b.	*taciq	'spit, sand bar'	tasiq	'lake'
c.	*kicaq	'anchor'	kisaq	'anchor'
d.	*uciʀ-	'carry a load'	usiar-	'carry load on one's kayak'
e.	*kənit-	'soak'	kinit-	'soak in order to soften'
f.	*tucaʀ-	'hear, understand'	tusaʀ-	'hear'
g.	*papək	'tail'	papik	'tail'
h.	*nəqə	'food, fish'	niqi	'meat'
i.	*cayuy-	'pull or twitch'	sayuy-	'tremble'
j.	*cianəq	'lengthwise lathe in kayak'	sianiq	'lengthwise lathe in kayak'
k.	*atəq	'name'	atiq	'name'
l.	*əɣə-	'render oil from blubber'	iyi-	'melt (blubber, snow, ice)'

3. Italian laterals: conditioned sound change
For this problem, look only at the development of the lateral /l/ from Latin into Italian. First describe the change in words. Then write a rule that captures what happened.

		Latin	Italian
a.	'moon'	lūna	luna
b.	'milk'	lacte	latte
c.	'freedom'	lībertās	libertà
d.	'color'	colōre	colore
e.	'bad'	malu	malo
f.	'thread'	fīlu	filo
g.	'mole'	talpa	talpa
h.	'much'	multu	molto
i.	'false'	falsu	falso
j.	'sage'	salvia	salvia
k.	'full'	plēnu	pieno
l.	'plant'	planta	pianta
m.	'flat'	plānu	piano
n.	'lead'	plumbu	piombo
o.	'to call'	clāmāre	chiamare
p.	'key'	clāvis	chiave
q.	'to close'	clūdere	chiudere
r.	'flame'	flamma	flamma
s.	'flower'	flōre	flore
t.	'river'	flūmen	flume
u.	'white'	blancu	bianco
v.	'glacier'	glaciāriu	ghiacciaio
w.	'double'	duplu	doppio
x.	'example'	exemplu	esempio

4. **French sibilants: conditioned sound change**
The earliest documentation we have of French is from the ninth century. The term Old French designates stages of the language from that time up to the fourteenth century. Of course, the language was undergoing change throughout that period.

The French sibilants underwent systematic changes during the thirteenth century. (Look at the IPA transcriptions of Old French and Modern French, rather than their standard spellings. Each of the sequences tʃ, ts, dʒ, and dz represents a single consonant sound, an affricate.)

i. Write rules to describe these changes. Describe in words the changes specified in each rule.
ii. Describe in words any other changes that you notice here.
iii. Can you understand why modern French spelling, in the right hand column, seems to fit modern French pronunciation so badly?

		Old French	Modern French	Spelling
a.	'field'	tʃaþmp	ʃã	*champ*
b.	'cow'	vatʃə	vaʃ	*vache*
c.	'judge'	dʒydʒə	ʒyʒ	*juge*
d.	(name)	dʒɔrdʒəs	ʒɔrʒ	*Georges*
e.	'charge'	tʃardʒjɛr	ʃarʒe	*charger*
f.	'hundred'	tsɛþnt	sã	*cent*
g.	'hunt'	tʃatsjɛr	ʃase	*chasser*
h.	'shield'	esky	eky	*écu*
i.	'sword'	espɛdə	epe	*épée*
j.	'our'	nɔstrə	notr	*notre*
k.	'islands'	izləs	il	*îles*
l.	'taken'	pris	pri	*pris*
m.	'have'	avets	ave	*avez*
n.	'to the'	alts	o	*aux*
o.	(name)	fraþntsojs	frãswa	*François*

5. Uto-Aztecan: comparative method
(Data from Sapir 1930; Lamb 1958; Miller 1972; Munro and Mace 1995; assembled in Miller 1988)
The languages here are all from the Uto-Aztecan family. Shoshone territory stretches over areas of Nevada, Utah, Idaho, and Wyoming; Southern Paiute territory from southeastern California into Nevada, Arizona, and Utah; Mono territory on both sides of the Sierra Nevada Mountains in east central California; and Tubatulabal territory along the Kern River near modern Bakersfield, California.

A number of developments have occurred since these languages diverged. Some of the words here include morphemes that are not cognate. These are set off by hyphens. You do not need to include those non-cognate morphemes in your analysis.

For this problem, investigate only the velar stops and any related sounds. Reconstruct a proto-sound or sounds and write rules to describe developments in the various languages.

		Shoshone	Southern Paiute	Mono	Tübatulabal
a.	'fire, heat'	ku-	ku-	ku-na	ku-t
b.	'husband'	kuhma	kumma	kuwa	ku:ŋa-n
c.	'neck'	kuta	kuta	kutta	kula-:n
d.	'firewood'	kuna	kunna	kun(n)a	—
e.	'no'	ke	ka	qa-tuʔu	ha-yi
f.	'rat'	ka:n	ka:	—	ha-wa:l
g.	'jackrabbit'	kammu	kammt	qammt	—
h.	'house'	kahni	kanni	—	hani-:l
i.	'wing, feather'	kasa	kasa-p	qassa	—
j.	'bite'	kɨ-	kɨ-ʔɨ	kɨ-	kɨ-ʔt-t
k.	'edge'	kɨma	kɨŋʷa:	kɨwa	—
l.	'pat grandfather'	kɨnu	kunnu-	kɨnu	—
m.	'come'	kimma	kimma	kimat	—
n.	'elbow'	ki:-	ki:-ppɨ	ma-ki:-pɨ	—
o.	'break, cut in pieces'	—	kapi-	to-qopi	hob-oʔ
p.	'face'	kopa-i	kopa-	qope	—
q.	'snake'	tokoa	tokoa	toqoqqʷa	—
r.	'face'	kopa-i	kopa-	qope	—

6. Gum languages: comparative method
(Data from Z'graggen 1980) New Guinea is home to a vast number of languages, estimated at over 850. They show tremendous diversity as well. Many are not yet described or are under-described. The Gum languages are spoken in northeastern Papua New Guinea, in Madang Province. For this problem, you will reconstruct just some of the consonants.

i. Make a list of all correspondence sets in the data that involve *s*.
ii. Make a list of all correspondence sets involving any of the other consonants in these *s* sets.
iii. Provide reconstructions for all of your correspondence sets. (There is no complementary distribution here.)

Using rules, list all sound changes that affected your proto consonants in each language. Describe in words the rationale for each of your reconstructions.

		Gumalu	Amele	Bau	Panim
a.	'fingernail'	siu	hilo	si	si:lu
b.	'vein'	sirima-	hilima-	sirima-	silimʌ-
c.	'coconut tree'	asuř	ahul	ʌsur	asul
d.	'sugar'	sʌ:	hʌ	sʌ	sʌ
g.	'thou (OBJECT)'	-isɛ-	-ihi-	-is-	-is-
f.	'inside (house)'	famʌn	hʌmol	famʌn	famʌn
g.	'plant'	ɛfɛ-	ɛhɛ-	ɛf-	efe-
h.	'pig'	fo	ho	fo	fo
i.	'hold'	farɛ-	hɛwɛ-	fʌl-	fale-
j.	'ear'	tahi-	dahi-	tahi-	dahi-
j.	'throw (stone)'	tahulɛ-	hɛlɛ-	dahur-	hɛlɛ

7. Romance labials: comparative method

(There are additional complexities in the languages beyond those shown in the data here.)
Provide reconstructions for all of the labial sounds, and then write rules that specify the development of each into the modern language. You may need to compare the phonological environments in which similar correspondence sets occur.

		Italian	Spanish	Portuguese
a.	'soap'	sapere	saber	saber
b.	'bank, shore'	ripa	riba	riba
c.	'head'	capo	cabo	cabo
d.	'bean'	fava	haba	fava
e.	'to prove'	provare	probar	provar
f.	'to have'	avere	haber	haver
g.	'to owe'	dovere	deber	dever
h.	'to wash'	lavare	lavar	lavar
i.	'to live'	vivere	vivir	viver
j.	'beautiful'	bella	bella	bela
k.	'pear'	pera	pera	pera
l.	'form, mould'	forma	horma	forma
m.	'thorn'	spina	espina	espinha
n.	'bath'	bagno	baño	banho
o.	'a pound'	libbra	libra	libra

8. Takanan Reconstruction (Data from Girard 1971)

The Takanan languages are spoken in northern Bolivia and southeastern Peru. For this problem, you will do a complete reconstruction of the sounds of Proto-Takanan and some vocabulary.

- **i.** Make a list of sound correspondences.
- **ii.** Group the correspondence sets by phonetic features so that sets sharing sounds are adjacent.
- **iii.** Check to see whether any related sets are in complementary distribution.
- **iv.** Reconstruct a proto-sound for each set or each group of sets in complementary distribution. There should be a different proto-sound for each correspondence set or group of sets in complementary distribution. The proto-sound you choose for each should entail likely sound changes.
- **v.** With each reconstructed sound, provide rules for its development in the modern languages.
- **vi.** If any of the sound changes you list in your rules is a recognized kind of phonological process, name that process next to the rule.
- **vii.** Check to see that you have reasonable consonant and vowel inventories.
- **viii.** On the basis of your reconstructed sounds and rules, reconstruct the Proto-Takanan word that is the ancestor of each word above.

(The symbol *ñ* represents the palatal nasal: the IPA [ɲ].)

	Takana	Kavineño	Eseʔeha
a. 'moon'	badi	badi	baʔi
b. 'resin'	madi	madi	maʔi
c. 'inside'	duhusu	dokoho	doxoho
d. 'bat'	bina	bina	biña
e. 'grab'	ina-	ina-	iña-
f. 'wind'	beni	beni	beni
g. 'cook, heat'	sina-	hina-	hiña-
h. 'carry'	dusu-	doho-	doho-
i. 'to comb'	pesu-	peho-	peho-
j. 'liana (plant)'	hunu	kono	xono
k. 'watery'	nahi	naki	naxi
l. 'papa'	tata	tata	kaka
m. 'two'	beta	beta	beka
n. 'turtle'	dati	dati	daki-
o. 'squash'	hemi	kemi	xemi
p. 'sleep'	tawi-	tawi-	kawi-

9. Grammaticalization

Each pair of sentences below shows evidence of certain grammaticalization processes within the language. Identify the forms that have undergone any of these processes, and name the processes involved in each development.

A. Bambara

(Data from Donald Lessau, cited in Heine and Kuteva 2002: 75) Bambara is a Mande language spoken in Mali and Senegal, West Africa.

a.

ù	*bɛ́*	*nà*
3PL	AUX	come

'They come.'

b.

à	*bɛ́na*	*sà*
3SG	NEAR.FUT	die

'He will die (soon and/or surely).'

B. Mandarin Chinese

(Data from Sun 1996: 44, cited in Heine and Kuteva 2002: 153) (Tones are not represented here.)

a.

ta	*gei*	*le*	*wo*	*wu-kuai*	*qian*
3SG	give	ASP	1SG	five	CLF

'He gave me five dollars.'

b.

wo	*xie*	*le*	*yi-feng*	*xin*	*gei*	*ta*
1SG	write	ASP	one-CLF	letter	to	3SG.M

'I wrote him a letter.'

C. Negerhollands CD

(Data from Stolz 1986: 153, 179, cited in Heine and Kuteva 2002: 158.)

Negerhollands is a Dutch-based creole that was once spoken in the US Virgin Islands.

a.

ju	*lo:*	*afo*	*fa*	*mi*
2SG	go	in.front	of	1SG

'You go in front of me.'

b.

am	*a*	*flig*	*lo*	*mi*	*di*	*flut*
3SG	PRF	fly	away	PREP	DEF	flute

'He flew away with the flute.'

13 Language Contact and Areal Linguistics

KEY TERMS

- Language contact
- Borrowing
- Calques
- Bilingualism
- Multilingualism
- Pidgin
- Creole
- Interference
- Linguistic area
- Diffusion

CHAPTER PREVIEW

The previous chapter introduced the topics of language change and language family. In this chapter, we will explore one type of language change in more detail, the change that occurs when speakers of different languages interact with each other, in other words, when the languages are in contact. This chapter will introduce linguistic borrowing, the incorporation of forms or even meanings from one language into another. It will examine the motivations for borrowing, the range of borrowed elements, factors which promote or impede borrowing, and what happens as borrowed items are incorporated into another language.

The chapter will also discuss correlations between the sociopolitical relationships of language communities and the degree and nature of change from language contact. It will introduce special contact languages, pidgins, and creoles, which come about when groups of people with no language in common must work together or engage in trade. It will conclude by presenting linguistic areas: geographic regions that result from long-term contact between neighboring languages, which leads to the sharing of features and structural convergence. This chapter demonstrates that languages are strongly influenced by the larger societal, political, and geographic features that define speech communities.

LIST OF AIMS

After reading this chapter, students will be able to:

- **discuss linguistic borrowings and their functions;**
- **identify linguistic borrowings in English;**

- **present arguments for language change conditioned by language contact;**
- **give examples of bilingual and multilingual societies;**
- **identify features of creoles and distinguish them from pidgins;**
- **understand and define the term "linguistic area";**
- **discuss sociocultural prerequisites for the formation of linguistic areas.**

13.1 Language Contact and Areal Linguistics

When you start learning a new language, you may wonder why a word in one language is similar to a word in a language you already know. This situation can result from pure chance. In Latin, 'two' is *duo/dua*. We know this from English words like *dual* or *dualism*. In Malay, the national language of Malaysia, *dua* also means 'two.' This is a coincidence, a curious fact that tells us nothing about the history of these languages, or those who speak them.

SIDEBAR 13.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, and vocabulary quizzes.

Now look at Table 13.1. Color terms in English and in German are very similar to each other. This is no coincidence. The forms and meanings are so similar because these languages come from a single common ancestor, the Germanic subgroup of Indo-European. Their similarities are due to genetic inheritance, as explained in Chapter 12.

Forms and meanings across languages can be similar for yet another reason. Languages and dialects do not exist in a vacuum. Speakers of different languages come into contact with each other: they may trade, intermarry, meet for ceremonies, and so on. The languages are then in **contact**, with many speakers of one having some knowledge of the other. Speakers cannot help borrowing linguistic features back and forth: habits of pronunciation, significant sounds (phonemes), grammatical categories, vocabulary items, and even some grammatical forms. Thus, ***contact is another source of similarity between languages***, whose speakers adjust their speech habits in line with those of their neighbors.

Every language has been influenced by another, at least to some extent. In English, we find many words that are not native vocabulary. For example, the word *umbrella* comes from Italian *ombrella*, which literally means 'little shade,' and the word *cherries* comes from French *cérise*. The impact of language contact is substantial and easy to identify in some languages. In others, it is not so easy. In contrast to English, Hungarian has very few words

TABLE 13.1 No coincidence: color terms in English and German

English	German
white	*weiss*
red	*rot*
green	*grün*
blue	*blau*

taken from other languages; speakers prefer to coin their own words rather than borrow. For example, in English the word *cosmonaut*, literally 'world navigator,' comes from Greek. In Hungarian the word *ür-hajós* ('world navigator') means the same, but all the morphemes are native to Hungarian. Similarly, most languages of Europe use a variant of the word *president* for the head of a company or a republic. Not so in Hungarian: the word for 'president' is *elnök*, which literally means 'first one.'

This shows that some speech communities purposely reject foreign imports. Their language ideologies place negative values on foreign words as unacceptable tokens of language mixing. Sometimes government bodies are even set up to ensure that people speak a "pure" language. Recently, the Academy of the French Language became alarmed at how many people are slipping English words into their French (see Textbox 13.1). They established hefty fines for those who fail to use a French word and use an English word instead.

SIDEBAR 13.2
Considering a particular language variety to be "pure" relates to the notion of **language ideology**; see Chapter 11 for discussion.

TEXTBOX 13.1 **L'ACADÉMIE FRANÇAISE**

Established in 1635 and located in Paris, the French Academy is a body of forty elected officials who are experts on the French language. Elected officials hold office for life and are in charge of compiling, editing, and publishing France's official dictionary, *Dictionnaire de l'Académie française*, which includes approving or denying foreign loanwords for use in French and making occasional revisions to the standard orthography. The Academy also awards prizes to French artists and scholars in literature, painting, poetry, theater, cinema, history, and translation. In an effort to keep French "pure," the Academy has taken a stance against English loanwords like *email* and *software* and against local minority languages including Basque, Catalan, and Occitan.

Figure 13.1 L'Académie française, the Academy of the French Language, in Paris

13.2 Borrowings

When speakers of different languages interact, they borrow forms and meanings. (See Textbox 13.2 on the difference between borrowing and codeswitching.) ***How much they borrow depends on cultural and social factors***, including the degree of knowledge of each other's languages, speakers' sense of purism, ***and also the structure of the languages in contact***. Complex morphological patterns in a language can make the incorporation of a foreign word difficult and thus serve as a natural obstacle to foreign intruders.

TEXTBOX 13.2 **BORROWING VERSUS CODESWITCHING**

When speakers borrow an expression from another language, they insert it into the structures of their native language so that it is surrounded by native words and fits into native grammatical structures. This practice is distinct from **codeswitching**, where a speaker, in a single conversational turn (sometimes even within a single sentence), will switch entirely from one language into another, shifting all phonological, grammatical, and lexical features. Codeswitching is further discussed and illustrated in Chapter 11.

Borrowing is one of the primary effects of language contact. A borrowed item is called a loan. Some **loanwords** are easy to recognize. In English, a person can be said to experience *angst* or *schadenfreude*; a language may have *ablaut*, and a country can be said to engage in *realpolitik*. What we have here, in italics, are **lexical borrowings**: they are words from one language (German) adopted into another (English).

SIDEBAR 13.3
See the South Conchucos Quechua Language Profile, Textbox LP6.1, for examples of loanwords that have been borrowed from Quechua into English via Spanish.

If something is really "cool," an English-speaking youth could refer to it as *über-cool*. The root *cool* is English. But the prefix *über-* is German; it means 'super.' This word contains a **grammatical borrowing**, the borrowing of a derivational prefix. Lexical and grammatical forms can be borrowed from one language directly into another. Or they can come into one language via an intermediate language.

Table 13.2 lists some examples of words from Taino, an Arawak language spoken in the region of what is now Cuba, which were borrowed into Spanish in the sixteenth and seventeenth centuries. These are now common English words.

SIDEBAR 13.4
See the Tsez Language Profile, Section LP7.1, to read about Tsez borrowing of loanwords from several different languages.

These words were borrowed as labels for novel items (for instance, a hanging bed, or hammock) or for area-specific phenomena (an unusually strong wind, a hurricane), for which Spanish (and English) had no word. For more on another type of loanword, see Textbox 13.3.

Sometimes borrowing involves lexical calquing: the creation of a new word, or **calque**, by translating morpheme-by-morpheme

TABLE 13.2 Loanwords in English, borrowed from an Arawak language, Taino, via Spanish

Original form	Original meaning	Spanish	English
barbacoa	'raised frame of sticks, a table used for sleeping or cooking'	*barbacoa* (first noted 1655–1665)	*barbecue* (first noted 1697)
hamaca	'hammock'	*haumaca* (first noted in 1545–1555)	*hammock* (first noted c. 1555)
hurakán	'strong wind'	*hurracán* (first noted in 1510–1515)	*hurricane* (first noted c. 1650)

Sources: Corominas 1961: 83; *The Oxford English Dictionary* 1989; Gastambide Arrillaga 1990: 15; Barnhart 2008: 1202

from a source language. For example, the English term *flea market* is a direct translation of French *marché aux puces*. An example in German is *Ein-drück* 'impression' (lit. 'in-press'), which has been calqued from Latin *im-pressio*. The term for 'roof' in Nigerian Arabic translates literally as 'the head of the house' (Owens 1996): this is how speakers of the surrounding Chadic languages refer to a roof.

TEXTBOX 13.3 **PSEUDO-LOANS**

Speakers of a language may think they've borrowed a word from another language, when actually that word does not exist in the assumed source language. The German word *Handy* refers to a mobile phone, and many Germans think that it was borrowed from English. It does look English, but there is no such word in English with this meaning. The word *footing* in French means 'jogging' – again, this sounds like an English word, but English does not have it. This is what linguists call "pseudo-loans" (Curnow 2001: 427 discusses this in some detail).

Another example of a pseudo-loan is found in Japanese, where the term *hai-tatchi*, borrowed from English *high* and *touch*, means 'high five,' even though the concept is not expressed this way in English.

In addition to lexical calques, ***there are also grammatical calques***. As an example, consider Pennsylvania German (also referred to as Pennsylvania Dutch in the United States), a language spoken by the Mennonite Anabaptists of Swiss-German origin who left Pennsylvania for Ontario, Canada, after the American Revolutionary War. Most speakers of Pennsylvania German are bilingual in English. Their variety of German is replete with calques. One is the immediate future tense, which is expressed by *geh* 'go,' a development inspired by English *gonna* (Burridge 2006: 183).

Meanings can also be borrowed. This can be seen when the meaning of a word is extended to match the range of meanings found in a neighboring, and often dominant, language. The Lakhota verb *iŋyaŋk* originally meant 'to run,' that is, to describe 'the activity of moving fast on one's legs.' In contemporary Lakhota, the verb's meaning has been extended due to extensive contact with English; it can now be used for 'to run for election, to function, operate, work as a device, machine, system, concept' (Ullrich 2008: 775). Semantic extensions that arise through borrowing are referred to as **semantic loans**.

SIDEBAR 13.5
Section 12.2.2 explains how the new phoneme /v/ was borrowed into English from French.

SIDEBAR 13.6
For a look at how extensive glottalization can be in Caucasian languages, see the phoneme inventory in the Kabardian Language Profile (LP1).

Phonemes can also be borrowed. Chapter 12 discussed the process by which the phoneme /v/ was borrowed from French into English. Another example is Armenian, an Indo-European language, which developed glottalized consonants, a feature rarely found in Indo-European; Armenian speakers were in intensive contact with speakers of surrounding Caucasian languages, in which glottalized consonants are ubiquitous (see Chirikba 2008).

In addition to words, ***many languages borrow grammatical forms***, including derivational and inflectional affixes, conjunctions, and discourse markers. For example, speakers of Pennsylvania German freely use English *well* and *I see* in their speech (see Burridge 2006: 189), discourse markers that are commonly used in English. Affixes can also be borrowed. The prefix *über-*, borrowed from German into English, was exemplified above. Another example is the Spanish plural marker *-s*, which has made its way into Mexicano, a Uto-Aztecan language from central Mexico. The Mexicano word for 'basket' is *chiquihuitl*; to pluralize it, one adds the Spanish suffix *-s*, obtaining *chiquihuite-s* (Hill and Hill 1986: 165).

13.2.1 How Do Words Change through Borrowing?

Borrowed words and morphemes often assimilate to the phonological patterns of the recipient language. For example, consider the word *spaghetti*, which has been borrowed into English from Italian. In American and Australian English, the final syllable begins with an alveolar flap [ɾ], following the normal phonological pattern for /t/ in this position for those English dialects. In British English, the final syllable begins with a voiceless unaspirated [t]. The original Italian has neither of these sounds. Instead, it has a **geminate** consonant, or a lengthened stop, represented in writing by the doubling of the letter *t*. We can say that as these words were borrowed into English, they were assimilated to the phonological patterns of the English varieties. This is known as **adaptation**: when a foreign sound in a borrowed word does not exist in the recipient language, it is replaced by the nearest phonetic equivalent. Words that have been perfectly integrated into the phonological and morphological systems of the language can be difficult to identify as borrowings. It takes a linguist to detect that the English words *cherries, very*, and *beauty* are in fact loans, from Old Norman French *cherise*, Old French *verai, varai, vrai*, and Old French *bealte, beaute, biaute*, respectively.

In contrast, unassimilated loans can stand apart from native words in their phonological make-up. We've already seen the example of French /v/, which was borrowed unassimilated into English, leading to the incorporation of /v/ as an English phoneme. Another example is Mazateco, an Oto-Manguean language from Mexico. In that language all voiceless stops become voiced after nasals; thus we never find the sequence [nt], only [nd]. However, in some Spanish loans, among them *siento* (from Spanish *ciento*), a frequently used word for 'one hundred,' one does find the native Spanish sequence [nt]. Mazateco has been described as having two coexistent phonemic systems – one native, and one for loans (see Fries and Pike 1949).

If enough loans are unassimilated, new sounds can enter the phoneme inventory. The English phoneme /ʒ/, which we find in words like *beige* and *rouge*, was not a phoneme in English prior to contact with French. Like /v/, this sound developed into a separate phoneme as a result of numerous loans. Its adoption reinforced an independent sound change that was happening in English: the palatalization of /zj/ to /ʒ/, as in the word *Asia* (see Campbell 1999: 62).

Some loanwords are borrowed with their meanings intact, while others undergo semantic shift; the meanings of loanwords are never fully predictable. We can see this when a single word is borrowed more than once in the history of a language; the different instances of borrowing can develop different meanings in the recipient language, for example, English *chief* and *chef* were both borrowed from the same French word, but *chief* was borrowed into Middle English in the fourteenth century, while *chef* came into Modern English in the nineteenth century.

Some loans retain morphological features of the source language. For example, some Latin borrowings into English require the Latin plural, e.g., the plural of *colloquium* is *colloquia*, whereas others allow either the Latin plural or the English plural, for example, *syllabus* can be pluralized either as *syllabuses* or as *syllabi*. Other borrowed nouns are fully assimilated into the English morphological system and take only the English plural, e.g., *diplomas* as opposed to the original Greek *diplomata*, or *pastas* instead of the Italian plural *paste*.

Some loans retain syntactic features of loanwords, resulting in the development of new syntactic distinctions. An example is Tetun Dili, an Austronesian language spoken in East Timor. This language is currently borrowing many words from Portuguese. Portuguese nouns, like those of other Romance languages, fall into masculine and feminine gender classes, and articles, adjectives, and other dependent elements in the noun phrase agree in gender with the head noun. Tetun Dili, on the other hand, has no native gender system. However, the Portuguese loanwords are now being borrowed in such great numbers that the genders are being borrowed as well; nouns of Portuguese origin require agreement within the noun phrase. The result is that Tetun Dili has two systems of nouns, one gendered and one not, with only the former requiring agreement (Hajek 2006).

13.2.2 Are Some Forms or Some Meanings Easier to Borrow than Others?

One of the hardest tasks in comparative linguistics is to tease apart similarities due to genetic inheritance and those due to borrowing and contact. This task would be easier if certain categories of forms or structures were never borrowed, since then similarities in these categories across languages could easily be attributed to shared genetic inheritance. However, while some types of forms are more resistant to borrowing than others, ***no linguistic feature is entirely "borrowing-proof."*** Words of all lexical classes – including possibly surprising categories, such as numerals, personal pronouns, prepositions, conjunctions, and discourse markers – can be borrowed, as can affixes and other grammatical elements (discussed above).

Some grammatical features are particularly amenable to borrowing. About one-quarter of the world's languages have grammatical systems that obligatorily mark how the speaker has

SIDEBAR 13.7
Evidentials are described in the Language Profiles for Manange (LP3), Tsez (LP7), and South Conchucos Quechua (LP6). See especially the South Conchucos Quechua profile, Section LP6.2.7.

come to know the information being expressed. Such systems are said to mark the speaker's evidence for the facts being conveyed; this is known as **evidentiality**. Getting your information source right is a prerequisite for successful communication in such languages. This is the case in numerous North American Indian languages, including Southern Pauite and Verde Valley Yavapai (Bunte and Kendall 1981). Because the expression of this category is central to their communicative practices, speakers of these languages will sometimes use native evidential markers when they speak English. For example, if a Paiute speaker knows that a woman named Minnie is pregnant because someone told him, he will pass the news onto another by saying *Minnie is pregnant ikm:* the particle *ikm* indicates that the speaker learned this information through a third source, as opposed to learning it through direct observation or by some other means. The fact that evidential meanings – and forms – are prone to borrowing reflects their importance to speakers who have these as part of their linguistic systems; their prevalence in the world's languages shows how important they are in human communication.

13.2.3 Why Borrow?

There are many reasons why people borrow features from other languages. With loanwords, the most common reason is to fill a gap for an item or a concept that the language has no word for. This explains borrowings such as *hammock* (see above), *umlaut*, from German, or *karma*, from Sanskrit. However, there are also more subtle reasons for borrowing. Borrowing may be motivated by prestige, language attitudes, or civic institutions.

Borrowing may be motivated by prestige. Consider the English forms for hooved animals in Table 13.3. The forms in the left-hand column are native, and the ones in the right-hand column are borrowed from French. They belong to an era when French culture dominated the English after the Norman Conquest of 1066, putting emphasis on cuisine and elegant dining (Hock 1991: 385). The terms in the left-hand column refer to animals themselves, the area relegated to peasants who had no exposure to French, or to elegant life. The terms in the right-hand column belong to the sphere of cuisine, where French influence was strong: this explains why they are of French origin.

The cultural dominance of the French-speaking court in administration and warfare is also reflected in the numerous terms from these lexical fields, such as *justice, legal, court,*

TABLE 13.3 Native and borrowed terms for hooved animals in English

English native forms	Forms borrowed from French
cow, bull, ox	*beef*
calf	*veal*
pig/hog/swine	*pork*
sheep	*mutton*

curfew, and *grand jury*. In the current era, we see a different direction of borrowing, with many terms related to information technology being borrowed from English into other languages. For an example of this in Spanish, see Stop and Reflect 13.1.

Language attitudes of speakers, sometimes institutionalized through governmental or civic organizations, can determine whether loanwords are acceptable or not. In many languages, "foreign" importations are rejected tokens of unacceptable "language-mixing." A cultural inhibition against recognizably foreign items and ensuing linguistic purism provides a mechanism for stopping an influx of borrowed forms. Once speakers become conscious of the foreign material in their lexicon – or grammar – they can try to get rid of it. This has happened in the history of various literary languages, including Hungarian, Finnish, and Estonian (see Fodor 1984; Tauli 1984). Such moves toward linguistic purism reflect the association of a group's identity with its own language, in contrast to surrounding, often more dominant, groups (Thurston 1987: 93).

SIDEBAR 13.8
See also the discussions of language ideologies throughout Chapter 11.

SIDEBAR 13.9
See also the Indonesian Language Profile, Section LP12.4, on "language planning."

As we have seen, the nature and degree of language contact are reflections of the history, language attitudes, and social interactions of speech communities. They can also reflect the relative political status of each group. A minor language is likelier to borrow forms from a dominant one than the other way around. This is why we find numerous loans from Spanish into indigenous Meso-American and South American languages, and just a handful of loans from indigenous languages into Spanish.

STOP AND REFLECT 13.1 **HOW TO *EMAIL* IN SPANISH?**

The following discussion was recently spied on a blog about the Spanish language. What does this exchange tell us about the role of English in the domain of electronic media?

Question: I saw in a sample Spanish sentence recently that you used the word *emails*. First of all, why didn't you use a real Spanish word for email? Second, even if that were a Spanish word, why isn't the plural *emailes* instead of *emails?*

Answer: These days, believe it or not, *email* (or *e-mail*) is a Spanish word, very commonly used, although it has not been recognized yet by the Spanish Royal Academy and is considered by many to be an Anglicism. It even has a verb form, *emailear*, that is sometimes used. It is one of those English words that has been adopted into Spanish even though some perfectly good "real" Spanish alternatives exist.

13.3 Bilingual Communities, Diglossia, and Language Shift

Every individual is a member of a linguistic community. If a community is composed of a number of groups each speaking a different language, an individual may be bilingual or multilingual. Bilingualism can be individual: for instance, some descendants of Swedes in America may still speak some Swedish, but may not use it to interact with a broader Swedish community. Bilingualism can also be societal, when multiple communities with distinct languages coexist and most people speak more than one language. Examples of societal bilingualism include Spanish and English in the Southwestern United States, French and

English in French Canada, Gaelic and English in Ireland, Greek and English in some parts of Australia, Hebrew and Arabic in Israel, and many others.

In instances of societal bilingualism, the use of different languages may correlate with different social settings. For example, for many years Latin was the language of the Church, and local European languages were used in day-to-day communication. Using two varieties of the same language under clearly specified conditions is known as **diglossia**. This is when a more prestigious, and usually more archaic, form of a language is used in "high" functions (such as church, school, literature), and a less prestigious colloquial variety is used in "low" functions (day-to-day oral interaction). For instance, in Arabic diglossia, the "high" language of the Koran coexists with local vernaculars. And in Switzerland, Swiss German (*Schwyzertütsch*) varieties are the language of day-to-day interaction in the German-speaking cantons, with Standard German being the "high" variety. Note that the "low" and the "high" varieties in a diglossic society can be different languages (as with Latin and local European languages) or different dialects of a single language (as with Swiss and Standard German).

SIDEBAR 13.10
For more on diglossia, see Section 11.2.3.

In a diglossic or multiglossic situation, languages typically influence each other. This usually works in the direction from high to low. For example, three languages are spoken in Sauris, a German linguistic enclave in northeastern Italy (Denison 1971; Lehiste 1988: 53–54): an archaic form of Southern Bavarian German, Italian (the national language), and Friulian (a Romance language closely related to Italian but distinct from it). German is the "low" language: it is used within the family. Italian, the language of organized schooling and religion, is the high language. Friulian is in between high and low; it is the language of communication with the surrounding Friulian speakers and also serves as a symbol of in-group solidarity among young males who did their secondary schooling in a regional center. Denison noticed that Italian and Friulian elements are acceptable in German (the low language). However, German elements are not introduced into either Italian or Friulian. And Italian – the high language – is also immune from intrusions of the "lower" Friulian. The social relationships between languages and their domains of use correlate with the degree of influence of one onto the other.

In certain types of social situations, the speakers of one language may shift to speaking another, which is typically the language of a socially dominant group. When the majority of a community shifts, it can lead to the **endangerment**, impending **obsolescence**, and **death** of minor languages. When a community loses its language as it adopts a dominant one, it is said to have undergone **language shift**. The original language may leave its traces on the newly acquired language. For example, the variety of English spoken in Ireland has a distinctive prosodic pattern (colloquially referred to as a "lilt"), which was brought into the language when Gaelic speakers learned English. Like most speakers who acquire a new language as adults, they did not adopt the prosody of the language they are acquiring, but spoke it with their native

SIDEBAR 13.11
Some examples of endangered languages are profiled in the second part of this book. See the Language Profiles for Kabardian (LP1), Nuuchahnulth (LP5), Lowland Chontal (LP9), and Manambu (LP10).

patterns of rhythm and pitch. Owing to the numerical predominance of Gaelic people in the region, these Gaelic prosodic patterns were adopted by English children, making it a regular feature of the dialect (also see Filppula 2003).

13.4 Pidgins and Creoles

In the process of European colonization, enslaved or subjugated people from many different linguistic groups were often forced to work closely together. They frequently spoke different languages from their fellow workers and from their employers or overseers; however, they still needed a common idiom for the purpose of business communication. Hence the name "pidgin" (which comes from the English word *business*). **Pidgins** are contact languages that are not native to any of those who speak it. ***Pidgins are used for fairly limited communication between speakers of different languages who have no other language in common***. French, Spanish, Portuguese, English, and Dutch – the major languages of the colonizers – provided the foundation for European-based pidgins.

Not all pidgins resulted from colonization. Trade pidgins have also developed. Among them are Chinook Jargon in the Pacific Northwest of North America, Iatmul pidgin in the Sepik area of New Guinea, and various pidgins in the Arctic (see Jahr and Broch 1996). Pidgins are typically limited in their lexicon and simplified in their structure, compared to the languages they are based on.

As speakers of a pidgin start marrying each other, and ***the language becomes their primary means of communication, it begins to evolve a more complex structure and richer vocabulary***. And for children born of such couples, the pidgin becomes their first language. A former pidgin which has acquired native speakers is called a **creole**. An example is Tok Pisin, a national language of Papua New Guinea. Begin to explore this language by doing the exercise in Stop and Reflect 13.2; see also Textbox 13.4.

TEXTBOX 13.4 **PIDGIN IN HAWAI'I**

The language referred to as Pidgin in Hawai'i is actually a creole, which arose from the multiethnic population of the islands. The video "Pidgin: The Voice of Hawai'i" provides an excellent short overview of how this language came to be. www.pbshawaii.org/pbs-hawaii-presents-pidgin-the-voice-of-hawaii/

Pidgins and creoles are generally agreed not to belong to any single language family: they arise as a makeshift means for filling communicative needs, rather than evolving from natural transmission in the way of regular, non-contact languages.

SIDEBAR 13.12
For a description of an indigenous language that is in a diglossic situation with Tok Pisin, see the Manambu Language Profile (LP10), and Textbox LP10.1 in particular.

The language of the socially dominant population in a situation of creolization is referred to as the **superstrate** language. As it typically contributes most of a creole's vocabulary, it is also called the **lexifier** language. Minority languages that contribute to the

STOP AND REFLECT 13.2 **SOURCES OF TOK PISIN VOCABULARY**

Look at each word in (1) and try to recognize the lexical source of each word and their meanings in Tok Pisin. One word is not from English; can you figure out which one and where it might be from? When you are done, check your answers in Sidebar 13.13 on the next page.

formation of a pidgin or a creole are called **substrate** languages. Some vocabulary from the substrate language typically makes it into a creole. In addition, meanings are often influenced by the indigenous languages that provide the substrate. Tok Pisin, which is spoken in New Guinea, is an English-based creole. The vocabulary includes the noun *gras*, from English *grass*, but in Tok Pisin it refers to grass, hair, and fur. This **polysemy** is the effect of the substrate from Oceanic languages, especially Tolai, that has a noun with these three meanings.

A typical creole looks similar to the lexifier language in terms of its vocabulary, but the grammar is very much unlike it. Consider Example (1) from Tok Pisin. You will notice that many – but not all – words are English-based.

(1) *Mi no save yet sapos bai mi stap long hia o bai mi go long Brisbane long dispela taim*
'I don't know yet if I will be here or if I go to Brisbane at that time'

Example (2) comes from Kristang, a Portuguese-based creole from Malaysia (Baxter 1988: 213). The forms are Portuguese, but the way they are put together (the grammar) is completely different.

(2)

kora	*yo*	*ja*	*chegá*	*nali*	*eli*	*ja*	*kaba*	*bai*
when	1SG	PRF	arrive	DIST	3SG	PRF	finish	go

'When I arrived there he had gone'

13.5 Substratum Interference

If a particular population needs to learn the language of a smaller yet politically dominant group (as is sometimes the case following foreign invasions), they often acquire the **target language** in an incomplete fashion, and so speak it in an altered form. The children of the dominant group might then adopt the altered forms of the target-language speakers and so change the target language itself. Such processes of **substratum interference** have occurred in the history of many languages. Examples include English varieties spoken in Singapore, Papua New Guinea, and other places, or the Afrikaans variety spoken in Zimbabwe.

Majority languages that have dominated indigenous languages in many countries can bear the substrate impact of the minority variety. The English spoken in Ireland has been influenced by the Celtic substrate (see Hilbert 2008; Filppula 2003: 167). The Irish prosodic patterns were mentioned above. Another example is the use of *be* instead of *have* in Irish English, e.g., *They're gone mad* instead of *They've gone mad* (Filppula 2003: 166–167). This structure is parallel to how 'be' is used in Gaelic (Irish) and could be attributed to substrate influence.

13.6 Linguistic Areas

A **linguistic area** ***is defined as a geographic region including languages from at least two language families, or different subgroups of the same family, sharing significant traits.*** The sharing is caused by **diffusion**, the spread of linguistic features from one language (or person) to the next. Although languages in linguistic areas may be from different families with distinct vocabularies, their structures may **converge** toward a similar prototype.

The best types of evidence for a linguistic area are not traits that are inherited from a common anscestor, or those that arise due to chance or language universals, but rather those that can be shown to be diffused. Thus, a highly frequent phenomenon – such as verb-final constituent order, the existence of nasalized vowels, or the presence of a past versus non-past opposition in the tense system – would not be assigned as much weight in determining a linguistic area as would a more exotic, unusual characteristic. An example of such an exotic feature is the marking of evidentiality in the Vaupés River area of Brazil; we will return to this shortly.

While a single typologically common trait cannot by itself define a linguistic area, the clustering of traits can be area-specific. When we look at different linguistic areas throughout the world, we see that each is defined by a different cluster of properties. Here are four examples of linguistic areas and the features which define them:

1. **Meso-America** (Campbell et al. 1986). The languages of this region belong to several different language families, including Mayan, Mixe-Zoquean, Totonacan, and Otomanguean, among others.
   - **a.** Nominal possession of the type *his-dog the man* ('the man's dog');
   - **b.** Body-part nouns being used as markers of spatial relationships (e.g., 'head' for 'on top of');
   - **c.** Vigesimal numeral systems (i.e., systems of counting based on twenty as opposed to ten);
   - **d.** Basic constituent orders that are not verb-final;
   - **e.** Numerous **lexical collocations**, or ways of expressing particular concepts that are common throughout the Meso-American area, e.g., 'knee' as 'head of the leg,' or 'boa-constrictor' as 'deer-snake.'

2. **The Balkan Peninsula**. All the languages belonging to the Balkan linguistic area are Indo-European, but from different subgroups. The Slavic languages include Serbian, Croatian, Bulgarian, and Macedonian; there is also Romanian (a Romance language), Greek, and Albanian. Some scholars add to this Romani (the language of the Gypsies, from the Indo-Aryan branch of Indo-European) and Turkish, an unrelated Turkic language.

SIDEBAR 13.13

Answers to Stop and Reflect 13.2

Tok Pisin	English source	Meaning in (1)
mi	*me*	'I'
no	*no*	NEG
yet	*yet*	yet
sapos	*suppose*	'if'/'whether'
bai	*by*	FUT
stap	*stop*	'be at,' 'stay'
long	*long*	location
hia	*here*	here
o	*or*	or
go	*go*	go
dispela	*this fella*	this
taim	*time*	time

The word from another language is *save* 'know,' from Portugese *saber*.

SIDEBAR 13.14

Another **linguistic area**, the Caucusus, is briefly discussed in the Tsez Language Profile (LP7).

a. A central vowel /ɨ/ or /ə/ (absent from Greek and Macedonian);
b. A single affix that is used for both the dative and the genitive cases;
c. Articles that follow the noun (absent from Greek);
d. A future tense marked by an auxiliary corresponding to 'want' or 'have' (absent from Bulgarian and Macedonian);
e. The use of the auxiliary verb corresponding to 'have' in constructions of the type *I have gone* in English (i.e., perfect aspect constructions);
f. The absence of infinitives in complement clauses;
g. The use of a pronoun in addition to a full noun phrase to refer to an animate object, so that the object is marked twice (Friedman 2006).

3. **The Vaupés River Basin in Brazil and Colombia**. Languages from this region belong to the genetically unrelated Tucanoan and Arawak families. The area is characterized by obligatory societal multilingualism, based on the principle of **linguistic exogamy:** one can only marry someone who speaks a different language.

a. Nasalization that occurs on most or all segments in a word;
b. Four to five evidential morphemes, which mark the way in which the speaker has acquired the information (whether seen, heard, inferred, assumed, or learned from someone else);
c. Numerous **classifiers** used with demonstratives, numerals, and in possessive constructions;
d. Small systems of genders in verbal agreement;
e. Nominative-accusative case-marking;
f. A single locative case-marker that indicates direction ('to'), location ('in, at'), and source ('from');
g. Numerous lexical collocations, e.g., 'father of goods' = 'rich man.'

4. **South Asia** (Emeneau 1956; Masica 1976, 2001). This linguistic area is composed of languages from the Indo-Aryan, Dravidian, Munda, and Tibeto-Burman families.

a. Retroflex consonants, especially stops;
b. Dative-subject constructions (where some subject arguments are marked with the dative case);
c. A compound verb construction whereby a special auxiliary combines with the immediately preceding main verb and the two verbs refer to a single event;
d. The use of an affix to mark causation;
e. Verb-final constituent order.

It is important to reiterate that no single one of the features is found only in the particular linguistic area, as you can find similar features throughout the world. However, the clustering of the properties is area-specific; it is only in the particular area that the whole set of properties recur in language after language. In a situation of intensive language contact within a linguistic area, the gradual convergence of languages may result in **structural isomorphism**. In such a case, the grammar and the semantics of one language are almost fully replicated in another. To explore an example of this, see Stop and Reflect 13.3.

STOP AND REFLECT 13.3 **STRUCTURAL ISOMORPHISM**

A striking example of structural isomorphism comes from two languages spoken within the Vaupés River Basin linguistic area. Consider the two sentences below, both taken from traditional stories involving a female cannibal. Example (3) is from Tariana, an Arawak language, and (4) is from Tucano, a Tucanoan language, which is in constant contact with Tariana. Compare the content and order of the morphemes in these two examples; what do you notice?

(3) Tariana

nese	*pa:ma*	*di-na*	*du-yana-sita-pidana*
then	one.NUM.CLF.F	3SG.NF-OBJ	3SG.F-cook-ALREADY-REM.PST.REPORT

'She had reportedly cooked him already' (reportedly, a long time ago)

(4) Tucano

tiîta	*ni'kó*	*kĩ̃-re*	*do'á-toha-po'*
then	one.NUM.CLF.F	3SG.M-OBJ	cook-ALREADY-REM.PST.REPORT.3SG.F

'She had reportedly cooked him already'

Figure 13.2 Tariana men from Santa Rosa, who have Tariana as their first language and who also speak Wanano, Desano, and Piratapuya. The women speak Piratapuya, Wanano, Siriano (Tucanoan), and Baniwa (Arawak), but hardly any Tariana. Everyone also knows Tucano, and most people know Portuguese.

Linguistic convergence does not always result in the creation of identical grammars. It is also not the case that categories in language contact always match. Languages in contact often maintain some distinct typological traits. This can be seen from in Stop and Reflect 13.3: Tariana maintains its prefixes, and Tucano its suffixes.

Examples of convergence within linguistic areas show that languages may come to be structurally similar due to areal diffusion, notwithstanding the original differences between them.

CHAPTER SUMMARY

Languages and their speakers do not exist in a vacuum. Different linguistic communities frequently come into contact with each other. Their languages are then in contact, with many speakers of one language having some knowledge of the other. Speakers naturally borrow linguistic features back and forth; habits of pronunciation, significant sounds (phonemes), grammatical categories, vocabulary items, and even some grammatical forms are taken from one language and applied in another.

Here are some of the general principles that have been presented:

- Languages reflect the sociolinguistic history of their speakers. If one language community dominates the other, we expect the language of the dominant group to have more impact than the language of the other group.
- Language contact may result in direct diffusion (borrowed lexical and grammatical forms) and indirect diffusion (borrowed or calqued patterns).
- Language contact may result in the creation of pidgins and creoles. These are nongenetic in their origins and do not belong to any linguistic family.
- Languages may share features, or combinations of features, as members of an extensive linguistic area.
- Convergence within linguistic areas and contact situations may result in one language adopting the structure of the other. Or it may result in one language adopting new patterns and forms, while at the same time preserving some of its own properties. The outcomes of convergent development depend on the degrees of dominance within each area.

TEXTBOX 13.5 GLOSSING CONVENTIONS USED IN THIS CHAPTER

Convention	Meaning	Convention	Meaning
1	first person	NF	non-feminine
3	third person	NUM.CLF	numeral classifier
ALREADY	already	OBJ	objective
DIST	distal	PRF	perfect aspect
F	feminine	REM.PST	remote past
M	masculine	REPORT	reported knowledge
		SG	singular

SUGGESTIONS FOR FURTHER READING

Appel, **René**, and **Pieter Muysken**. 2005. *Language contact and bilingualism*. Amsterdam: Academic Archive.

A concise introduction to language contact, with a focus on bilingualism and language acquisition.

Bakker, **Peter**. 2017. "The typology of mixed languages." In **Aikhenvald**, **A. Y.** and **R. M. W. Dixon** (eds.), *The Cambridge handbook of linguistic typology*. Cambridge University Press. 217–253.

This is an up-to-date summary of mixed languages in the context of new achievements in contact linguistics and their role in creating new identities.

Hickey, **Raymond** (ed.). 2010. *The handbook of language contact*. Malden, MA: Wiley-Blackwell.

A good resource on recent achievements in contact linguistics.

Lehiste, **Ilse**. 1988. *Lectures on language contact*. Cambridge, Mass.: MIT Press.

A brief general introduction to language contact, full of insights and generalizations, with an incisive characterization of concepts such as linguistic area and creolization.

Thomason, **Sarah G.**, and **T. Kaufman**. 1988. *Language contact, creolization, and genetic linguistics*. Berkeley: University of California Press.

An overview of language contact and contact-induced change, with an emphasis on sociopolitical factors rather than linguistic features in language contact.

Velupillai, **Viveka**. 2015. *Pidgins, creoles and mixed languages: An introduction*. Amsterdam: John Benjamins.

An up-to-date introduction to the ways in which languages emerge and the processes of creolization and the creation of mixed languages.

Weinreich, **U.** 1953. *Languages in contact*. New York: Linguistic Circle of New York.

A classic work on language contact, with a focus on bilingual communities, and a must-read for any student of language contact.

Winford, **Donald**. 2003. *An introduction to contact linguistics*. Oxford: Blackwell.

An introduction to issues related to language contact, with a special focus on the formation of creoles and pidgins.

EXERCISES

1. When words are borrowed into a language, they can retain their basic meanings but take on different stylistic connotations. This is often the case with French and Latin loans in English.

   A prominent linguist was asked to write a grant proposal for a high-status grant-giving agency. He then was asked to write a popular article for a students' magazine on the same topic as his grant proposal. Two extracts from the grant application and two from the popular article are given below.

   Extract 1
   In similar fashion, scholars have demonstrated the genetic unity of Australian languages.

   Extract 2
   In exactly the same way, linguists have shown that almost all the languages of Australia belong to one language family.

   Extract 3
   The documentation of endangered languages is, for a number of reasons, one of the highest priorities facing mankind at the turn of the millennium.

Extract 4
Writing grammars and descriptions of languages that are about to die is, for all sorts of reasons, one of the most important things to be done in the world as we near the year 2000.

i. Identify which two extracts come from the grant application, and which two come from the popular article. What specific features of each extract served as clues as you considered this?

ii. Using a dictionary that provides reliable etymologies (such as *Merriam-Webster Online*), look up the source language of each of the following words and state whether the word was originally Germanic (i.e., evolved from Old English and related to Old High German, Old Norse, etc.) or whether it was borrowed into the language from a Romance language (i.e., Latin or French) or Greek. In some cases a related word is provided; the words in paretheses are the forms attested in the extracts.

Extract 1	**Extract 2**
similar	*exact (exactly)*
fashion	*same*
scholar	*way*
demonstrate	*linguist*
genesis (genetic)	*show (shown)*
unity	*almost*
Austr- (Australian)	*all*
language	*belong*
	one
	family

Extract 3	**Extract 4**
document (*documentation*)	*write*
danger (*endangered*)	*grammar*
number	*scribe* (*description*)
reason	*about*
high (*highest*)	*die*
prior (*priority*)	*sort*
face (*facing*)	*reason*
man	*most*
kind	*important*
turn	*thing*
millennium	*do*
	world
	near
	year

iii. Based on your answers to tasks (a) and (b), what can you say about the relationship of the historical source of vocabulary to academic and popular genres of written English?

2. Identify the origin of each of the following loanwords in English and explain why you think they were borrowed:

a. *karma*
b. *swastika*
c. *kumquat*
d. *pajamas*
e. *croissant*
f. *cockatoo*
g. *kangaroo*
h. *mutton*
i. *canoe*
j. *torso*

3. The following words are all loanwords in English.

i. Write a hypothesis of what language each word might come from.

ii. Check your accuracy by looking up each word in the *Online Etymological Dictionary* www.etymonline.com. For each word write the ultimate source of the word, plus any other languages that might have been involved in the word's transition into English.

iii. Have there been semantic changes in the history of each word from its source to its meaning in contemporary English? If so, state the nature of the semantic change.

a. *balcony*
b. *boon*
c. *boondocks*
d. *boss*
e. *chemistry*
f. *coach*
g. *cozy (cosy)*
h. *cushy*
i. *dad*
j. *jazz*
k. *landscape*
l. *mammoth*
m. *money*
n. *pal*
o. *patio*
p. *shaman*
q. *ski*
r. *sofa*
s. *tangerine*
t. *vampire*

4. In Zulu orthography, the trigraph *tsh* represents an aspirated postalveolar affricate [tʃʰ], the letter *j* indicates a voiced postalveolar affricate [dʒ], and the letter *y* indicates the palatal glide [j]. (Adopted from Zhurinskij 1995: 33.)

i. Determine the original English source for each loanword. (Examples (e), (q), and (aa) are proper nouns.)
ii. The initial vowel is a separate Zulu morpheme that is added based on the semantics of the loan. What semantic class of noun takes *u-* instead of *i-*?
iii. State the phonological rules by which English words are assimilated into Zulu phonology. (*Note*: It is always better to state a general rule, such as "voiceless stops become voiced," than to state multiple specific rules, such as p > b, t > d, and k > g.)

a. *ipulatifomu*
b. *isiginali*
c. *ipikiniki*
d. *ipalagilafu*
e. *ifulansi*
f. *ikilasi*
g. *igilamafoni*
h. *imininiti*
i. *igilamu*
j. *ipulani*
k. *ikiliniki*
l. *ibizinisi*
m. *ujamu*
n. *uwisiki*
o. *itenisi*
p. *ibesiboli*
q. *ifulentshi*
r. *ipuleti*
s. *idina*
t. *idesiki*
u. *ikoliji*
v. *itsipuni*
w. *ifulemu*
x. *upepa*
y. *usoda*
z. *ubiya*
aa. *indiya*

iv. How would the following English words sound if borrowed into Zulu?

a. *flat*
b. *cap*
c. *cricket*
d. *globe*
e. *film*
f. *gin*
g. *ginger*
h. *brake*
i. *inch*
j. *juice*

v. What does the proper noun *ingilandi* mean in Zulu?

5. The words given below are Kikuyu words that were borrowed from English into Kikuyu, as well as the English source word. Orthographic *th* represents IPA [ð] and *j* represents the voiced postalveolar affricate [dʒ]. (Adopted from Zhurinskij 1995: 41.)

i. Make a list of the phonological changes that these words underwent when they were adapted to Kikuyu phonology. Again, generalize where possible.

	Kikuyu	**English source**
a.	*thukuru*	*school*
b.	*haithukuru*	*high school*
c.	*anderethi*	*address*
d.	*raimbarari*	*library*
e.	*miritari*	*military*
f.	*korenji*	*college*
g.	*thateraiti*	*satellite*
h.	*mbuku*	*book*
i.	*thonda*	*soda*
j.	*mboi*	*boy*
k.	*rumu*	*room*

ii. How would the following English words sound if borrowed into Kikuyu?

a. *dresser*
b. *glue*
c. *agenda*

6. Find someone who is a native speaker of a language other than English and ask them to pronounce ten English loanwords in their languages. (For examples of loanwords in French, see www.topito.com/top-anglicismes-francais-has-been; similar sites are available for some other languages.)

i. Record their pronunciation and transcribe the words in IPA.
ii. Describe any phonological differences between the loanword and Standard English.
iii. What factors may have contributed to the differences that you found? You may want to do some exploratory research on the phonology of the target language to inform your discussion.

7. The examples of blended Spanish and English below were found in photographs of language usage via Google Images.

i. For each example, state whether it represents borrowing or codeswitching and provide justification for your answer.
ii. For borrowing, state whether the borrowing is of Spanish vocabulary into English or English vocabulary into Spanish.

a. Dr. Pepper ad: *23 sabores* [flavors] *blended into one extraordinary taste*
b. Photo of plastic bin with handwritten cover: *Forks y* [and] *knives*
c. Photo of a medical prescription: *aplicar* [apply] *a thin layer to scalp y* [and] *forehead cada noche al acostarse* [every night at bedtime] *por* [for] *2 weeks*

8. Tok Pisin is a creole language spoken in Papua New Guinea; it was discussed briefly above. The creole is derived from English but is clearly distinct from it. The excerpts below are taken from a cartoon in a newspaper. They both feature Isuzu trucks; in the second one, the truck is being used as PMV (Public Motor Vehicle) – a type of public transport. Each excerpt is given in Tok Pisin, with an English translation provided.

Make a glossary containing each Tok Pisin word and its English counterpart. Wherever possible, identify the original English word or words that were initially adopted to express each meaning. Finally, note any grammatical features that differentiate Tok Pisin from English.

Example I (picture shows men squeezing into a pickup truck)

Man A: *Mipela i kam nau long Los Angeles lukim ol profesenel basketbol … Ol mai hia i bikpela liklik … Tasol mipela inap putim beksait long Isuzu na karim ol i go bek long hotel.*
'We are now coming to Los Angeles to see professional basketball … Men here are a bit big. But we can put our backsides into an Isuzu truck and take all back to the hotel.'

Man B: *Tru tumas, Isuzu em inap …*
'Very true, Isuzu can do that/is sufficient … '

Example II (picture shows a mother dragging a complaining child into a truck, which is being used like a taxi)

Child to mother:	*Mama, mama, mi no laik …* 'Mama, mama, I don't want … '
Mother to child:	*yu kam, yu blary hambag..* 'You come, you naughty humbug.'
Driver:	*Mi amamas tru ranim dispela Isuzu PMV … Olgeta de mi bungim planti ol naispela pipel … Em i gutela wok tru …* 'I am happy to run this Isuzu PMV … Every day I meet many nice people … This is a really good job … '

9. The following rhyme, "Inglan Is a Bitch," is by Jamaican artist Linton Kwesi Johnson. A recording of Mr. Johnson performing this piece can be found on YouTube. The transcription in Jamaican orthography is from the website Jumieka Langwij.

Ingglan Iz A Bich
bai Lintan Kwiesi Jansn

Wen mi jos kom tu Landan Toun
mi yuus tu werk pan di Andagroun
bot woerkin pan di Andagroun
yu dohn get fi noo yor wie aroun
Ingglan iz a bich dierz no eskiepin it
Ingglan iz a bich
dierz no ronin we fram it

mi get a likl jab in a big ootel
an afta a wail mi waz duin kwait wel
dem staat mi aaf az a dishwasha
bot wen mi tek a stak
mi no ton klak wacha
Ingglan iz a bich dierz no eskiepin it
Ingglan iz a bich
No bada chrai fi haid fram it

Wen dem gi yu di likl wiej pakit
fos dem rab it wid dem big tax rakit
yu hafi schrogl fi mek enz miit
an wen yu go a yu bed
yu jos kyaahn sliip
Ingglan iz a bich
dierz no eskiepin it
Ingglan iz a bich fi chruu
a no lai mi a tel a chruu

Mi yuus to woerk dig dich
wen it kuol no bich
mi did schrang laik a myuul
bot bwai mi did fuul
den afta a wail mi jos stap du uovataim
den afta a wail mi jos pudong mi tuul
Ingglan iz a bich
dierz no eskiepin it
Ingglan iz a bich
yu hafi nuo hou fi sovaiv in it

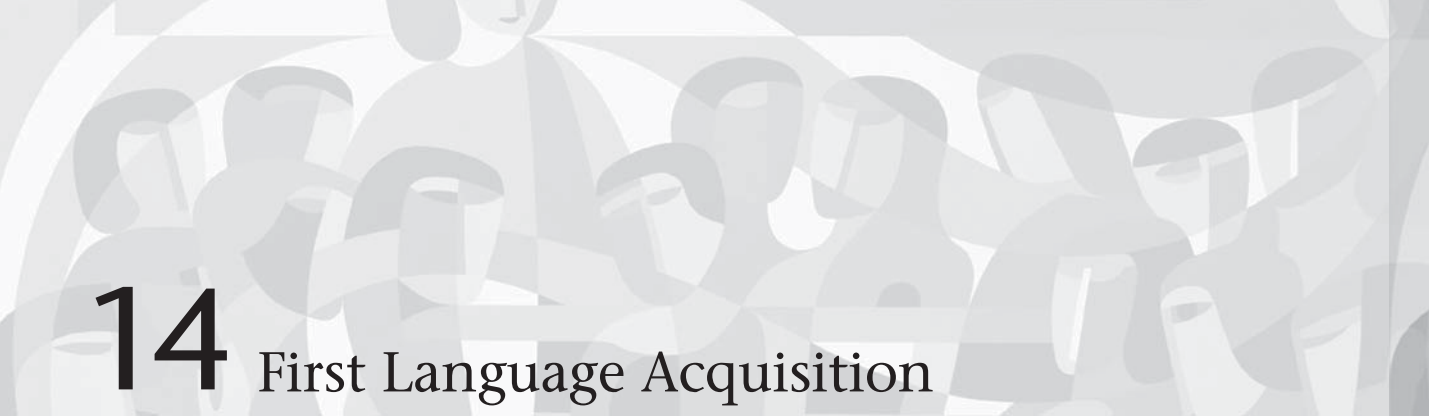
Wel mi du die wok an mi du nait wok
mi du kliin wok an mi du doti wok
dem se dat blak man iz veri liezi
bot if yu si ou mi wok yu wuda se mi kriezi
Ingglan iz a bich
dierz no eskiepin it
Ingglan iz a bich
yu beta fies op tu it

Dem hav a likl fakchri op ina Brakli
ina disya fakchri aal dem du iz pak krakri
fi di laas fiftiin yierz dem get mi lieba
nou aafta fiftiin yierz mi faal out a fieva
Ingglan iz a bich
dierz no eskiepin it
Ingglan iz a bich
dierz no ronin we fram it

Mi nuo se dem av woerk
woerk in abondan
yet stil dem mek mi ridondan
nou at fifti-faiv mi getin kwait uol
yet stil dem sen mi fi go jraa duol
Ingglan iz a bich
dierz no eskiepin it
Ingglan iz a bich fi chruu
iz we wi ago du bout it?

i. Watch the YouTube video and read through the transcription, then do your best to translate the text into English. Make a list of any parts that were challenging to translate.
ii. Do you notice any differences in the meaning or use of lexical items compared to Standard English? (Use either American English or British English for this assignment; be consistent.)
iii. List four phonological features that are different in Jamaican Creole from the dialect of English you are using to compare. Choose words with these features and transcribe both the Jamaican Creole and English words in IPA. Then describe the differences phonetically.
iv. List at least three grammatical differences that you notice between Jamaican Creole and American or British English. Describe each one.

10. Visit the Wikipedia pages on the Mainland Southeast Asia linguistic area, the Pueblo linguistic area, and the indigenous Australian Aboriginal languages. What set of features characterizes each linguistic area? How did these shared features likely come about, given that each area has languages from multiple language families?



14 First Language Acquisition

KEY TERMS

- Longitudinal vs. cross-sectional methodology
- Child-Directed Speech (CDS)
- Phonological error patterns
- Lexical overextension
- Overregularization
- Given versus new information
- Functional continuity
- Narrative co-construction
- Formal, nativist theory
- Functional, discourse-based theory

CHAPTER PREVIEW

Language acquisition holds a central place in linguistics because every linguistic theory must be able to answer the following question: how do children master the basics of their first language spontaneously, without explicit instruction, in a fairly short time, and at a very early age? This chapter will examine the acquisition of many areas that have already been explored in this book, introducing some of the basic research findings in phonology, pragmatics, lexical semantics, morphology, syntax, and discourse. It will also contrast two different theoretical approaches to explaining the everyday yet profound mystery of first language acquisition.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **describe early linguistic developments in several areas;**
- **identify common research methodologies and their advantages/disadvantages;**
- **perform basic analyses on first language acquisition data;**
- **explain some of children's common linguistic errors;**
- **contrast two different theoretical approaches to language acquisition.**

14.1 Introduction

First language acquisition is the process by which young children come to know and use the language(s) of their caregivers. Over the past fifty years, scholars have produced a large body of research on the acquisition of many languages but are still far from consensus on how to interpret these findings. The goal of acquisition theory is to articulate explicit explanations for how children master their native language(s), with particular focus on the acquisition of grammar.

SIDEBAR 14.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, vocabulary quizzes, and data transcripts to be used with the chapter exercises.

First language acquisition has been a controversial area because it forces us to address basic issues about the nature of language itself. Two very different approaches to grammar have dominated research on language acquisition:

- In the formal, nativist approach, grammar is conceptualized as a set of abstract categories, structures, principles, and constraints that are genetically encoded as an innate Universal Grammar (UG). The emphasis in this approach is primarily on linguistic form, and the innate linguistic information in UG is regarded as the basis for adult grammar as well as the acquisition of grammar by children.
- In the functional, discourse-based approach, on which this chapter is based, grammar is viewed as a set of forms and functions that are constantly being shaped by the mental processes and communicative needs of speakers and hearers as they use language in everyday talk (discourse). This approach emphasizes the functions (meanings and interactive goals) as well as the forms of grammar, and views discourse as the source of adult grammars and the basis for their acquisition.

While nativist theory assumes that children need innate linguistic knowledge to acquire grammar, discourse-based theory (also known as usage-based theory) assumes that children learn language from discourse, that is, the speech they hear in everyday social interaction. We will return to a more in-depth consideration of these two approaches toward the end of this chapter.

14.2 Biological, Cognitive, and Social Foundations of Language Acquisition

First language acquisition has a strong biological basis. The human brain, usually the left hemisphere, is specialized for language, and all normally developing children acquire language on a fairly predictable timetable, similar to patterns of physical and mental growth. Many scholars believe that there is a biologically programmed **sensitive period** during which young children can most readily acquire their first language successfully. Our biological preparation for language also entails a long period for mental and social development during which babies and young children are dependent on their caregivers. In this chapter it will be assumed that children have universal mental and social capacities

that enable them to learn language from the speech that they hear. These capacities are an important part of our biological adaptation – and of any sensitive period – for language acquisition.

Language acquisition also has crucial cognitive foundations. The term **cognition** refers broadly to the mental processes that take in information from the environment, use it to form representations of reality in the mind, and apply this stored knowledge in activities such as thinking, speaking, and remembering. In order to use language, we must be able to perceive, comprehend, plan, produce, and recall linguistic units, such as phonemes, morphemes, words, and sentences. First, the human mind must have powerful cognitive abilities that enable young children to isolate, store, and process these units in the surrounding speech. Secondly, children need to understand something about cause–effect relations in order to use language as a tool for communicating and getting what they want. Thirdly, in order to use words, children must be able to form mental representations of reality, for example, a mental image of a bottle that can be associated with the word *bottle*; such representations allow children to recognize new instances of items when they encounter them and to think about them when they are not in view. Finally, children must be able to discover and use patterns for combining units into larger units, for example, phonemes and morphemes into words, words into sentences, and sentences into narratives, conversations, and other types of discourse.

We know from harrowing stories of abandonment and isolation that ***language acquisition has essential social foundations***: children need to experience language use in interaction with others in order to acquire language normally. Infants in normal social environments are naturally motivated to interact and communicate with their caregivers. Long before they can use language, the social basis for language acquisition is established, as infants engage with their caregivers through eye gaze, smiling, gesturing, and vocalizing. The repetitive social routines of young children's daily lives ensure that they will experience the same linguistic forms being used for the same functions again and again. Thus, children learn the forms and functions of language together, along with relevant social information, such as who usually says what to whom in particular contexts.

14.3 Methodologies in Acquisition Research

Acquisition researchers use a great variety of methodologies. We can distinguish between **observational studies**, in which the researcher records what the child is saying and doing, and **experimental studies**, in which the researcher manipulates linguistic or contextual features to observe the effect on the child. Observational research has the obvious advantage of naturalness, but the findings are necessarily limited to whatever behaviors occur during the observation. Experiments have the advantage of control but run the risk of eliciting behaviors that happen only in the laboratory and may not be relevant to everyday life. We can also distinguish between **longitudinal research**, which follows one child or a small number of children over time, and **cross-sectional research**, which compares larger numbers of children at different

stages of development speaking spontaneously or performing the same experimental task. Observational research is often longitudinal, while **experimental research** typically has a cross-sectional design. Which method is most appropriate depends on what question the researcher is asking and what kind of data is most likely to yield reliable answers to that question.

TEXTBOX 14.1 CHILDES: THE CHILD LANGUAGE DATA EXCHANGE SYSTEM

There is now a vast body of language acquisition data available to students and scholars at the *CHILDES* website. This resource includes transcripts from multiple languages, some with associated audio and video files, as well as programs for analyzing the data and a variety of instructional materials.

The original observational method was the diary study, in which the researcher kept a written record of the child's speech. In diary studies, the researcher is often a parent, who has the advantage of constant access to the child. Diaries are selective, however, and tend to be biased toward new or advanced language, while providing little or no information about the speech addressed to the child. Recordings of speech are now the preferred observational methodology (see Textbox 14.1). Recordings are objective and comprehensive, including all participants' speech; they are also independently verifiable, since transcripts can be checked for accuracy against the original recordings. On the other hand, the types of contexts recorded tend to be limited and the amount of data sparse, usually just a few hours of speech per month. The introduction of **dense sampling**, that is, collecting and transcribing at least five hours per week of a child's verbal interactions, is an expensive, labor-intensive methodology, but one that yields a finer-grained, more reliable record of development (Lieven and Behrens 2012).

Experimental research encompasses a wide range of methodologies and types of tasks. In comprehension experiments, for example, children may be prompted to use toy figures to act out sentences they hear. In production experiments, children may be prompted to tell a narrative using a picture book, describe an event after being taught invented words, such as *Mickey slooped* (= catapulted with a lever) *the ball*, or simply describe an object in tasks designed to elicit particular forms, e.g., *the horse that's wearing a hat*. In judgment tasks, children may be asked to assess the grammaticality of sentences in various ways, for example, by correcting a puppet that makes grammatical errors while attempting to speak English. Ingenious technologies have been used to study infants, as in studies of high-amplitude sucking (infants suck on an artificial nipple faster when they hear a new sound), head turn preferences (infants turn their head to activate one of two audio speakers, e.g., the one that plays their mother's voice versus that of a different speaker), and preferential looking (infants listening to speech with two screens in view will gaze longer at the one that accurately depicts what they are hearing). Although less natural than spontaneous language use, experiments can yield valuable and sometimes surprising findings that could not have been discovered using observational methods.

14.4 Overview of Language Development

How does the process of language acquisition unfold? Textbox 14.2 gives a sample of several developmental milestones. Since individual children vary greatly in the age at which they attain these milestones, the age ranges given in Textbox 14.2 are rough approximations. In the sequence of development, changes take place simultaneously across different areas, from the mastery of speech sounds (phonology) to the construction of narratives (discourse).

Development proceeds incrementally but swiftly; the difference between the linguistic skills of a one-year-old versus a three-year-old is nothing short of astonishing.

TEXTBOX 14.2 **OVERVIEW OF EARLY COMMUNICATION AND LANGUAGE DEVELOPMENT**

Age	Developmental milestones
in utero	• Perception of low-frequency properties of voices, e.g., rhythm, pitch
0–2 months	• Perception of phonetic distinctions between sounds, e.g., [p] vs. [b]
3 months	• Mutual gaze; simultaneous or alternating vocalizations with caregiver
	• Social games, e.g., peekaboo
4 months	• Joint attention to objects: follows caregiver's gaze and pointing
6–10 months	• Babbling (reduplicated), e.g., [baba]
8–12 months	• Communicative gestures, e.g., pointing at objects
10–14 months	• Babbling (not reduplicated), e.g., [badida]
	• Production of stop consonants, nasals, and [h]
12 months	• Gesture + sound combinations with consistent communicative functions
	• First words
	• One-word turns in conversational exchanges with caregiver
12–16 months	• Repertoire of several speech acts, e.g., labels, requests, answers
12–18 months	• Gesture + word combinations
18 months	• Two-word combinations
	• 50-word vocabulary
1½–2½ years	• First grammatical morphemes
2–3 years	• Early grammatical constructions
20–27 months	• Relative clauses
2–2½ years	• Conversational skills improve, e.g., frequency of responses increases
2–3 years	• Narratives of personal experience co-constructed with caregiver
2–3½ years	• Overregularization of irregular forms, e.g., English past tense, e.g., *goed*
3½–4½ years	• Mastery of difficult phonemes, e.g., [ʤ], [ʧ], [θ]

Sources: Brown 1973; Tomasello and Brooks 1999; Kelly 2003; Diessel 2004; Clark 2009; Hoff 2009; Owens 2012.

14.5 Conversational Discourse

Face-to-face conversation is the earliest and most common type of discourse and the primary basis for first language acquisition. Despite cross-cultural differences in circumstances, all children raised in normal social environments are surrounded by speech.

14.5.1 Early Conversations: Scaffolding Dialogue

Babies are social creatures, eager to interact with their caregivers, but they cannot initially carry on a conversation without adult assistance. In the following famous example, the

mother treats her preverbal infant as a conversational partner, creating a turn-taking structure by her responses to the baby's smile, burp, and vocalization.

(1) Mother and three-month-old daughter (Snow 1977b: 12)

Ann:	(smiles)
Mother:	*Oh what a nice little smile! Yes, isn't that nice? There. There's a nice little smile.*
Ann:	(burps)
Mother:	*What a nice little wind as well! Yes, that's better, isn't it? Yes. Yes.*
Ann:	(vocalizes)
Mother:	*Yes! There's a nice noise.*

The adult's words may be incomprehensible to the infant, but such "proto-conversations" communicate emotion, practice the joint attention that is essential for actual conversation, and establish the role of language in the caregiver–child relationship.

As young children begin to understand and use language, the talk addressed to them focuses mainly on the here-and-now: the ongoing activities and situations, and the people and objects present in the context. This type of content engages the child's attention and is readily comprehensible; it also helps the child to see the connection between linguistic forms and their meanings/functions. Once children have begun to talk, caregivers can help them participate in conversation in many ways: using attention-getting forms (e.g., *look!*), introducing here-and-now topics, pausing between turns, asking questions that provide a "slot" in the dialogue for the child's response, and even answering their own questions if the child fails to respond. ***This kind of behavior is known as* scaffolding*, since it provides a temporary structure for children to rely on until they are capable of taking a more active role in the conversation.*** The child in the next example is able to introduce a topic on her own, and to sustain it over several turns with some scaffolding from her mother (see Sidebar 14.2 for information about relevant acquisition notation).

(2) Nina (1;11) picks up her doll[a]

Nina:	Big dolly.
Mother:	Is this a big dolly?
Nina:	Here.
Mother:	Nice dolly.
Nina:	Dress up dolly. Dress up dolly.
Mother:	Shall we dress up dolly?
Nina:	Yeah.
Mother:	Okay. What shall we dress up dolly with?
Nina:	Clothes. Clothes.
Mother:	Shall we dress up dolly with a dress?
Nina:	Yeah.

[a]Suppes (1974): http://childes.talkbank.org/browser/index.php?url=Eng-NA/Suppes/011116.cha

While examples like (1) and (2) may seem commonplace, chatting with a preverbal infant or toddler is not regarded as appropriate behavior for an adult in all societies. Among the

SIDEBAR 14.2
In language acquisition research, a child's age is represented as Years; Months. For example, the notation 1;11 in Example (2) means that the child was one year, eleven months old at the time of that recording. Additionally, in this chapter, the URL for examples taken from the *CHILDES* database will be provided with the examples, as in (2).

Kaluli of New Guinea, for example, mothers are more likely to speak *for* rather than *to* young children, holding infants so that they face the addressee and speaking for them in a special high-pitched, nasal voice. Using the form *ɛlɛma* 'say like this,' Kaluli mothers explicitly model assertive speech for young children; for example, one mother told her two-year-old to say, "Is this yours?" to his five-year-old sister, who wanted some of the fruit he was eating (Schieffelin 1990: 71, 88).

In cultures where parents do carry on conversations with very young children, the adult scaffolding seen in Example (2) recedes as the child begins to take a more active role. As children develop cognitively, the content of talk moves away from the here-and-now and toward encompassing past, future, and even imaginary events. With experience, children learn strategies for gaining the floor, introducing new topics, and collaborating on topics in progress (Ochs et al. 1979; Hoff-Ginsberg 1987). The turn-taking form of conversation can be difficult, especially in multi-party situations; the child must pay close attention to what others are saying in order to formulate a relevant turn, and then produce it quickly – before it is forgotten or someone else begins to talk – but without interrupting (Ervin-Tripp 1979). Both the content and the form of conversation challenge young children for many years.

14.5.2 Child-Directed Speech: Talking to Young Children

In certain societies, adults use a special way of speaking when they address a very young child. This register, called **Child-Directed Speech (CDS)**, has characteristics that attract children's attention, help them understand what is being said, and express positive emotion. CDS also marks the special position of the very young child in society. Textbox 14.3 presents several characteristics of CDS that have been found in English.

Certain features of English CDS seem exquisitely tailored to language learning: prosody that highlights the boundaries of constituents such as noun phrases, simplified grammar, repetitions and paraphrases that offer multiple chances to process the same content, and expansions that model the adult version of what the child is trying to say.

STOP AND REFLECT 14.1 **ATTITUDES TOWARD CHILD-DIRECTED SPEECH**
In societies that have a CDS register, there may be adults, including parents, who do not believe in using it. If you have come across people with this attitude, what reasons do they give for avoiding CDS?

Cross-linguistic research can shed light on which of these characteristics occur in other languages; high pitch, short utterances, long pauses, and (in mothers) exaggerated prosodic contours have been found in French, Italian, German, and Japanese CDS (Fernald et al. 1989). But not all societies have a special style for speaking to very young children, and even among speakers of the same language, the use and properties of CDS may vary, as well as attitudes toward using CDS (see Stop and Reflect 14.1). While experiencing

language use in social interaction is necessary for language acquisition, exposure to CDS per se evidently is not.

TEXTBOX 14.3 **CHARACTERISTICS OF CHILD-DIRECTED SPEECH IN ENGLISH**

Prosody:
- high pitch
- exaggerated intonation contours, swooping between high and low pitch
- slower rate of speech, with pauses at the end of sentences

Lexicon:
- special vocabulary featuring reduplicated words and phrases (e.g., *tum-tum* 'tummy,' *din-din* 'dinner,' *go bye-bye* 'go outdoors')

Grammar:
- short utterances with simple clauses
- proper nouns for the pronouns *I* and *you* (e.g., *Mommy* and child's name)
- *we* and *let's* for actions performed by the child

Discourse:
- vocatives, endearments, and attention-getters
- imperatives and questions
- repetitions and paraphrases
- **expansions:** utterances that provide a fuller, grammatically correct version of the child's prior utterance

Sources: Broen 1972, Phillips 1973, Cross 1977, Snow 1977a, 1986, Fernald et al. 1989.

14.5.3 Early Pragmatics: Communicating with Gestures and Words

Before children begin to talk, they rely on gestures and vocalizations to communicate. By about 9–12 months of age, a child will have a small repertoire of communicative behaviors that engage others in interaction and achieve particular goals, for example, to obtain an object that the child wants. Cognitively, the intentional use of gestures and/or sounds to communicate reflects some understanding of cause and effect, and is crucial for the development of **pragmatics:** the use of language in context for communicative functions. Young children's early gestures and vocalizations have important social motivations beyond getting what they want; they will provide useful information (e.g., pointing to an object the addressee is looking for) and will try to convey what they are attending to and feeling simply in order to share their experience with their caregivers (Tomasello 2008: 123). If, for example, a child points at an object and the adult merely looks at it without expressing any interest, the child will continue gesturing to get a more satisfying response (Liszkowski 2006). Textbox 14.4 presents examples from American children of three common gestures found in preverbal communication.

SIDEBAR 14.3
See Chapter 8 for a more detailed discussion of pragmatics.

Such gestures are also often accompanied by sounds; by twelve months a child may have a small set of consistent vocalization + gesture combinations used for particular functions, for example, making a particular sound while reaching for a desired object.

Preverbal gestures and vocalizing set the stage for further pragmatic development. By about 14–20 months, most children can produce a number of **speech acts:** actions that the speaker intends to perform with the utterance, such as a greeting or a request. Textbox 14.5 presents some early speech acts of American children, which may be produced with gestures.

TEXTBOX 14.4 **THREE COMMON GESTURES IN PREVERBAL COMMUNICATION**

Gesture	Description	Examples
POINT	Movement of index finger or outstretched hand toward an object while gazing at object or addressee	Caitlin (0;11) points to a child on the other side of the window while gazing at the caregiver.
SHOW	Holding out (and sometimes then throwing down) an object while looking at the addressee	Brailey (0;12) holds up a toy telephone while gazing at the caregiver.
GIMME	Holding out an open palm as if to receive an object while gazing at object or addressee	Lette (0;12) reaches toward a toy that another child is holding while gazing at that child.

(Adapted from Kelly 2003, 2006)

TEXTBOX 14.5 **SOME COMMON ONE-WORD SPEECH ACTS**

Speech act	Word (+ Gesture)	Context
Verbal move in game	*moo*	With a series of *What's the X say?* queries, mother asks Gerry (1;6) for animal sounds.[a]
Notice event	*uh-oh*	Allison (1;4) was sitting on a chair with a doll, when the doll fell to the floor.[b]
Statement	*dirty*	Allison (1;4) hands empty cookie bag to her mother.[b]
Answer question	*cow*	Looking at toy animals on floor, mother asks Allison (1;4), *Oh, what's that?*[b]
Direct attention	*box* [bos][d] + SHOW	Fiona (1;1) holds up a box toward the caregiver.[c]
Request	*shoe* [gu] + SHOW	Chera (1;5) holds out her shoe to the caregiver, who is putting shoes on another child.[c]

(Adapted from Snow et al. 1996; examples from *CHILDES*; Bloom 1973; Kelly 2003)
[a] http://childes.talkbank.org/browser/index.php?url=Eng-NA/Cornell/haas1917.cha
[b] http://childes.talkbank.org/browser/index.php?url=Eng-NA/Bloom73/010421.cha
[c] Examples from Kelly 2003.
[d] Material in square brackets is in the International Phonetic Alphabet.

Young children's repertoire of speech acts gives an interesting glimpse into their social world, as well as their caregivers' ideology. From the speech acts in Textbox 14.5, for example, we can see that American children quickly learn to act as their parents' conversational partners, answering questions, making comments, and participating in labeling routines (Ochs and Schieffelin 1984). In daycare centers, where the competition is more intense, children must work harder to attract the attention of adults and to get them to perform desired actions.

14.6 Phonological Development

Once children begin to acquire words, their communicative problems are by no means over, since they have difficulty pronouncing, and sometimes also perceiving, the words correctly. Certain **phonological error patterns** – consistent differences between adult and child pronunciations – are quite common. Textbox 14.6 shows some of the frequent

patterns of errors that children make when producing consonants. These patterns create simple sequences of a consonant and vowel (i.e., CV syllables), substitute consonants that are easier to pronounce for more difficult ones, and assimilate sounds to their phonetic environments.

During the babbling period, babies usually produce reduplicated CV syllables, such as [baba]. CV syllables are found in all languages and are regarded as the most natural, basic syllable type. Children's preference for CV syllable structure continues when they begin to produce words. Children create CV syllables by failing to pronounce the final consonant of CVC syllables, e.g., saying [no] for *nose* [noz], and by producing a single consonant instead of a consonant cluster, e.g., [pe] for *play* [ple].

TEXTBOX 14.6 **SOME COMMON PHONOLOGICAL ERROR PATTERNS WITH CONSONANTS**

Phonological error pattern	Word	Adult pronunciation	Child's pronunciation
Syllable structure patterns			
Final consonant deletion	*doll*	[da**l**]	[da]
Consonant cluster reduction	*play*	[p**l**e]	[pe]
Sound substitution patterns			
Stopping	*see*	[**s**i]	[**d**i]
Fronting	*call*	[**k**al]	[**t**a]
Gliding	*ready*	[ɹɛdi]	[**w**ɛdi]
Voicing:			
Initial voicing	*pie*	[**p**aj]	[**b**a]
Final devoicing	*egg*	[ɛ**g**]	[ɛ**k**]
Assimilation patterns			
Consonant harmony	*duck*	[**d**ʌk]	[**g**ʌk]

(Adapted from Dodd et al. 2006; Ingram 1986)

Young children also frequently use **sound substitutions**, producing sounds that are easier to articulate instead of more challenging ones. Stops, which are produced with a complete, quick closure and release at the place of articulation, are apparently easier for most children to produce than fricatives or affricates, which involve holding an incomplete closure while the air passes through. Accordingly, a common pattern is **stopping:** using a stop instead of a fricative or other type of consonant, e.g., *see* [si] → [di]. Some children use **fronting:** producing consonants farther to the front of the mouth, for example, pronouncing *car* [kaɹ] as [da] by replacing velar [k] with alveolar [d]. Many children have difficulty with the liquids [l] and especially [ɹ], and rely on **gliding:** substituting the glides [w] or [j] for liquids, so that, for example, *lap* [læp] becomes [jæp]. ***Children also tend to use voiceless consonants instead of voiced ones at the ends of words, and voiced consonants rather than voiceless ones at the beginnings of words;*** when both **voicing error patterns** are used in the same word, the outcome may confound the listener, as when *pig* [pɪg] becomes [bɪk]. Phonological error patterns can also cause confusion by creating a proliferation of **homonyms:** words with different meanings that have the same

pronunciation. Thus, the word [ti] in a child's vocabulary could arise from *see* [si] by stopping of the initial consonant, or from *teeth* [tiθ] by deletion of the final consonant, as well as from *T* and *tea*.

Since young children have difficulty moving their articulators rapidly from one place of articulation to another, their errors often involve assimilation: changes in the pronunciation of a sound that are influenced by the phonetic properties of nearby sounds. An interesting type of long-distance assimilation found in children's speech is **consonant harmony:** one consonant is produced with the same place or manner of articulation as a nearby consonant. For example, a child might say [gʌk] for *duck* [dʌk], producing velar [k] instead of alveolar [d] in anticipation of the final [k].

SIDEBAR 14.4
Assimilation and other phonological processes are summarized in Textbox 3.6. Local and non-local phonological processes, including harmony patterns, are discussed in Textbox 3.3.

As children's perception improves and they gain motor control over their vocal tracts, their errors gradually disappear, e.g., voicing errors by 3;0 years of age and gliding by 6;5 (Dodd et al. 2006). In the meantime, since ***production generally lags behind comprehension***, children may be aware that they are mispronouncing words. In one famous case, a phonologist tried repeatedly to correct his son Amahl, who pronounced *jump* [jʌmp] as *dup* [dʌp], stopping the initial affricate [dʒ] to [d] and reducing the consonant cluster [mp] to [p]; Amahl finally concluded, "Only Daddy can say *dup*." (Smith 1973). In such cases the child can apparently perceive the adult sound correctly but still lacks the motor control to produce it accurately.

Although the phonological error patterns described in this section have been found in children acquiring several different languages (Ingram 1986; Hua and Dodd 2006), there are many individual differences in the acquisition of phonology. Children's individuality is evident in their preference for particular sounds and in their choice of first words; they tend to use words that have the sounds they already learned, and to avoid words with sounds they have yet to master (Schwartz 1988).

14.7 Lexical Semantics: First Words and Their Meanings

First words offer an interesting window into the cognitive and social world of the young child. ***Words that are used frequently in the child's social interactions are likely to be acquired early***, resulting in a similar list of first words for members of the same social group. Textbox 14.7 gives typical examples found among the first fifty words of English-speaking children. These words evoke an image of the family members, food, clothing, and pets found in the homes of the (usually middle-class) children who have been studied, as well as their typical activities, such as playing with toys and reading picture books with their caregivers.

In assessing lexical development, it is important to keep in mind that for the young child, a word does not necessarily coincide with what counts as a single word for an adult; it may consist of unanalyzed or misanalyzed multi-word chunks, e.g., [wəda] *What's that?* and [aba] 'bottle' (from *a bottle*).

TEXTBOX 14.7 **FIRST WORDS OF ENGLISH-SPEAKING CHILDREN**

Category	Typical Examples
People	*mommy, daddy, baby, grandma, grandpa*
Body parts	*eye, nose, ear*
Clothes	*shoe, sock, hat*
Animals	*dog/doggie, cat/kitty, bird, fish*
Food/drink	*juice, milk, cookie, cracker, apple, cheese, banana*
Eating/drinking utensils	*bottle, cup*
Toys	*ball, block, doll*
Vehicles	*car, truck, boat*
Household items	*keys, book, clock, light, blanket*
Actions/movements	*open, up, down, off, out*
Social routines	*bye(bye), hi, peekaboo, thank you*
Sounds	*woof, moo, baa baa, vroom*
States/situations/sensations	*all gone, uh-oh, ouch*

(Adapted from Nelson 1973; Clark 2009)

First words and expectations about first words can differ a great deal from one culture to another. American parents look forward to hearing *mama* or *dada*, while in Western Samoa parents expect young children, who are seen as willful and cheeky, to start out with the curse *tae* 'shit!' (Ochs 1988: 159). Whether adults even recognize their children's first words as such depends on culturally based **ideologies of language acquisition**; the Kaluli in New Guinea do not regard children as having begun to speak until they say *nə* 'mother' and *bo* 'breast,' even if they are using other words (Schieffelin 1990: 74). There are also cross-cultural differences in the types of words that children know; for example, Korean mothers use a higher frequency of verbs in active play contexts compared with American mothers, and young Korean children tend to have more verbs in their vocabulary than children acquiring English (Choi and Gopnik 1995; Choi 2000).

A vocabulary list may reveal which words a child uses, but what do those words actually mean to the child? Young children with limited vocabularies can get more mileage out of their lexicon by extending a familiar word beyond its normal range, for example, by calling a horse *doggie*. In this type of error, called a **lexical overextension**, a word is used for a larger set of referents than is found in adult speech. The results can be amusing or even poetic, as when a child said *moon* while looking up at a half grapefruit (Bowerman 1978), but may also be distressing, as when *mommy* and *daddy* are overextended to other adults. The opposite error also occurs; **underextensions** apply a word to a smaller set of referents than appropriate, as in the case of the child who said *duck* only when hitting his toy duck off the bathtub, but not in other situations, such as looking at real ducks (Barrett 1986). ***Overextensions are often based on a particular perceptual feature that the overextended referents share with the original referent of a word;*** see Stop and Reflect 14.2. Overextensions can also be based on more than one feature of the original referent; for example, one child first used *kick* when

kicking a ball, but later also when she was about to throw something, when watching a moth fluttering on a table, and when pushing her stomach against a mirror (Bowerman 1978).

STOP AND REFLECT 14.2 **LEXICAL OVEREXTENSION**

Consider the words, first referents, and subsequent set of overextended referents presented in Textbox 14.8. What perceptual feature(s) form the basis for each of the overextensions? (See Sidebar 14.5 on the next page for answers.)

TEXTBOX 14.8 **LEXICAL OVEREXTENSIONS**

Child's word	First referent	Child's subsequent set of overextended referents in order of occurrence
baw	ball	> apples > grapes > eggs > squash > bell-clapper > anything round
fly	fly	> specks of dirt > dust > all small insects > child's own toes > crumbs of bread > a toad
koko	cockerel's crowing	> tunes played on the violin > tunes played on the piano > tunes on an accordion > tunes on a phonograph > all music > merry-go-round
wau-wau	dogs	> all animals > toy dog > soft home-slippers > picture of old man dressed in furs
candy	candy	> cherries > anything sweet

(Adapted from Clark 1973)

The phenomenon of overextension raises the following question: do children who overextend a word know the difference between the "real" (adult) referent and their own overextended uses? Research has shown that ***comprehension precedes production in lexical development***; at 1;4 years of age, for example, on average children can produce only about 6 words but can understand about 51–100 (Fenson et al. 1994: 66). Happily, then, children usually do know *daddy* from the man next door. Even in production, children overextend only about one-third of their first 75 words; as their vocabularies increase during their third year, overextensions are replaced by more appropriate adult words (Rescorla 1980).

14.8 Constructing a Grammar

The acquisition of grammar has generated the most research – as well as the most controversy – in the field of language acquisition. This is because linguists who espouse different theoretical frameworks have very different ideas about what grammar is and how sentences should be analyzed.

14.8.1 Early Word Combinations

For children acquiring English, the production of two-word combinations is usually regarded as the first step in the acquisition of grammar beyond one-word utterances. Recently, however, it was discovered that the appearance of two-word utterances is preceded – and perhaps facilitated – by changes in the child's word + gesture combinations.

SIDEBAR 14.5

Answers to Stop and Reflect 14.2: The perceptual basis for the overextension of *baw* is the shape; for *fly*, the size; for *koko*, the sound; for *wau-wau*, the texture; and for *candy*, the taste.

First, the word and gesture become temporally synchronized so that they are produced simultaneously; then the word and gesture are used to express distinct elements (Kelly 2003). For example, in the latter stage, instead of reaching toward a banana and saying *banana*, the child will reach toward the banana and say *want*. Two or three months later, the first two-word combinations appear (Kelly 2003; Iverson and Goldin-Meadow 2005). Thus, the acquisition of grammar may have developmental roots in the domain of gesture.

TEXTBOX 14.9 **SOME EARLY WORD COMBINATIONS IN ENGLISH**

Function/meaning	Form	Context
Label object	*this rabbit*	N and M are "reading" picture book
Direct attention	*look rabbit*	N and M are "reading" picture book
Disappearance/absence	*horsie gone*	N is looking on shelf for toy horse
Demand/desire	*more cookie*	N wants M to give her another cookie
Negate	*no fit*	N is trying to place a puzzle piece
Possession	*Nina doggy*	M had asked who owns toy dog
Locate object	*car leg*	N is putting a toy car on her leg
Describe action	*plant tree*	N is "planting" a tree in a toy village
Describe object	*red doggy*	N is talking about her toy dog

(Adapted from Slobin 1979; examples from *CHILDES*: Suppes 1974. N=Nina (1;11); M=Nina's mother)
http://childes.talkbank.org/browser/index.php?url=Eng-NA/Suppes/011116.cha
http://childes.talkbank.org/browser/index.php?url=Eng-NA/Suppes/011124.cha

Textbox 14.9 gives examples of typical two-word combinations, with brief characterizations of their functions/meanings and the contexts in which they occurred. Since word combinations with functions roughly equivalent to those in Textbox 14.9 are found in many languages, researchers have speculated that these meanings may reflect universals of young children's cognition (Slobin 1970). This may also be due to similarities across cultures in ways of interacting and talking with young children.

Two- and three-word utterances may seem simple, but their implications for the acquisition of grammar have been extremely controversial. In analyzing the development of grammar, the goal is to capture the child's unconscious grammatical knowledge (i.e., **mental representation** of grammar) at a given point in time. Since the child's knowledge is rapidly changing, ***it is challenging to come up with an analysis that neither underrepresents the child's knowledge*** (failing to attribute to the child knowledge that he or she actually has), ***nor overrepresents it*** (attributing adult-like knowledge to the child that he or she does not yet have). The question is, exactly what do children who combine two or three words "know" about grammar? For example, when Nina says *plant tree*, should we assume that her utterance has internal semantic or syntactic structure, or is she simply placing two words side by side? Textbox 14.10 illustrates some of the analyses that have been proposed.

TEXTBOX 14.10 **ANALYSES OF EARLY WORD COMBINATIONS**

Sample analysis	What the child is assumed to know:
1. Word + Word	The meaning of individual lexical items and the specific semantic relation between them (Braine 1976; Tomasello 1992; Lieven et al. 1997)
2. Agent + Action Object + Location, etc.	Case-like relations between general semantic categories, such as Agent, Action, Location, etc. (Slobin 1970; Schlesinger 1974)
3. S → NP + VP	Word classes (N, V), constituent structure (S, NP, VP), and grammatical relations (Subject, Direct Object) (Bloom 1970; Pinker 1984)
4. SUBJ VERB OBJ X acts on Y	Constructions: grammatical patterns (e.g., Subject Verb Object) and the meanings they convey (e.g., X acts on Y) (Tomasello and Brooks 1999; Goldberg and Casinhiser 2006; Tomasello 2006; Lieven 2009)

The first and most concrete analysis in Textbox 14.10, Word + Word, assumes that the child knows only the meaning of the individual words, and the meaning created when they are combined. According to this analysis, when Nina says *plant tree* as she "plants" a toy tree, she knows the meaning of *plant* and of *tree*, as well as the relationship between the action of planting and the tree. (Sometimes one of the words bears a semantically fixed relation to the other, in patterns such as *more* + Word or *no* + Word.) The second analysis in Textbox 14.10 assumes knowledge of broader two- and later three-term semantic relations, such as Agent + Action + Affected Object. The semantic relations may be viewed as arising from the child's cognition, for example, the understanding that agents can cause changes in objects by acting on them. In this analysis Nina's utterance *plant tree* shows that she has acquired the general semantic categories Action and Affected Object, and a rule for combining them in a particular order.

The third analysis in Textbox 14.10 assumes adult-like syntactic knowledge. This analysis reflects the **continuity hypothesis:** that children have the same linguistic categories and rules as adults from the outset (Pinker 1984: 7). According to this analysis, Nina has innate access to the syntactic category Subject NP, which she omits from this utterance since she can produce only two words at a time. She also has an innate VP category, consisting of a Verb and its Direct Object NP; her utterance *plant tree* relies on this innate knowledge, as well as acquisition of the English word order, in which the direct object follows the verb. For those who do not believe in innate grammatical knowledge, this analysis would be regarded as overrepresenting the child's knowledge; for those who espouse the continuity hypothesis, the first and second analyses in Textbox 14.10 would be seen as underrepresentation.

The final analysis in Textbox 14.10 assumes that grammatical constructions pair a particular syntactic pattern (e.g., Subject + Verb + Direct Object) with a particular meaning conveyed by the construction as a whole (e.g., X acts on Y). Researchers in this framework do not assume that the child has adult-like knowledge, so when Nina says *plant tree*, she is showing only partial mastery of the English transitive construction. Her actual degree of knowledge of this construction might be assessed by longitudinal analysis of her speech

or by experiments demonstrating whether she can generalize the transitive construction to new nouns and verbs. Recent functionalist approaches to two-word combinations have focused on the first (item-based) and last (construction-based) analyses in Textbox 14.10.

Research using experiments or detailed longitudinal analysis of dense samples of child speech has found that ***children move from specific to general in acquiring grammar***, proceeding from particular Word + Word combinations toward general, adult-like grammatical constructions. The process of **generalization** takes place gradually, with differences in the timing and content of the generalizations made by individual children. This account, in which children construct grammars gradually, learning forms and functions from the speech they hear, is favored by functional, discourse-based theorists. In contrast, formal theorists believe that children have innate knowledge of adult syntactic categories like Subject from the outset, as in analysis (3) in Textbox 14.10. From this perspective, acquiring a grammar is a matter of activating preexisting knowledge rather than building up knowledge based on experience with discourse.

14.8.2 Morphology: Adding Grammatical Bits and Pieces

The early word combinations of English-speaking children typically do not include any grammatical morphemes. Words with lexical content, such as nouns and verbs, appear in their base (dictionary) form. Grammatical morphemes – both bound morphemes, such as inflectional suffixes, and free morphemes, such as prepositions and articles – are simply missing. ***Children add grammatical morphemes to words and phrases gradually*** rather than suddenly using a morpheme in all contexts where it would be grammatical in adult speech. Children progress at different rates and show different patterns of development as grammatical morphemes are added; thus, one child may use *a* in the phrase *want a + X*, while another child uses *a* in *like a + X* (Pine and Lieven 1997). Research on the acquisition of English morphemes has shown that although there are individual differences, children tend to acquire their first fourteen grammatical morphemes in a fairly consistent order (Brown 1973; de Villiers and de Villiers 1973). Textbox 14.11 gives the average rank order of emergence in three children acquiring English.

TEXTBOX 14.11 **ORDER OF ACQUISITION OF 14 ENGLISH MORPHEMES**

Rank order	Morpheme	Example
1	present progressive *-ing*	*I mak<u>ing</u> 'nother one.*
2	*in*	*Put my pencil <u>in</u> there.*
3	*on*	*I sitting <u>on</u> my pencil.*
4	regular plural *-s*	*Please give me two cracker<u>s</u>.*
5	irregular past	*We <u>made</u> a picture.*
6	possessive *'s*	*I using Fraser<u>'s</u>.* (pencil)
7	uncontractible copula	*<u>Is</u> this mine?*
8	articles *(a, the)*	*I have <u>a</u> cookie.*
		Dat's Becky on <u>de</u> (=the) truck.
9	regular past *-ed*	*Did you turn<u>ed</u> it? (the page)*

TEXTBOX 14.11 (*cont.*)

Rank order	Morpheme	Example
10	regular third person singular *-s*	*Gloria sits on our couch.*
11	irregular third person singular (e.g., *does, has*)	*What / what does. (=That's what it does.)*
12	uncontractible auxiliary	*Are you having coffee?*
13	contractible copula	*Papa's a boy.*
14	contractible auxiliary	*I'm moving the stool.*

(Adapted from Brown 1973; examples from *CHILDES*: Eve 2;3)
http://childes.talkbank.org/browser/index.php?url=Eng-NA/Brown/Eve/020300a.cha
http://childes.talkbank.org/browser/index.php?url=Eng-NA/Brown/Eve/020300b.cha

An important question in analyzing morphological development is when a morpheme should be treated as having been acquired. Using English data, Roger Brown (1973: 258) defined acquisition of a grammatical morpheme as 90 percent use in **obligatory contexts** in which the morpheme is required for grammaticality over three consecutive monthly recording sessions. Different criteria may be required with different recording schedules, or if adult use of a morpheme is variable.

Why are certain morphemes acquired earlier than others? ***The form, function, and frequency of a morpheme are all important factors in explaining its acquisition order.*** First of all, the phonetic form and position of a morpheme affect its perceptual salience. Morphemes with more phonetic substance, especially vowels, such as *-ing, on*, or *in*, are easier to perceive than morphemes consisting of a single consonant, such as plural *-s*. The articles *the* and *a*, with their reduced vowels and lack of stress, are also hard to hear. Utterance-final and utterance-initial positions are more salient perceptually than utterance-medial ("sandwich") position. Possessive *'s* tends to be acquired first at the ends of sentences, e.g., *I using Fraser's*, before appearing between the possessor and possessed, e.g., *Gloria_ ashtray*. Similarly, the uncontractible copula (*Is he nice?*) and auxiliary (*Are they singing?*) are usually acquired before their contractible counterparts (*He's nice* and *They're singing)*, which have less phonetic substance and are sandwiched between the subject and main verb.

Morphemes with simple, semantically transparent meanings tend to be acquired early. The meanings of *in* and *on* are easy to grasp compared to *the* and *a* – both for children and for linguists! Morphemes that are used with high frequency on many different word stems in adult speech, such as plural *-s*, are likely to appear early, since their semantic effect is consistent across a large portion of the lexicon. On the other hand, semantically complex morphemes encoding multiple distinctions tend to be acquired late, e.g., third singular *-s*, which encodes person, number, and tense. Finally, morphemes like English past tense, which convey the same meaning through multiple forms (e.g., the regular suffix *-ed*, as well as irregular forms in patterns like *ring–rang, feel–felt*, and *hit–hit*), are acquired late and with many errors. In such cases, children may resort to **overregularization:** use of the regular form of a morpheme in cases that require an irregular form. Overregularizations such as *goed* are found well into preschool and beyond, providing support for the notion that children prefer 'one form for one function' in their acquisition of grammar (Slobin 1986).

14.8.3 Simple Clauses: Given versus New Information

Children's early word combinations with verbs generally consist of a simple **clause**: a verb plus its associated arguments – one argument for intransitive verbs, e.g., *Mommy go*, and two for transitive verbs like *hit*, e.g., *She hit the ball*. In these early clauses, the subject is often missing. This happens not only in languages like Spanish and Korean, which allow **ellipsis** (non-mention) of an argument in adult speech, but also in languages like English, which require overt subjects in most clauses. For example, Nina's utterance *plant tree* as she "plants" a toy tree (Textbox 14.9) omits the subject where doing so is ungrammatical in adult speech.

SIDEBAR 14.6
See Section 6.3.1 to refresh your memory about arguments and transitivity.

SIDEBAR 14.7
For other examples of languages in which core arguments can be omitted in speech, depending on the discourse context (and the identifiability of the referent), see the Language Profiles for Goemai (LP2), Bardi (LP8), and Lowland Chontal (LP9).

SIDEBAR 14.8
See Section 9.8 for additional discussion of given and new information.

Why are young children so likely to omit subjects? One reason is that subjects often convey **given information**: information that is activated in the listener's mind because it has just been mentioned or is obvious in context, e.g., Nina, as she describes her own actions. Since given information is already activated for the listener, it is usually expressed with pronouns in languages like English, or simply left unmentioned in languages like Korean. On the other hand, the listener needs an explicit lexical introduction of **new information,** that is, information that has not yet been mentioned in the conversation or that is not obvious from the context. ***Speakers' different treatment of given versus new information offers a clear case in which linguistic form is sensitive to its discourse context.***

Furthermore, the grammatical organization of the clause is also sensitive to the distinction between given versus new information. In transitive clauses, the subject almost always conveys given information; in contrast, new information usually appears as the direct object of a transitive verb or as the subject of an intransitive verb (Du Bois 1987). Textbox 14.12 describes these patterns, with examples from Nina's speech.

The pattern of presenting given information as the subject of transitive verbs and new information as the subject of intransitive verbs or the object of transitive verbs has proved to be highly robust across languages and is acquired very early. Figure 14.1 shows the percentage of transitive subjects, intransitive subjects, and direct objects that convey new information in the speech of two Korean children (H and W), aged 1;8–2;10, and their mothers.

TEXTBOX 14.12 **GIVEN VERSUS NEW INFORMATION**

The linguistic forms used for given versus new information reflect their cognitive functions. **New information** is introduced with a lexical noun phrase because explicit information is needed to activate the new referent in the listener's mind (see Section 9.8). For example, playing with her doll house figures, Nina (2;4) put one in a toy barrel and said, *The man sits in the barrel* (rather than *He*).[a] Moments later, announcing her intention to play with a new toy, she said, *I will find a egg*. If she had said *it* instead of *a egg*,

TEXTBOX 14.12 (*cont.*)

her mother, who had just suggested that she play with a barrel, would not have been able to decipher the intended referent. These sentences illustrate the pattern of new information being introduced lexically, either as the object of a transitive verb or the subject of an intransitive verb.

In contrast, **given information** is typically mentioned with a pronoun. After Nina and her mother had introduced Nina's toy Easter bunny into the conversation as *an Easter rabbit*, her mother asked, *What is he pushing?*, and Nina followed up with, *He have a egg?* (The bunny was pushing eggs in a wheelbarrow.) Both sentences use a pronoun to refer to the toy bunny, which is given information, having just been mentioned. And both sentences display the common pattern in which given information appears as the subject of a transitive verb, *push* in the mother's sentence, and *have* in Nina's sentence.

[a] Suppes (1974): http://childes.talkbank.org/browser/index.php?url=Eng-NA/Suppes/020412.cha

As Figure 14.1 shows, ***although they are very young, the children are already organizing new information in their clauses very much as their mothers do***. As expected, the subjects of transitive verbs are usually given; only 2–4 percent convey new information. In contrast, the subjects of intransitive verbs are much more likely to be new, while direct objects have the highest percentage of new referents. As a result, the subjects of transitive verbs are usually left unexpressed, while direct objects and subjects of intransitive verbs are often expressed with lexical nouns. Example (3) illustrates this pattern; the subject (Wenceng) is given information and is not mentioned explicitly, while the direct object (*congi* 'paper') is new and is expressed with a full noun phrase (personal data).

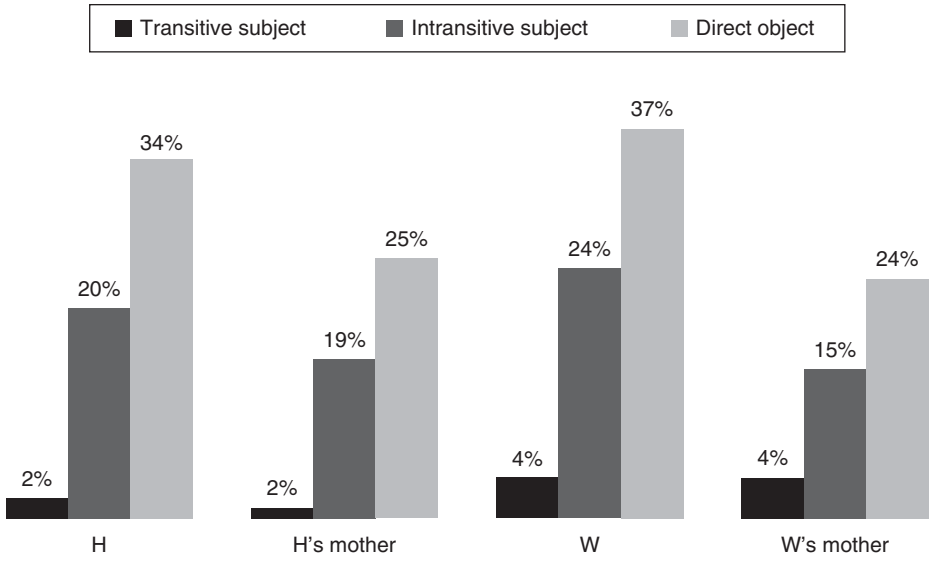


Figure 14.1 Percentage of transitive subjects, intransitive subjects, and direct objects that convey new information in Korean clauses

(3) Her mother has been serving coffee and cookies when Wenceng (1;11) says:

emma	***congi***	*kaci-ko*	*o-kkey*
mommy	paper	bring-and	come-FUT

'Mommy, (I)'ll go get paper.'

As the patterns in Figure 14.1 demonstrate, grammar functions to convey not only semantic information (who did what to whom) but also pragmatic information (what is new and what is given in the discourse). These findings provide powerful support for one of the fundamental tenets of a functional, discourse-based approach to grammar, namely, that grammatical form is influenced by discourse function.

14.8.4 Complex Sentences: Relative Clauses

At about two years of age, children begin producing syntactic structures that are more complex than a single clause, such as sentences with conjoined clauses, object complements, and relative clauses. Relative clauses, like adjectives, are dependent elements that modify the head noun of a noun phrase (NP). Longitudinal research on English (Diessel and Tomasello 2000; Diessel 2004) and Korean (Kim 1987) has found that the earliest and most frequent relative clauses for at least some children occur in copula constructions that have the form illustrated in (4) (relative clauses are underlined). Note that in Korean, relative clauses precede the head noun, and the copula, which attaches to the head noun, comes at the end of the sentence. In both sentences, the relative clause is underlined.

SIDEBAR 14.9
Relative clauses were introduced in Section 6.5; reviewing that information may facilitate understanding of this section.

TEXTBOX 14.13 **COPULA CONSTRUCTIONS REVIEWED**

A copula is a special type of verb that denotes an identity relation between its subject, called the **copula subject**, and the **copula complement**, which cross-linguistically can be either a noun phrase or an adjective. In the English example in (4) the copula *is* relates the first noun phrase, *this* (the copula subject, labeled CS), with the second noun phrase, *the sugar that goes in there*, the copula complement (CC). (See also Section 6.2.3.)

(4) English and Korean copula constructions with relative clauses compared

a. English: Setting up a tea party with her mother, Nina (3;0) is putting Play-Doh in a toy sugar bowl (Suppes 1974)[a]

[*This*]$_{CS}$ *is* [*the sugar* <u>*that goes in there*</u>]$_{CC}$

[a] http://childes.talkbank.org/browser/index.php?Furl=Eng-NA/Suppes/030003.cha

b. Korean: Wenceng (1;11) is looking at a picture of a vacuum cleaner with her mother (Kim 1987: 125)

[*ike*]$_{CS}$	[<u>*pupung-hanun*</u>	*ke*]$_{CC}$	*-ya*.
PROX.DEM	pupung-go.IPFV	thing	-COP.IE

' … this is the thing that goes "pupung."'

The findings illustrated in (4) raise a question: Why do both English- and Korean-speaking children produce relative clauses in copula constructions so early? The Korean data are especially interesting, since in Korean, the child must first produce the subject of the copula clause, and then the relative clause, before producing the head noun and copula. This is regarded as cognitively challenging for young children, since they must hold the subject of the matrix clause in **working memory** while producing the embedded clause, before they can complete the rest of the matrix clause.

From a functionalist perspective, what is striking about the earliest relative clauses is that they serve to direct the listener's attention to a particular referent with the initial pronoun, often a deictic pronoun like *this* to indicate a referent that is physically close to the speaker and hearer, which the relative clause then describes. As we have seen, there is a long developmental history for this function: at first, pointing gestures that direct adult attention to a present object during the preverbal stage, followed by POINT + label utterances at the one-word stage, and then two-word utterances such as *this rabbit* or *look rabbit*, which focus adult attention with the first word and then add the label for the indicated referent. The sentences in (4) take this line of development one step further, providing more information about the focused referent in the relative clause. ***There is a clear* functional continuity *here, with different forms – from preverbal gesture to relative clauses – being used for the same communicative function of directing attention to a referent.***

14.9 Narrative Discourse: Telling Stories of Personal Experience

From their earliest vocalizations to complex sentences, ***children's goal when acquiring language is not to have a grammar but to participate in everyday discourse and social interaction.*** As we have seen, the earliest type of discourse for young children is face-to-face conversation centered on here-and-now activities, people, and objects. Narrative discourse, on the other hand, requires talking about the "there and then" (Sachs 1983). From a cognitive perspective, the child must be able to move beyond the present moment to talk about past events and absent referents. Children can talk about the past before mastering the past tense or temporal adverbs, but their early narratives of personal experience may be all but incomprehensible to the listener who is not already familiar with the events. The narrative in (5), told by a Japanese boy of only 1;11 years old, is a case in point; his mother immediately recognized the story of the neighbor's dog, which had been hit by a car, but the researcher was completely baffled (personal data).

(5) Yotchan (1;11) had been asking for another tangerine, when he suddenly said:

wan wan,	'Doggie,
tai-tai yoo tte,	(went) "ow-ow,"
paan tte,	(it went) "bang,"
tai-tai.	ow-ow.'

Since the story in (5) had probably been told many times, the child was able to introduce the main character and tell a minimal version of the events on his own. Often, however, children under three years of age need adult help to tell stories, and the resulting discourse

has the turn-taking form of conversation. Example (6) illustrates this kind of **narrative co-construction**, with the mother asking questions that prompt the child's memory of the events, creating a familiar question–answer format to guide the narration and providing feedback through repetitions, confirmations, and agreements.

(6) Tara (2;6) and her mother co-construct a story (Miller and Sperry 1988: 300–301)

1	Mother:	*Tara, Tara.*
2	Tara:	*What?*
3	Mother:	*Did we go down to see the fishes?*
4	Tara:	(nods and tucks thumbs under armpits, elbows askew, gazes intently at her mother)
5	Mother:	*What'd they look like?*
6	Tara:	*Fish.* (slowly moves arms, fidgeting with blouse)
7	Mother:	*What did them fishes* –
8	Tara:	*I see … big fish.* (gazes at mother, excited tone) (extends index finger)
9	Mother:	(laughs)
10	Tara:	(raises right arm above head)
11	Mother:	*How big was it?*
12	Tara:	(turns in circle) *I hold it.* (raises right arm, palms open toward mother)
13	Mother:	*Was you scared?*
14	Tara:	*No.* (shakes head negatively) *I holding it.* (arms out at side, palms up)
15	Mother:	*We seen lobsters. Remember the lobsters? They go* (imitates sounds while making biting, snapping motions with hands) *like that. And that little boy said, "Ow."* (pauses) *Cause it bites his finger.*
16	Tara:	(nods, then shakes head negatively)
17	Mother:	*Did it bite your finger?*
18	Tara:	*No. Look, it didn't bite my finger.* (shows finger to mother)
19	Mother:	*No, it didn't.*

The mother's contributions in (6) indirectly tell the child what counts as a story worth telling, and what kinds of information a story should include: what happened and how the child felt about it. Her questions support two basic functions of narratives of personal experience: the **referential function**, i.e., recounting who did what to whom in the sequence of events that comprise the plot, and the **evaluative function**, i.e., conveying the significance or point of the story (what makes it worth telling) (Daiute and Nelson 1997; Labov 1997).

Narrators use a variety of verbal and nonverbal **evaluative devices** to convey the point of the story, some of which are given in Textbox 14.14.

In (6), the mother co-constructs the evaluative function by prompting Tara to elaborate on the adjective *big*, by explicitly asking her whether she was *scared*, and by quoting the little boy who said *ouch* at the dramatic event of a lobster pinching his finger. The resulting narrative is more than a tale of holding a fish; it is a co-constructed portrayal of

Tara as adventurous and unafraid, traits that the working-class mothers in this community value highly and seek to instill in their young daughters. Co-constructing narratives is one way in which ***caregivers use language to socialize young children to the ideologies of their social group and to identities shaped by those ideologies.*** In telling stories of personal experience, child narrators are constructing their own identity, a constantly evolving version of who they are, through interaction with others (Kyratzis 2000; Bamberg and Georgakopoulous 2008).

TEXTBOX 14.14 **EVALUATIVE DEVICES IN NARRATIVES OF PERSONAL EXPERIENCE**

a. Expressive phonology (e.g., *noooo!*)
b. Explicit comments (indicating why the events are reportable)
c. Quotation (of the words or thoughts of the narrator or story characters)
d. Dramatic action (such as exciting, reportable events)
e. Intensifiers (e.g., *really, very*)
f. Evaluative adjectives (e.g., *scary, wonderful*)
g. Repetitions (which highlight what the narrator finds significant)
h. Comparators (e.g., *only, even*; adjectives with *more/most* or *-er/-est*; these forms implicitly compare what did happen with what might have happened)

(Adapted from Labov 1972, 1997)

14.10 Theories of Language Acquisition

Every linguistic theory must offer some explanation for how children acquire their first language. For decades, the primary focus of theoreticians has been the acquisition of grammar; ***the longest-standing controversy centers on the relative importance of nature versus nurture***. Textbox 14.15 presents four essential components of any acquisition theory. With respect to nature, the question is: What innate endowments does every child bring to the task of language acquisition? The nurture component of acquisition theory addresses the properties of the environment that are assumed to be relevant, for example, the language that the child is exposed to. Every theory must postulate specific mechanisms that are responsible for how grammatical knowledge is acquired. The final component – the theory's assumptions about adult grammar – has the greatest impact on acquisition theory, shaping how the balance between nature and nurture is conceptualized, and what kinds of acquisition mechanisms it makes sense to postulate. As long as scholars have different

TEXTBOX 14.15 **FOUR ESSENTIAL COMPONENTS OF ACQUISITION THEORY**

1. Nature: the child's innate capacities relevant to language acquisition
2. Nurture: the properties of the environment relevant to language acquisition
3. Acquisition mechanisms: the specific means by which the child comes to have and use linguistic knowledge
4. Adult grammar: theoretical assumptions made about the language that the child is in the process of acquiring

views of adult grammar, their theories of how children acquire grammar will necessarily differ as well.

Acquisition theories can be viewed as falling into two basic types: formal, nativist theories and functional, discourse-based theories. Nativist theories emphasize grammatical form and assume that **innate linguistic knowledge** is primarily responsible for children's acquisition of grammar. For proponents of nativist theories, the term "innate linguistic knowledge" refers to unconscious knowledge of grammatical categories, structures, and principles that are assumed to be part of the human genetic make-up, which is referred to as Universal Grammar (UG). In this type of theory, which originated with Chomsky (1965), grammar is conceptualized as an abstract formal system whose form is not affected by the functions it serves in discourse. Just as grammar is viewed as being independent from discourse, language itself is regarded as a unique, self-contained module in the human mind, separate from cognition. Although the child's linguistic environment is recognized as necessary for the acquisition of one language rather than another, in the balance between nature and nurture, ***innate linguistic knowledge is given much more explanatory weight than environmental factors in nativist theories.***

Chomsky argued that the speech children hear is too filled with grammatical errors and disfluencies to provide an adequate basis for learning grammar. Furthermore, he claimed, children must acquire universal linguistic structures and principles that are too abstract to be learned directly from speech, an argument referred to as the **poverty of the stimulus**. The abstractness of the structures is necessary if the goal is to devise only one set of structures and principles that can apply to all languages. As a solution to the supposed inadequacy of the speech children hear, ***Chomsky proposed that all children are born with such an abstract structure:*** an innate **Universal Grammar**, which incorporates the linguistic categories, principles, and constraints that provide the foundation for the grammars of all languages. Since proponents of UG assume that language cannot be learned directly from the surrounding speech, they reason that it must be acquired by unique mechanisms that are specific to language rather than by general learning mechanisms. The acquisition mechanisms that have been proposed include maturation of innate grammatical knowledge, and triggering by the speech that the child hears of particular innate options. Textbox 14.16 describes how a nativist approach might explain children's subjectless sentences in terms of triggering, as compared with a functional interpretation. In general, in a nativist theoretical framework, the role of learning is minimized, and children's social and cognitive development is viewed as irrelevant to their acquisition of grammar. The dominant metaphor is physical maturation: innate linguistic structure unfolding over time, like puberty, with minimal environmental influence.

In **functional discourse-based theory**, grammar is viewed as a system of communication that is shaped by human cognition and communication. Grammar is understood to include both structural forms and their discourse functions; these forms and functions are subject to the limitations of human cognition and are shaped by the communicative needs of language users. Grammar is not sharply differentiated from discourse; instead, grammatical structure is regarded as "frozen discourse," the crystallization over time of common patterns in talk. In this kind of theory, the differences between languages are

seen as different responses to one or more functional forces that shape linguistic structure over time, for example, the communicative motivation to express given information in a reduced way, either with pronouns as in English, or ellipsis (non-mention) as in Spanish. ***In this theoretical framework, the environment – nurture – is accorded a very important role in acquisition.***

TEXTBOX 14.16 **SUBJECTLESS SENTENCES: TWO APPROACHES**

Young children often produce sentences without a subject, e.g., Nina's utterance *plant tree*, said while planting a toy tree. While this would be grammatical in certain languages, such as Korean or Spanish, in others, like English, it is not. Both nativist and functional theorists have sought to explain these early subjectless sentences.

An influential nativist account (Hyams 1986), now modified (see Hyams 2011), assumes that there is an innate distinction between languages that allow subjectless sentences, like Japanese, and those that do not, like English. In this account, all children start out with this distinction set to the default option, which is allowing subjectless sentences; children acquiring Japanese or Spanish have the appropriate adult setting. Children acquiring a language like English must switch to the setting that requires subjects; this change is triggered when specific information is encountered in adult speech, e.g., semantically empty subjects, as in the sentence *It's raining*. While other potential triggers have also been proposed, the key point is that learning per se is *not* involved; the two available possibilities are innately specified, and the correct setting is triggered by adult speech, rather than learned from it.

In contrast, **functional discourse-based theories of first language acquisition** have looked to prosodic and discourse factors, as well as learning, to explain children's subjectless sentences. If they are sensitive to the distinction between given versus new information in discourse, children will not express subjects that convey given information that can be taken for granted in context; this is what both adults and children do in Korean (Clancy 2007). Prosodic factors, such as omitting unstressed pronouns in English, are also involved (Gerken 1991). Even in languages that permit subjectless sentences, their actual frequency in children's speech mirrors that in adult speech, indicating that language-specific learning is playing an important role (Kim 2000).

Decades of empirical research have shown that the speech addressed to young children is grammatical, simple, and fluent; the here-and-now content of Child-Directed Speech helps children to see the relation between grammatical forms and their functions. No preexisting innate linguistic knowledge or Universal Grammar is assumed. Instead, ***the innate endowment of the child is considered to be human cognition, which has evolved along with human culture, social interaction, and communication, and therefore includes the cognitive mechanisms necessary for learning and using language.*** Thus, both functionalist and nativist theories agree that language acquisition has innate foundations; however, the two approaches differ in their degree of emphasis on innate factors and in how specialized those factors are. Nativist approaches assume that our biological capacity for language is very specifically linguistic (UG), while functionalist theory assumes that non-linguistic (general) cognition is essential to language learning and use. Furthermore, in a functional, discourse-based approach, the endpoint of acquisition is viewed concretely – as knowledge of a particular grammar and how to use it; there is no need to posit that the grammar of any particular language incorporates structures and principles that are so abstract that they could apply to all languages, raising the possibility that children cannot learn them from the speech they hear.

With this view of what needs to be acquired and the kind of information that is available, it becomes plausible to postulate that ***children can learn grammar from everyday talk.*** Language acquisition is viewed as learning, and the acquisition mechanisms that have been proposed include learning processes that are not necessarily specific to grammar or even to language, but rather include general cognitive processes such as category formation, pattern recognition, analogy, and the formation of mental representations based on specific instances (exemplars) of language use. The dominant metaphor is construction: children as active learners, building up a grammar based on the speech they hear in order to communicate with the members of their social group.

CHAPTER SUMMARY

In this chapter, we have explored some of the key theoretical issues and empirical findings in the field of first language acquisition. Building on strong biological, cognitive, and social foundations, one-year-olds begin to communicate using gestures, gesture + word combinations, and one-word speech acts. In developing a lexicon, young children face the cognitive task of figuring out the appropriate extension of each word, in addition to the challenge of constructing a systematic phonology for perceiving and pronouncing words. The acquisition of grammar proceeds gradually, from simple word-based patterns to constructions that relate syntactic structures with clause-level meanings. As they acquire syntax, children are sensitive to the distribution of given and new information within clauses, forging the same powerful links between grammar and discourse found in adult speech. From a theoretical perspective, a functional, discourse-based approach emphasizes that from the earliest gestures and words to the production of complex syntactic structures and narratives, the acquisition process is shaped not by innate knowledge but by the social and cognitive demands of everyday talk.

TEXTBOX 14.17 GLOSSING CONVENTIONS USED IN THIS CHAPTER

Convention	Meaning	Convention	Meaning
COP	copula	IE	informal ending
DEM	demonstrative	IPFV	imperfective
FUT	future tense	PROX	proximal

SUGGESTIONS FOR FURTHER READING

Ambridge, **Ben**, and **Elena V. M. Lieven**. 2015. "A constructivist account of child language acquisition." In **MacWhinney**, **Brian** and **William O'Grady** (eds.), *The handbook of language emergence*. Oxford: John Wiley & Sons. 479–510.

This chapter reviews the evidence for children's gradual construction of grammar from early rote-learned phrases to increasingly abstract patterns.

Bates, **Elizabeth**, and **Michael Tomasello** (eds.). 2001. *Language development: The essential readings*. Malden, Mass.: Blackwell.

Selected readings that take a functional perspective on several areas of language acquisition.

Bowerman, **Melissa**, and **Stephen Levinson** (eds.). 2001. *Language acquisition and conceptual development*. New York: Cambridge University Press.

Selected readings on the relationship between language and cognition in development.

Clark, **Eve V.** 2016. *First language acquisition*, 3rd edn. New York: Cambridge University Press.

Of several useful textbooks on language acquisition, Clark's textbook is the closest in theoretical orientation to this chapter.

Hoff, **Erika** (ed.). 2012. *Research methods in child language: A practical guide*. Malden, Mass.: Blackwell.

The chapters in this volume survey a range of new technologies and methodologies in acquisition research, as well as the latest advances in well-established approaches to collecting naturalistic and experimental acquisition data.

Lieven, **Elena**. 2016. "Usage-based approaches to language development: Where do we go from here?" *Language and Cognition* **8**.3: 346–368.

A treatment of key issues and evidence for a learning-based, cognitively oriented view of language acquisition as a process of construction.

Slobin, **Dan I.** (ed.). 1985, 1992, 1997. *The crosslinguistic study of language acquisition*, 5 vols. Mahwah, NJ: Lawrence Erlbaum.

This multi-volume set provides a wealth of information about the acquisition of numerous languages, including theoretical discussion and empirical data.

EXERCISES

1. Phonological error patterns

One two-year-old learning English had many error patterns, resulting in a large number of homonyms in her speech. Below are six phonetic forms – [dak], [dʊk], [dɪk], [ˈdudu], [ˈdædæ], and [ˈmami] – that she used to produce a total of nineteen different words (personal data).

For each of the child's forms, specify which error pattern in Textbox 14.6 accounts for the child's use of that form instead of the correct adult form for the intended word; for example, what error pattern is responsible for the child's use of [dak] for *dog* [dag].

Bonus question: What error patterns are involved in the child's pronunciation of *napkin* [ˈnæpkɪn] as [ˈmækɪn]?

Child's form	Intended word	Adult form	Child's form	Intended word	Adult form
[dak]:	*dog*	[dag]	[ˈdudu]:	*noodles*	[ˈnudl̩z]
	tock	[tak]		*turtle*	[ˈtɹ̩dl̩]
	sock	[sak]		*tofu*	[ˈtofu]
	block	[blak]		*tissue*	[ˈtɪʃu]
	clock	[klak]	[ˈdædæ]:	*glasses*	[ˈglæsəz]
[dʊk]:	*book*	[bʊk]		*carrot*	[ˈkærət]
	look	[lʊk]	[ˈmami]:	*mommy*	[ˈmami]
[dɪk]:	*drink*	[dɹɪŋk]		*bunny*	[ˈbʌni]
	kick	[kɪk]		*Barney*	[ˈbaɹni]
	stick	[stɪk]			

2. Longitudinal phonological errors

The data for this problem come from four recordings of Hanson, a boy who turned 2;0 years old the day before the first recording. (Data from Sands 1986.)

Analyze the data according to the phonological processes discussed in Section 14.6 (and listed in Textbox 14.6).

For each phonological error pattern listed in Textbox 14.6 (e.g., "final consonant deletion," or "fronting"), list all of the forms in the data that exemplify that process.

Use the IPA transcriptions in the standard adult pronunciation list for your comparisons. Make your lists as complete as possible; try to analyze the data exhaustively (find all processes in all forms). *Note: Certain words may exhibit more than one process* and should be listed in multiple categories.

Note that two different pronunciations of the same word are represented in the sample as [word]~[word]. Each occurrence should be analyzed separately. Likewise, if a word appears in a phrase, analyze each word in the phrase separately.

Child's data

February 22, 1986

[ka]	'car'	[hɛkju]	'thank you'
[tʰɨtʰi]	'candy'	[no]	'nose'
[baba]	'bottle'	[muɸ]	'move'
[kʰikʰi]	'cookies'	[dætʰ]	'that'
[ga]	'gone'	[mæoɸ]	'mouth'
[gakʰ]	'dog' (for dog Rex)	[dis]~[dɪs]	'this'

March 8–9, 1986

[pikʰ]	'pig'	[gako]~[gago]	'motorcycle'
[ɸis]	'please'	[danno]	'McDonalds'
[daɪ]	'died'	[ɸɛn]	'plane'
[boˤ]	'boat'	[baw]	'ball'
[kʰikʰi]	'kitty'	[ho]	'hold'
[kaʲi]	'Corey'	[to]	'toast'
[naʲi]	'gnarley'	[bwokʰ]	'broke'

March 14, 1986

[fwakʰ]	'frog'	[ʧuʧuʧɛn]	'choo choo train'
[nana]	'night night'	[ti]	'teeth, toothbrush'
[an]	'on'	[ɛgo]~[ægo]	'let go'
[waˤɹ]	'water'	[akʌm]	'welcome'
[krʲi]	'kitty'	[agan]	'all gone'
[kak]	'clock'	[ɸwen]	'plane'
[fwaɪ]	'butterfly, bird'	[so]	'show' (TV)

April 5, 1986

[tʰutʰu]	'turtle'	[pakʌɪn]	'popcorn'
[bi]	'bee, bird'	[ni]	'knee'
[kʰakʰa]	'tractor'	[ɹaɪ dɛɹ]	'right there'
[ɸʌkʳ]~[ɸʌɸ]	'fork'	[gakʰ]	'duck'
[afʌn]	'elephant'	[kokʰ]	'coat'

Standard Adult Pronunciation

[bal]	'ball'	[lɛt]	'let'
[boʊt]	'boat'	[mɘkdanl̩dz]	'McDonalds'
[batl̩]	'bottle'	[moʊɾɹs̩aɪkl]	'motorcycle'
[bɹoʊk]	'broke'	[maʊθ]	'mouth'
[bʌtɹ̩flaɪ]	'butterfly'	[muv]	'move'
[kʰændi]	'candy'	[naɪt]	'night'
[kʰaɹ]	'car'	[noʊz]	'nose'
[ʧuʧu]	'choo choo'	[an]	'on'
[klak]	'clock'	[pʰɪg]	'pig'
[kʰoʊt]	'coat'	[plɛn]	'plane'

[kʰʊkiz]	'cookies'	[pliz]	'please'
[kʰɔɹi]	'Corey'	[pʰapkɔɹn]	'popcorn'
[daɪd]	'died'	[ɹaɪt]	'right'
[dag]	'dog'	[ʃoʊ]	'show'
[dʌk]	'duck'	[tʰiθ]	'teeth'
[ɛləfə̃nt]	'elephant'	[θæŋk]	'thank'
[fɔɹk]	'fork'	[ðɪs]	'this'
[fɹag]	'frog'	[tʰoʊst]	'toast'
[naɹli]	'gnarley'	[tʰɹæktɹ̩]	'tractor'
[gan]	'gone'	[tʰʌɹtl̩]	'turtle'
[hoʊld]	'hold'	[waɾɹ̩]	'water'
[kʰɪɾi]	'kitty'	[wɛlkəm]	'welcome'
[ni]	'knee'		

3. Lexical overextensions

Identify the perceptual basis for the following lexical overextensions. (Adapted from Clark 1973.)

Child's word	First referent	Overextension
mooi	moon	> cakes > round marks on windows > writing on windows > letter O
em	worm	> flies > ants > all insects > heads of grass
baby	self	> other babies > pictures of children > any child
sch	sound of train	> all moving machines
tee	stick	> cane > umbrella > ruler > wood board > all sticklike objects

4. Narrative evaluation

The story below was produced by a four-year-old boy in response to the researcher's question, "Have you ever been to the hospital?" (McCabe 1997: 161).

1 *Only Stevie, when I hit him with the rake one time.*
2 *And he hit me with that big broom.*
3 *And she* (the child's mother) *didn't take <u>me</u> to the hospital.*
4 *Only Steven.*
5 *He hit me with a sharp broom.*
6 *He hit me with that, that hard, hard, that hard,*
7 *ooooohhhhh, I got it in the head.*
8 *He hit me.*
9 *I hit him.*
10 *If he hits me with that once more, that broom once more,*
11 *I'm going to hit him with the rake once more.*

In your opinion, what is the point or significance of this story from the child's point of view? Based on Textbox 14.14, specify four evaluative devices in the story, giving the line number of each device. Comment on how each device contributes to the point of the story. What kind of personal identity do you think the child is constructing for himself and presenting to the listener in this story?

Bonus question: Why do you think the narrator calls the broom that Stevie used to hit him *sharp?*

5. Early word combinations

Transcript for Chapter 14, Exercises 5, 6, 7

The data for this exercise are available on the *How Languages Work* website, in the Student Resources for Chapter 14. The document provides excerpts from a transcript of Nina at 1;11.

i. Use the list of functions in the leftmost column of Textbox 14.9 to specify the function of Nina's utterance on each of the following lines: 58, 61, 65, 77, 90.

ii. Find and give the line number of one two-word utterance that does not seem to fit any of the functions listed in Textbox 14.9. How would you specify the function of this utterance?

Bonus question: Find two utterances that are longer than two words but serve one of the functions listed in Textbox 14.9. For each utterance, specify its function and describe the development in form that has occurred while functional continuity is preserved.

6. Child-Directed Speech (CDS)

Transcript for Exercises 5, 6, 7

The data for this exercise are available on the *How Languages Work* website, in the Student Resources for Chapter 14. The document provides excerpts from a transcript of Nina at 1;11.

i. Give five examples from the transcript in which Nina's mother uses one of the discourse properties of Child-Directed Speech (see Textbox 14.3). For each example, give the line number and specify which discourse property of CDS Nina's mother is using.

ii. In lines 43–59, 67–76, and 94–107 of this transcript, Nina's mother co-constructs a narrative with Nina about their trip to the zoo. Find three examples, other than the ones you have used for (i), in which Nina's mother uses one of the discourse properties of CDS to scaffold Nina's telling of this story. Give the line number of each example, specify which discourse property of CDS is involved, and briefly describe the role it plays in the co-construction of the narrative.

Note: In answering both (i) and (ii), you may use the same discourse property more than once, but try to find different properties if you can, especially for (i).

7. Morphology

Transcript for Exercises 5, 6, 7

The data for this exercise are available on the *How Languages Work* website, in the Student Resources for Chapter 14. The document provides excerpts from a transcript of Nina at 1;11.

i. For each of the fourteen grammatical morphemes in Textbox 14.11, indicate whether Nina used that morpheme at least once in the transcript. Give the name of the morpheme and specify either "used" or "not used." If the morpheme was used by Nina, also provide the line number of one correct use.

ii. Find five cases in which Nina fails to use a grammatical morpheme from Textbox 14.11 where it is obligatory; for each case, specify the missing morpheme and its line number.

iii. Find as many examples of overregularization errors as you can; specify the morpheme that is being overregularized and give the line number of each error.

iv. Find two utterances in which Nina uses a preposition incorrectly. For each case, give the line number and indicate which preposition Nina used, as well as which preposition would have been more appropriate.

8. Conversational discourse

Transcripts for Exercise 8

The data for this exercise are available in two transcripts (one using American English and one using British English) on the *How Languages Work* website, in the Student Resources for Chapter 14.

Using either transcript, answer the questions below. Note that the term "function" refers to the purpose that the form serves in the interaction, i.e., why it is being used.

i. Vocatives or endearments. One of the discourse properties of Child-Directed Speech (CDS) is the frequent use of vocatives (e.g., *Mommy, Bobby*, …), including endearments (e.g., *sweetie*). Using line numbers, give ten examples of vocatives or endearments produced by either the adults or child. What functions do you think vocatives and endearments serve for the participants? (*Note*: The functions may be the same or different for the adults and child, and vocatives and endearments may serve different functions.)

ii. Repetitions. Researchers have discovered that repetitions are not merely imitations; instead, they serve a variety of functions in conversation. Using line numbers, give five examples of repetitions in the transcript, produced by either the adults or the child. What are some of the functions that repetitions serve in this conversation? (*Note*: The functions may be the same or different for the adults and child.)

iii. Speech acts. Using line numbers, give at least one example each of the following six speech acts, produced by either the adults or child. Describe the function(s) served by each of the examples. (Refer to Textbox 14.5 for examples of common one-word speech acts.)

a. Notice event
b. Statement
c. Answer question
d. Direct attention
e. Request for action
f. Request for information

15 Second Language Acquisition

KEY TERMS

- Critical Period Hypothesis
- Communicative competence
- Nativist theories of SLA
- Interlanguage
- Automaticity
- Interaction Hypothesis
- Sociocultural theories of SLA

CHAPTER PREVIEW

As we have seen in earlier chapters, language is a complex array of many different components, ranging from individual sounds to the appropriateness of a particular utterance or sentence in a given situation or culture. In this chapter we will look at the issues involved in learning or acquiring a second language as an adolescent or adult learner. A key question with regard to **second language acquisition (SLA)** is: Why do people acquire a first language with little conscious effort, while it is so difficult to master all of the aspects of a second language and speak it like a native speaker?

This chapter will first discuss the main linguistic issues concerning how second languages are acquired (e.g., phonology, morphology, syntax, lexicon/vocabulary, pragmatics). It will then describe some of the influences from the field of psychology on the study of SLA and will examine the cognitive processes that differ between first language (**L1**) and second language (**L2**) learning. Thirdly, the chapter will consider how social and affective issues of L2 learning have come to the forefront in the last decades. Finally, interspersed throughout the chapter are discussions of the relationship between current knowledge about how second languages are acquired and the practice of language teaching, including some of the current issues in language teaching, especially those arising from increased globalization.

LIST OF AIMS

At the end of this chapter, students will be able to:

- **explain the "nature versus nurture" argument in terms of second language acquisition;**
- **explain why learning pronunciation of a second language is more difficult than learning that of one's first or native language;**
- **describe what developing vocabulary knowledge involves beyond word definitions;**
- **explain the distinctions between form, meaning, and use in acquiring grammatical competence;**
- **give examples of sociolinguistic/pragmatic/cultural differences that would make the same utterance that one might use in one's native language inappropriate in a second language.**

15.1 Introduction

SIDEBAR 15.1
You can find definitions for key terms and bolded terms throughout this chapter in the Glossary (at the back of this book or on the student resources website). Additional online resources for this chapter include a study guide, review quiz, and vocabulary quizzes.

Many of us grew up hearing and speaking only one language, our "native language," "mother tongue," or **L1**. Others, the lucky ones, heard and spoke more than one language as children (see Stop and Reflect 15.1). As we progress into the twenty-first century, children in many parts of the world, including the United States, grow up speaking more than one language for a variety of reasons (e.g., their community is multilingual, they or their parents are immigrants, they learn foreign languages in school).

STOP AND REFLECT 15.1 **YOUR EXPERIENCE WITH LANGUAGE LEARNING**

If you have learned a language other than your mother tongue, at what age did you start? Were you able to learn this second (or third) language as perfectly and with as little conscious effort as the first? Which aspects of learning your second language were easy? What was more difficult? Think about how you learned vocabulary, pronunciation, grammar, and knowing how to talk to your friends versus knowing how to talk with adult strangers. Can you hypothesize why certain aspects of language were easier to learn than others?

No matter how many languages one grew up with, many adults want to learn other languages for various reasons. As a result, numerous commercial products and websites aim to address this need. Some promise that you can learn a new language effortlessly, without translation, painful memorization, or boring grammar drills. All you have to do is tap your innate language-learning ability, and learning a second language will be as natural and painless as learning your first. But as we will see, ***successful second language learning depends on a complex array of linguistic, social, cognitive, and affective variables.*** Because excellent language teachers understand this, they design classes using teaching methods that address all these aspects of language learning. Textbox 15.1 discusses careers in SLA and language teaching more generally.

TEXTBOX 15.1 **CAREERS IN SECOND LANGUAGE ACQUISITION**

Students interested in linguistics and language learning often consider a career in teaching language. In English-speaking countries such as the United States, Canada, or Australia, there are many types of English as a Second Language (ESL) programs for learners of all ages. In addition, since English has become a global lingua franca, there are numerous opportunities to teach English as a Foreign Language (EFL) in other countries. Native speakers of English or proficient second language speakers of English might well find opportunities to teach English or work in related areas such as language policy or the development of teaching materials at home or abroad. Speakers fluent in languages other than English can teach those languages to L2 learners at home or abroad. Research on SLA facilitates this work.

15.2 Linguistic Issues in Second Language Acquisition (SLA)

As adults, most of us do not consciously remember how we learned our first language. It seems that we did not have to memorize vocabulary, learn grammar rules, or think consciously about how to speak politely to our elders. Learning, or acquisition of L1, was effortless (see Textbox 15.2). But learning a second language seems very different and much more difficult. Many issues arise for second language learners. The type of explanation that is appropriate for each issue depends on the aspect of language it involves.

TEXTBOX 15.2 **ACQUISITION VERSUS LEARNING**

Although the words *acquisition* and *learning* are often used interchangeably, there is a tradition within SLA that draws the following distinction between the two: *acquisition* is the process of a child's L1 development in which he or she gradually begins to produce the language without consciously thinking about the rules of grammar, the pronunciation, or the intonation. In contrast, *learning* occurs with second languages, particularly if the primary source of exposure to the language is in a classroom – that is, not a "natural" situation – in which learners must consciously memorize words and rules, deduce patterns in the language, and think about producing sounds and rhythms that are "unnatural" in comparison to the L1.

15.2.1 Phonology and Pronunciation

One of the most interesting questions regarding L2 phonology and pronunciation is why attaining native-like pronunciation presents one of the greatest challenges to second language learners. Almost everyone has known immigrants to their home country who have lived there for many years, and although the grammar and vocabulary of the new language they acquired may be excellent, they may still have noticeable differences in their phonetics and phonology that mark them as non-native speakers. Often most noticeably, these differences are in intonation, timing, and other features of their prosody. Despite the fact that intonation and rhythm are what infants react to first before they learn words and grammar, these language components are frequently the last that adults acquire.

SIDEBAR 15.2
Prosody, including intonation and timing, is described in more detail in Chapter 10.

Linguists have proposed the **Critical Period Hypothesis** to explain why it is so hard for adolescents and adults to acquire native-like phonological and prosodic patterns (i.e., to "lose their accents," to put it in colloquial terms). The Critical Period Hypothesis proposes that there is a biologically determined "critical period" (also called the "sensitive period") for language to be acquired naturally. Lenneberg (a neurolinguist) proposed in 1967 that certain biological events related to language acquisition can only happen in an early stage of development and that children must receive an adequate and sufficient amount of linguistic input during this critical period in order for language development to proceed normally. He initially hypothesized that this period extends from age two to puberty and is based on loss of neural plasticity in the brain.

SIDEBAR 15.3
See Chapter 14, especially Section 14.2, for discussion of the biological and cognitive foundations of L1 acquisition.

So what are the implications of the Critical Period Hypothesis for second language acquisition? There appear to be no simple or definitive answers to this question. A number of studies have shown that the notion of the nature of L2 acquisition changing suddenly and dramatically around the age of 12–13 due to changes in the brain is much too simplistic. It is possible that there are different critical periods for different language skills. For example, a critical period for acquiring unaccented speech (suggested to be as early as age six), might be different from the critical period for acquiring grammatical competence (which may be closer to puberty). On the other hand, a recent test of the Critical Period Hypothesis for SLA found that the degree of success in SLA steadily declines throughout the life span (Hakuta et al. 2003). The pattern of decline, however, failed to be marked by a sharp drop at a particular age, which would be the essential hallmark of a critical period.

In L2 research and teaching, there is a trend today toward recognizing **suprasegmentals** (see Chapter 3) as potentially more important than **segments** for speaking comprehensibly and for listening comprehension. Indeed, babies react to **prosody** (as well as facial expressions and gestures) well before they have learned words or language. ***Studies have shown that L2 learners who have received instruction and training in prosody speak more comprehensibly and fluently than those who have been trained only on segmental accuracy***, i.e., those who have focused only on consonants and vowels (e.g., Derwing et al. 1998; Derwing and Rossiter 2003).

SIDEBAR 15.4
See Section 2.7 for information on suprasegmentals, including syllables, stress, tone, and intonation.

TEXTBOX 15.3 **COMMUNICATIVE COMPETENCE**

Communicative competence refers to both a speaker's grammatical competence (broadly including a knowledge of rules of grammar, vocabulary, pronunciation) and sociolinguistic competence (a knowledge of rules of language use in culturally appropriate ways and the ability to effectively communicate or interact with speakers of the target language). Mastery of both significantly advances a learner's ability to communicate in the target language. (See the seminal article by Canale and Swain (1980) proposing "strategic competence" and "discourse competence" in addition to grammatical and sociolinguistic competence.)

Many L2 learners comment that their language classes do not focus much on pronunciation. As a native Russian speaker learning English noted, "My English professors did not give enough attention to pronunciation … after living in the United States for a while, I realized that good pronunciation takes you a lot further than good grammar." It is true that some language teaching approaches have placed little or no emphasis on pronunciation, especially those focused primarily on translation of L2 reading materials and on grammar. This tendency still holds in foreign language contexts where assessment of foreign language skills is done largely through written exams. In recent years, however, approaches aimed at developing **communicative competence** have integrated pronunciation into listening and speaking skills (see Textbox 15.3). In addition to greater emphasis on the intonations and rhythms of a language, recent trends also stress helping learners develop strategies to improve pronunciation outside the classroom, such as extensive listening to gain familiarity with intonation and stress, as well as intensive practice on diagnosed problem areas along with monitoring of progress.

STOP AND REFLECT 15.2 **HOW HAVE YOU LEARNED SOUNDS?**

As you have probably experienced, when you are trying to communicate meaning, it is very difficult to monitor your sound production at the same time. If you have learned an L2, which types of sounds did you need to practice repeatedly? Were there particular words or expressions you focused on in your practicing? (For example, a learner of English practicing /r/ might practice conversational expressions such as *That's right* or *Really?* A learner of Russian might practice stringing multiple consonants together at the beginning of a word to say *здравствуйте* [*zdravstvujtje*], 'hello.' And a learner of German might practice producing the front rounded vowels marked by an umlaut in the orthography, so as to say *Das ist schön* 'That's nice' or *tschüss* 'bye, so long.')

Although communicative language teaching approaches have de-emphasized "skill and drill" exercises, pronunciation is one area in which repeated practice can be beneficial, leading to automaticity (see Stop and Reflect 15.2).

STOP AND REFLECT 15.3 **FOREIGN SOUNDS AND INTELLIGIBILITY**

Consider a language you have learned. What sounds do you think are difficult for non-native speakers to produce but perhaps not so important from the perspective of intelligibility? A good example might be the *r* sound in many languages. If learners of Spanish, French, German, Farsi, or Arabic simply use the pronunciation of 'r' from their L1 when speaking English, they will probably be understood; although noticeably non-native, the phonetic substitution is unlikely to compromise intelligibility. On the other hand, speakers of Japanese, a language that doesn't have a phonemic distinction between /r/ and /l/, can find it difficult to produce English /r/ and /l/ sounds distinctly. Communicative problems may arise because of the many English minimal pairs such as *light/right, bled/bread*, etc.

In the teaching of English pronunciation, another recent development is the recognition that in this age of global Englishes, a variety of accents is acceptable. At the beginning of the twenty-first century, approximately three of every four users of English worldwide was a non-native speaker (Crystal 2003). We can assume, then, that much communication in

English occurs among L2 speakers with different first languages and not between native and non-native speakers. A language put to this type of use is known as a **lingua franca**. While descriptions of English as a lingua franca can include grammar, the lexicon, and pragmatics, the pronunciation of English when used as a lingua franca is of particular interest to those involved with language teaching and language policy. The notion of "correct pronunciation" based on accepted standards becomes less of an issue than describing what constitutes intelligible communication. For example, researchers have pointed out that some English sounds that are difficult for L2 speakers to produce, such as the *th* sounds (ð and θ), are not really necessary for intelligible global communication (Seidlhofer 2005). (See Stop and Reflect 15.3.)

SIDEBAR 15.5
Chapter 13 provides a more detailed discussion of language contact and multilingualism around the world.

In addition to English there are, of course, many other languages used as lingua francas throughout the world. For example, Standard Cantonese is a lingua franca in Singapore and Malaysia as well as in Hong Kong and the Guangdong province of China.

15.2.2 Lexicon/Vocabulary

Many people believe that vocabulary may be the most important aspect of any language that is being learned; if you don't know enough words, no amount of grammar knowledge will allow you to speak, read, or write the language. But how much vocabulary does one need to know in order to speak an L2? It depends on the purpose. Some estimate that for everyday conversation or for the purposes of reading a newspaper in English, we need to know approximately 2,000 words (Lightbown and Spada 2006); however, it depends on the content of the conversation and on the newspaper. Many first-year language textbooks claim to teach 2,000–3,000 words; a recent survey of some Spanish and German textbooks in the United States found that their glossaries contained between 1,500 and 6,300 words. However, most of us have had the experience of being *unable* to hold a basic conversation or read a newspaper in an L2 even after studying the L2 for a year (at the college level). For English, it is estimated that the 2,000–3,000 most frequent words make up as much as 80–90 percent of most non-technical texts. But in typical L2 classrooms, particularly after the first year of instruction, much of the vocabulary that is taught is from literary works or for relatively specialized topics. Based on what typical students are able to read and say after two years of L2 study in the classroom, it is likely that learners actually need to know several thousand English words (4,000 perhaps) in order to converse about more than the weather, one's family, and the most basic of everyday activities.

For many languages, researchers have examined corpora to determine which words are most frequently used in spoken and written discourse; the lists resulting from such analyses are used for teaching materials and self-study. For example, consider the sentence groups below taken from two Productive Levels Tests for English. The learner's task is to complete the partially spelled-out words.

2000-word level:

1. The rich man died and left all his we_____ to his son.
2. Teenagers often adm_____ and worship pop singers.

3. La_____ of rain led to a shortage of water in the city.

5000-word level:

1. This is a complex problem which is difficult to compr_____.
2. We do not have adeq_____ information to make a decision.
3. She is not a child, but a mat_____ woman. She can make her own decisions. (Nation 2001: 425–427)

When learners try to guess the words, they undoubtedly use contextual cues: associated words (e.g., *rich* associates with *wealth)* or words that tend to occur with others (e.g., *lack of rain, adequate information*). In fact, to know a word means not just understanding individual meanings but knowing which words "go together" or collocate with others. Because theories of SLA are placing increasing importance on such **collocations** for developing proficiency, ***L2 vocabulary teaching materials increasingly emphasize the learning of groups of words as sets, including collocations*** (e.g., *light lunch, slight chance, endless supply, pretty much, right now)* ***and lexical bundles*** (*by the way, give me a break, I'd be happy to*). With the development of **corpus linguistics**, we now have a great deal of information about how words combine with other words in English as well as in many other languages. In addition, **corpus** analyses show which groups of words are common in different registers, such as casual conversation versus academic prose. For example, analysis of a large corpus of conversational English identified the most frequent **lexical bundles**, defined as "recurrent expressions, regardless of their idiomaticity, and regardless of their structural status" (Biber et al. 1999: 990). Here are a few examples that begin with the personal pronoun *I: I'm going to get, I'll have a look, I can't be bothered, I'll see what you, I can't remember what*. As you might imagine, the learning of lexical bundles and other word combinations such as collocations helps to produce idiomatic speech and to avoid odd pairings of words (e.g., *big solution, make a vacation, make a party*) that may result from L1 to L2 translation or from a limited L2 vocabulary. (For information on an L2-specific corpus, see Textbox 15.4.)

SIDEBAR 15.6
For more on corpus linguistics, see Textbox 9.1.

TEXTBOX 15.4 **FRENCH LEARNER LANGUAGE ORAL CORPORA**

As noted, language corpora can be used to explore a wide range of phenomena in natural language production that can be applied to language teaching. In addition, SLA scholars use corpora of the speech of language learners to directly study error patterns and other evidence for how second languages are acquired. One such initiative is the French Learner Language Oral Corpora. The website includes a link to publications that provide an idea of the range of topics that can be explored.
www.flloc.soton.ac.uk/

One other area in which corpus linguistics has contributed greatly to vocabulary study is showing us how vocabulary and grammar interact, often referred to as lexico-grammatical structure. These interactions often differ depending on the registers of language. Table 15.1

SIDEBAR 15.7
To review the concept of **register**, see Section 11.2.1.

gives examples from Biber et al. (1999: 478) of the most frequent verbs used in English passive voice in three different registers: conversation, journalism, and academic prose.

As Table 15.1 indicates, both the lexical verbs and the frequencies of passive verbs vary across registers. For example, while *be done* (as in *It's gotta be done)* is the only verb in conversational English to occur more than 100 times per million words, passive verbs in academic prose (e.g., *This procedure should be repeated)* occur with much greater frequency. In fact, several other lexical verbs not listed here occurred more than 300 times per million words in the academic prose data. And most verbs listed for the journalism and academic prose registers were rarely used in passive form in conversational English. In sum, ***developing vocabulary involves not only knowledge of word meanings but also awareness of grammatical forms in language use.***

As for learning L2 vocabulary, linguists have different views regarding which methods are most effective. Some believe that extensive reading (especially for pleasure, because it is more motivating) is the best way to learn vocabulary because the words are encountered in context (e.g., Krashen 1989). Others believe that learners would need to encounter the same word between six and ten times in order to actually learn the word (Zahar et al. 2001), and therefore specific and targeted study/memorization/use of vocabulary is necessary. Another issue to consider is that in order to read fluently (without constant, focused, painstaking effort), one needs to understand the meaning of between 90–95 percent of the words in a text. If learners need to look up every other word in assigned L2 texts, then the size of their vocabulary may simply not be large enough for the task, not to mention the fact that looking up so many words may be disruptive to comprehension (see Stop and Reflect 15.4).

TABLE 15.1 Frequency of lexical verbs with the passive

Register	Lexical verb	Occurrences per million words
Conversation	*be done*	over 100
	be called	over 40
	be put	over 40
Journalism	*be expected*	over 200
	be said	over 100
	be held	over 100
Academic prose	*be made*	over 300
	be used	over 300
	be seen	over 300

STOP AND REFLECT 15.4 **HOW HAVE YOU LEARNED VOCABULARY?**

You might have opinions about effective methods for learning vocabulary, based on your personal experiences. For example, in your L2 classes, did you have to memorize long lists of (unrelated) vocabulary? Was it an effective way of increasing your vocabulary? Which ways of increasing your L2 vocabulary have worked best for you?

Of course, ***how much and what kind of vocabulary a learner needs depends on their learning goals.*** If someone is learning Chinese for business purposes, particular terms related to the profession would be important as well as general vocabulary appropriate for "small talk" topics and a range of polite expressions to be used in social situations. In fact, there are special vocational language programs that focus on the vocabulary needed in professions such as nursing. Consider a person interested in learning German only to read scientific articles or someone studying Japanese only to study literature. These learners have very different vocabulary needs from someone who is learning, say, "survival" language for travel. Young people are often very interested in learning the current idioms, slang expressions, and informal conversation starters of an L2 in order to communicate with others their own age; they don't want to sound like a textbook. Informal expressions, like German *Was gehtab? – Nicht viel* ('what's happening? – not much'), will serve students better than some oft-taught questions in L2 classes, like *Was machst due in diener Fieizeit?* ('what do you do in you free time?'), which can sound stilted and unnatural. Clearly, an important part of vocabulary learning and teaching in any language is considering the contexts and purposes of language use.

15.2.3 Grammar

In our discussion of vocabulary learning, we pointed out that the grammar of a language is not something that can be clearly separated from meanings in actual communication. The essential role of grammar in learning an L2 was emphasized by applied linguist Henry Widdowson, who stated, "Language learning is essentially grammar learning and it is a mistake to think otherwise" (1988: 154).

STOP AND REFLECT 15.5 **HOW HAVE YOU LEARNED GRAMMAR?**

If you have learned or studied a language other than your mother tongue, think about how you learned or were taught the grammar of that language. What were some of the most difficult things to learn about that language's grammar? How similar was the language to your L1, or if you have learned multiple L2s, how similar are the L2s to your L1 or to each other? These are some of the questions that will be discussed here. Just how does one go about learning the grammatical system of an L2?

While many language learners associate the word **grammar** with language rules that characterize prescriptive usage, ***current approaches to the teaching and learning of L2 grammar emphasize not rules but rather meaningful and dynamic language systems that change over time.*** What constitutes "correct" or appropriate grammar depends on a number of communicative variables. Thus, learners need not only to acquire

grammatical forms but also to gain understanding of the meanings and uses of grammatical structures (see Stop and Reflect 15.5). To borrow an example from our last section, a learner of English acquiring the passive voice must know not only the forms of the structure in various tenses (e.g., *is written, is being written, has been written*) but also how the structure is used in written or spoken English, such as to put focus on a semantic **patient** that is **given** rather than **new**, meaning the referent is already being discussed in the discourse (e.g., *The burglar was arrested yesterday*) or to avoid mentioning who is to blame for an action by omitting reference to a semantic **agent** (e.g., *Mistakes were made*). As another example, the modal verb *may* in English is an easy form to learn but has several meanings, including permission (*you may leave*) and possibility (*it may rain*). Further, an English learner might discover that speakers in informal contexts often use another modal, *can*, and not *may*, to ask permission: *Can we go when we've finished our exam?* As these examples illustrate, acquiring the grammar of an L2 involves not just learning the forms, but also multiple meanings and appropriate uses of structures in communicative contexts.

SIDEBAR 15.8
The semantic case roles of agent and patient are introduced in Section 6.3.5. The concepts of given versus new information are discussed in Section 9.8.

Sensitivity to the communicative context is only one important factor in successful L2 acquisition. Another factor is the first language that the learner brings to the process. L2 learners frequently make errors that can be attributed to transfer from L1. For example, native speakers of Chinese or Korean learning English may omit the *-s* inflection for English plural nouns since their L1s do not normally mark for plural (e.g., **I bought two book)*. Word order differences between languages account for many such errors. A speaker of Farsi learning English, for example, might transfer that language's subject, object, verb ordering as well as the ordering of adjectives after nouns in producing English utterances (e.g., *I man old saw* for *I saw an old man)*. A native speaker of English learning French may incorrectly place some adjectives, such as those denoting colors, before nouns instead of after them (e.g., ***la blanche maison* for 'the white house').

It is also the case, however, that many grammatical errors made by L2 learners are not caused by interference from L1 but are specific to the particular L2 being learned. For example, in English some lexical verbs, such as *enjoy*, are followed by complement clauses in which the verb is in the *-ing* **(gerund)** form, as in *I enjoy **reading** mysteries*, and do not take complements in which the verb is in the infinitive (**I enjoy **to read** mysteries*). Many learners of English, regardless of their L1s, will make errors in using the wrong complements after such verbs until they acquire the correct structures. (To explore an online resource that provides correction of grammatical errors, see Stop and Reflect 15.6.)

Further evidence that the L1 is not the only factor contributing to errors in L2 production is that ***L2 learners, regardless of their mother tongue, master certain grammatical morphemes in the same order as children learning that same language as an L1***. For example, L2 English learners in early stages of acquisition typically use the word *no* or *not* to negate utterances, placing it at the beginning of the utterance, as in *No have dog*; later they may use other forms combined with auxiliaries such as *don't*. The same pattern is attested in L1 acquisition of English. Another example is that learners of English may

extend the regular past-tense rule to irregular verbs, producing *teached* or *putted*, or apply the regular plural formation to irregular nouns, producing forms such as *teeths*. Again, these patterns are frequently found in the speech of children acquiring English. Native speakers of English make similar types of mistakes when learning other languages. For example, learners of Japanese sometimes apply the regular morphological rules of verbal negation (using the morpheme *-nai*) to the separate word class of adjectives, leading to incorrect forms like *atsui-nai* or *atsu-nai* for 'not hot' as opposed to the correct form *atsu-kunai*. Such mistakes are also found in the speech of children acquiring Japanese.

Another way that L2 acquisition can mirror processes of development for L1 is that acquisition does not always proceed in a linear fashion. Sometimes learners experience **U-shaped learning**, first producing a correct form, perhaps by imitation, then later producing an incorrect form after learning the grammatical system, and finally producing the correct form again once the exceptions to the rules have been learned or the grammatical system has been mastered. For example, in L1 acquisition, a child might produce the sequence: *I have more than you* (2 yrs.); *I have many-er than you* (3 yrs.); *I have more than you* (4 yrs.). Similarly, in adult L2 acquisition, a learner may say *She taught me English* early on, based on having heard the form *taught*; then later, after learning to form the past tense with *-ed*, the learner might produce *She teached me English*; and finally, after learning that the verb *teach* is irregular, they will say *She taught me English*.

The overgeneralization of grammatical rules and the observation of U-shaped learning patterns led to the development of an important concept in linguistic approaches to SLA, namely that of **interlanguage**, which is the L2 language system created by a learner; this interlanguage is neither the L1 system nor the native-like L2 system, but something in between. A learner's interlanguage is constantly changing and is continually revised based on new words, forms, or structures that enter the system. It can be thought of as a continuum of a learner's evolving L2 language system, or even as a third language, with its own grammar, lexicon, and phonology. The key point is that the learner's language at any given time is an internalized system, created as that learner imposes structure on the available linguistic input. As such, a learner's interlanguage can be seen as an important intermediate stage that is part of the language-learning process rather than as a system that is considered deficient. This allows greater tolerance for errors, as mistakes are considered to be steps in the evolving process of L2 mastery. Learners often experience, when learning an L2, that certain errors persist when they speak or write the language. This is called **stabilization** or **fossilization**, a phenomenon that may prevent the learner's L2 system from becoming native-like.

STOP AND REFLECT 15.6 **ONLINE TOOLS FOR LANGUAGE LEARNING**

www.duolingo.com
www.lang-8.com

The internet provides a wealth of resources for learning foreign languages. Some will be more effective for certain kinds of learning and language competency than others. Consider the website and app Duolingo, or the website Lang-8. Which types of language skills would each of these develop? Would you be inclined to use them when studying a foreign language? Why or why not?

15.2.4 Cross-Cultural Issues and Pragmatic Interpretation

Chapter 8 introduced pragmatics as extralinguistic competence, the ability to draw correct inferences based on the context of an utterance. ***Culture is a critical part of the extralinguistic context, and there are many culturally based expectations for how utterances should be interpreted.*** This fact is (often keenly) felt by second language learners – and speakers of the target language who interact with them – when utterances intended in one way are interpreted in quite another.

This can be true of conventionalized interactions, such as the exchange of greetings, where different greetings have different implications about the level of formality of the interaction and the social relationship between interlocutors. For example, in the United States the following greetings and responses are common:

How are you today?	*How're ya doin'?*	*What's up?*
I'm fine, thanks.	*I'm good.*	*Not much.*

How are you? can be used in more formal situations, resulting in the more formal and polite *I'm fine, thanks*, whereas *How's it going?* or *How're ya doin'?* are less formal and are often answered with *I'm good*. In the most informal settings, e.g., on college campuses, you might hear *What's up?* (and even *'Sup?*), with a reply like *Nothin'* or *Hey*. Speakers immersed in the cultural context know that the question itself is often used as a greeting and is not intended to be interpreted as a true question about how the other person actually is; likewise, the responses are rather formulaic as well. An L2 hearer lacking this cultural context may not realize that the "question" is a standard greeting, but rather interpret it as a request for information. When coming from a stranger, e.g., a store cashier, he or she may either feel affronted by the question or proceed to give a full and complete answer about how he or she really is doing that day, surprising the cashier! A similar mistake can be made by American speakers in other cultural contexts. For example, in Spain, when people ask *¿Qué tal?* ('How are things/What's up?') they are often using it as a genuine request for information and expression of interest in the other person, so when an American answers *Nada* ('nothing'), the response could be perceived as cold, rude, or insensitive.

Missed interpretations can also occur in other conventionalized interactions, such as the giving and receiving of compliments, or the acceptance or refusal of a date. People draw inferences about intended meanings based on the interactional norms of their native cultures, and they respond accordingly, sometimes in ways that are inappropriate or misinterpreted in the foreign cultural context. The following examples, taken from observations by students in the United States, illustrate typical cases:

- **Japanese:** When a Japanese teacher complimented an American student, the student said *Thank you!* but later realized that this was an inappropriate response to a compliment in a Japanese context, where it is considered polite to deny compliments, as the speaker then appears more humble.
- **Persian:** When a Persian student said to an American, *Wow, you've gotten big/fat*, it was intended as a compliment, meaning 'You look healthy/good.' The culturally based intended interpretation is that fat indicates a lack of illness. In the US cultural context, however, being fat is often stigmatized, so the statement was interpreted as an insult.

- **Hungarian:** When a Hungarian woman was invited to go on a date by an American man, she said *No, I can't; I'm busy*. He said, *Okay, maybe next time*. But in Hungarian culture, he was supposed to keep asking and trying to persuade her to go out with him. She expected him to interpret her utterance in that way and was disappointed when he didn't persist.
- **Japanese:** A Japanese man asked an American woman if she liked a certain food. It was his way of asking her out, following cultural norms in Japan. Lacking this extralinguistic cultural context, she responded honestly to the linguistic meaning of the utterance, saying *No, I don't like that food*. Not realizing that she did not understand his pragmatic intention, he assumed from her response that she did not want to go out with him.

Missed interpretations based on different cultural assumptions are not limited to conventionalized interactions. This is especially true when people prefer to be indirect:

- **Japanese:** A student arrived late to Japanese class, and when the teacher commented *You seem to be very busy*, she was expecting the student to offer an explanation as to why the student was late. Without the shared cultural background that would indicate this was an indirect request for explanation, the student found the comment to be confusing.
- **Italian:** An American student's Italian roommates kept asking her *Aren't you hot?* whenever she wore boots and jeans during the summer. They were trying to imply that she was inappropriately dressed, based on their cultural assumptions about seasonally appropriate clothing, which she did not share. She was not able to interpret their questions as suggestions that she dress differently.

One aspect of language use where people frequently encounter difficulty has to do with determining the appropriate level of formality. Speakers who want their linguistic forms to be interpreted as polite and well-meaning may mistakenly appear either overly formal and cold, or overly informal and presumptuous. We can see this in the examples below, from L2 writers sending emails to the editors of a scholarly journal; some were overly formal and others were far too informal:

- L1 Arabic: *It honours me to send my manuscript to consider for publication in your estimable journal.*
- L1 Korean: *Dear editors, if you possibly find a time to review my attached file and give a feedback to my current concern above, it would really be appreciated, sir.*
- L1 Persian: *I entreat you to consider my humble paper as an attachment for publication. I hope these few lines find you in the best of your health.*
- L1 Persian: *i have written an article … and now I wanna submit it in one ELT journals. how can I submit it in your journal? plz send some information.*
- L1 Chinese: *Dear Editor, Please check this article.*
- L1 Chinese: *Dear Professor, Thank you very much for your immediate response and your exciting website. Wish you a healthy body and a happy life.*

One recent development in the teaching of pragmatics for L2 learners is a greater emphasis on the bicultural or multicultural identities that many speakers of other languages possess. That is, although learners need to be aware of practices that are potentially offensive or off-putting to people of the L2 culture, as illustrated in some of the examples above, speakers

do not necessarily need to adopt all L2 communicative norms when speaking the L2. One example might be the response to compliments. An American woman might respond to a compliment about a personal item such as clothing with a comment like *Oh, yes, I just love it!* In another cultural context, such a response might be interpreted as bragging or in another unintended way. A woman who feels uncomfortable responding in such a way should not feel she needs to give up her L1 norm of responding, as long as it is not objectionable and does not elicit interpretations that she did not want to make. Or she might combine some part of an L2 manner of response with that of her L1. Thus, learning the pragmatics of an L2 becomes an additive experience rather than one that replaces L1 with L2, creating a more complex (in the good sense) and richer identity for the language learner. However, ideally, the learner should be making conscious choices about appropriate forms to use in social situations and not "default" L1 forms resulting from a lack of knowledge about the L2.

15.3 Cognitive Processing Issues in SLA

First and second language acquisition are important fields of study not only within linguistics but also within the field of psychology. The term **psycholinguistics** is used to indicate the intersection of these fields, including the acquisition of language. Since language acquisition is a cognitive process, it is also of great interest to those who study **cognitive linguistics**. Different people use different cognitive strategies in the process of L2 acquisition. For example, some people consciously think through nearly everything they are going to say before saying it, mentally translating from their L1 into the L2 before speaking or writing, thus monitoring their production. Others may use "chunks" of language or grammatical formulas in the construction of sentences. These represent different learning processes that can vary across individuals, or which can be used by a single individual at different points in the L2 acquisition process. There are also different ways in which language is comprehended, including "top-down" processing where learners are able to reach a basic level of comprehension of an utterance without understanding every word, and "bottom-up" processing where comprehension proceeds more slowly as learners focus on individual words or morphemes, which can be an obstacle to the comprehension of the whole. It is interesting to consider the implications of these differences and what they reveal about learning and human cognition.

Before considering these implications, it is important to understand the historical context out of which the field of psycholinguistics developed. Until the middle of the twentieth century, **behaviorism** was a dominant theory within the field of psychology. Applied to L2 learning, the theory suggests that if a learner hears a stimulus in an L2 and repeats the word or sentence enough times, it will become a habit and can then be used to communicate successfully. However, as theories of psychology evolved in the late twentieth century, there was a reaction against behaviorist theories. In SLA, this entailed a movement toward cognitive theories, including a shift in focus from the learner's *external* environment to the individual's *internal* thought processes. In the cognitive tradition, the focus is on the central role of the human mind in processing linguistic data that is heard or received as input, with a reduced role for repetition and habit formation. SLA is viewed as the acquisition of complex

skills, and, like learning to play a sport or a musical instrument, the role of **automaticity** is of great importance. The goal of SLA is for the learner to be able to process linguistic input and output quickly, unconsciously, and effortlessly, without having to think about each word or step in the process. To do this, the learner begins with controlled processing, in which the associations have not yet been built up by repeated use and so require conscious attention. With time and experience, learners begin to use language more automatically.

Language processing is also believed to be highly dependent upon input frequency, with frequency effects found in the processing of phonology, lexis, grammaticality, syntax, and formulaic language production (Ellis 2002). The effects of frequency of exposure and input have been studied in first and second language acquisition, and help explain, for example, the variance of morpheme acquisition order. But ***the main question is how learners move from knowledge of the examples received as input to automatically producing language; for SLA, this question remains unanswered.*** (See Textbox 15.5 for a discussion of how the theoretical debates between nativist and functionalist theories with regards to language learning play out with respect to second language acquisition.)

TEXTBOX 15.5 **THEORETICAL DEBATES IN L2 ACQUISITION**

Chapter 14 included a discussion of **nativist** versus **functional discourse-based theories** of first language acquisition. Nativist theories are based upon the view that innate grammatical structures (Universal Grammar, or UG) are required to explain certain facts, such as the child's ability to produce utterances that they have never before heard. A functional discourse-based theory, by contrast, would attribute such behavior to more general processes of human cognition, such as learning and analogy. The same theoretical debate is found with regard to second language acquisition, and this motivates interesting questions in both fields. If one assumes the existence of UG, to what extent are these structures still available to someone learning a second language, particularly when the learner is no longer a child, but an adolescent or an adult? Or, if one assumes there is no UG, then how do human cognitive abilities allow for the acquisition of the second language, and what is the role of interactional discourse in this process?

There seem to be a number of different mechanisms at work as learners automate their L2 production. Two important mechanisms proposed in the SLA literature are the **monitor** and the **affective filter**. The monitor is the learner's cognitive "watchdog" that consciously reviews what the learner has said in the L2 and *monitors* it for correctness (see Textbox 15.6). The affective filter is the emotional component of an L2 learner's conscious learning process, which involves how comfortable or uncomfortable they are when speaking an L2. When trying to speak a foreign language, many learners have the experience of not wanting to embarrass themselves. In acute cases of discomfort, the affective filter would be "high" and the learner would find it difficult to communicate in the language (see Stop and Reflect 15.7).

Another mechanism that learners use in the process of SLA is **negotiation for meaning**, a specific type of interaction where L2 learners explicitly signal that they do not understand something and the interlocutor provides input as an attempt to clarify and facilitate their understanding. This is part of a broader theory known as the **Interaction Hypothesis**, proposed by Long (1996); see Textbox 15.7. These kinds of interactions are

TEXTBOX 15.6 **MONITORING L2 SPEECH**

Just as the affective filter mechanism might differ greatly from one L2 learner to another, some learners monitor themselves better than others. The disadvantage of monitoring too closely or carefully is that speakers may not say as much as they would like. Perhaps even worse, speakers might take so much time to think about their correct L2 usage that the conversation may have moved on to another topic before they have the chance to utter a sentence.

STOP AND REFLECT 15.7 **YOUR AFFECTIVE EXPERIENCE IN SLA**

In thinking about your L2 learning experiences, do you ever feel self-conscious about speaking the L2? Do you worry about how you sound to others? Do you know gregarious people who will gab in an L2 "fluently" while making lots of grammatical mistakes?

important for developing communicative competence and are interrelated with the social aspects of SLA, to be discussed in the next section.

Many examples of negotiation can be found in transcripts of computer-mediated communication. For example, in a negotiation between a native speaker of Spanish and a learner of Spanish, the learner (Speaker Y) did not understand the Spanish word *común*, which the native speaker (Speaker X) used (Blake 2000: 125):

X: *Cuales son en común?*
[What are in common?]
Y: *como se dice comun en igles? no comprehende*
[How do you say "common" in English? … no understand]
X: *común es cuando algo y una otra algo son el mismo; entiendes mi explicacion?*
["Common" is when something and another thing are the same; do you understand my explanation?]
Y: *si, gracias …*
[Yes, thank you.]

In addition to such mechanisms, a host of individual learner differences are also factors in acquisition and learning. Among them is a wide array of differences in cognitive styles (e.g., verbal vs. visual vs. auditory vs. kinesthetic learners), learning styles (inductive vs. deductive), personality (e.g., introvert vs. extrovert), aptitude, age, motivation (e.g., instrumental vs. integrative), and affect (e.g., insensitive vs. empathetic). Some of these factors will be discussed in the next section.

TEXTBOX 15.7 **THE INTERACTION HYPOTHESIS**

The Interaction Hypothesis states that: "*Negotiation for meaning*, and especially negotiation work that triggers *interactional* adjustments by the [Native speaker] or more competent interlocutor, facilitates acquisition because it connects input, internal speaker capacities, particularly selective attention, and output in productive ways" (Long 1996: 451–452).

15.4 Sociocultural and Affective Aspects of SLA

Because language is inherently interactional, the social and affective aspects of communication are significant factors in the process of L2 learning. Many important pedagogical methods rely on social interaction as a medium of teaching and learning. Since the late 1970s, the input–interaction–output theory of SLA has been central in providing many insights into second language learning and teaching, or "instructed SLA." Simply put, the model proposes that language acquisition is strongly facilitated by learners using the target language in interaction. In particular, when learners actively negotiate meaning in an L2 with a communicative partner, they benefit from experience with both comprehensible input and output through interaction. Input includes all language that a learner hears or reads through either informal or formal learning; output is simply the language that the learner produces, either speaking or writing. Many L2 classroom activities draw on this model, such as those in which students are given tasks to complete that require meaningful verbal interaction. In collaborative tasks, learners are assigned a goal and must communicate using whatever linguistic or extralinguistic resources they have to achieve the intended outcome.

In the mid 1990s some scholars moved to a more enriched theoretical approach to SLA, believing that the input–interaction–output model did not sufficiently explain how second languages are learned in that it was rooted in cognitive and interactionist SLA theory. Sometimes referred to as the "social turn in SLA," these enriched approaches were based in large measure on the **sociocultural linguistic** theories of Vygotsky and Bakhtin. The underlying premise of these theories is that ***language is predominantly a social tool and as such is developed through interaction between and among communicators***. The key notion is that language use does not take place in a vacuum but in real social contexts. When applied to SLA, the implication is that language instructors must allow L2 learners to become active participants in the culture of the target language, while SLA theorists should investigate how participation in a variety of sociocultural contexts affects the learner's L2 ability.

STOP AND REFLECT 15.8 **INTERACTING AS AN L2 LEARNER**

Based on your own language-learning experience, how important do you think it is to interact with native speakers of an L2? How important has it been for you to have conversations with others in the L2 (e.g., in an L2 class)? Was it helpful for you to speak with other L2 learners, or were you worried that you would hear and learn their mistakes?

It is important to note that cognitive, linguistic, and social factors *all* play significant roles in linguistic use, choice, and development. An L2 learner's interlanguage is a variable linguistic system and is created by the interaction of both social factors and cognitive processes (see Stop and Reflect 15.8). Consider for a moment that when speaking an L1, we do not speak in the same way with all of our conversation partners. We might speak differently to some of our friends than to some family members, not only in terms of the topics we discuss, but possibly also in our choice of vocabulary, tone of voice, or intonation. Similarly, for L2 learners, social variables such as who the interlocutor is (instructor

vs. classmate; native vs. non-native speaker of the L2), the topic of discussion (everyday conversation vs. literary discussion), the social situation surrounding the discourse (classroom setting vs. authentic encounter), and the interactional norms of a given community or type of communication (what is expected in a service encounter in different countries, e.g., the extent to which a store clerk offers help or advice) *all* have an influence on our choice of linguistic forms.

The interactional norms of a community are one part of its culture, which plays a central role in how people use and interpret language. In SLA, most language learners and teachers believe that developing an understanding of the L2 culture is an integral part of language learning. The following excerpt from a student's language-learning history supports this belief:

> *The [Chinese] professors incorporated a lot of authentic materials to generate interest in the language and culture we were studying. This included samples of authentic foods to mark special occasions on the Chinese calendar and teaching us folk songs. My French teachers also adopted this approach by teaching us songs, having us read newspaper articles, and introducing us to classic art and cinema.* (Meredith, native English speaker)

During the past few decades, however, applied linguists have challenged many of the traditional ways of teaching culture in language classrooms, pointing out that "culture" is a much more complex topic than merely introducing different kinds of food, holidays, popular songs, or points of interest in different countries. They have raised questions as to how we can teach the culture of countries which themselves have such great diversity. If, for example, we are teaching about American culture, how do we deal with the tremendous variety involving different ethnic groups, age groups, parts of the country (e.g., the Deep South versus the Pacific Northwest), different lifestyles (e.g., urban versus rural culture), and so on.

STOP AND REFLECT 15.9 **TEACHING CULTURE IN L2 CLASSROOMS**

Considering other languages and cultures with which you are familiar, can you think of cultural differences between subgroups of speakers of the language? What aspects of the culture would you choose to teach in a second language classroom?

In addition to the dangers of stereotyping or misrepresenting cultures, some theorists of foreign language teaching believe that how much L2 culture should be taught depends on the learners' goals (see Stop and Reflect 15.9). McKay, an applied linguist who has been concerned with the teaching of English as an international language, stresses that language teachers abroad need to be aware of the learning needs and native cultures of the students. She suggests that some aspects of an L2 culture may be uninteresting or irrelevant to learners. As an example she discusses a textbook lesson concerned with garage sales, and questions whether this is useful to learners in countries where people do not sell their used possessions in this way. Language teachers also need to be aware that English as an international language, by its very definition, does not belong to a single culture, so it is difficult to decide which cultures should be taught (McKay 2000). This does not mean that culture is not an important part of language learning but that the teaching of it requires sensitivity and respect.

CHAPTER SUMMARY

Anyone who has ever tried to learn a language has probably experienced the excitement of being able to understand and communicate with speakers of that language. Most of us have also experienced the difficulties and frustrations of not being as fluent or proficient in an L2 as we are in our native language. The field of second language acquisition is relatively new (only about a half-century old) and is still grappling with the questions of how learners create a new language system (their interlanguage) with only limited exposure to an L2, what parts of an L2 are learned, and what is not learned or is more difficult to learn. Since language is a complex human phenomenon, with physical, cognitive, and sociocultural dimensions, understanding language learning will require us to take all of these dimensions into account. As we have seen, the main approaches to the study of SLA have been influenced by linguistics, psychology, and most recently, by sociocultural theory, but the process of SLA is complex and there are still no definitive answers as to why most people do not master other languages as well as their first. Nevertheless, linguistic research continues to deepen our understanding of the processes of first and second language acquisition, and the field of applied linguistics continues to act upon this growing knowledge base in order to develop approaches and materials that will facilitate SLA.

SUGGESTIONS FOR FURTHER READING

Brown, **H. D.** 2014. *Principles of language learning and teaching*, 6th edn. New York: Pearson Education ESL.

This is a thorough introduction to second language teaching and learning that also includes chapters on first language acquisition, individual differences in second language learning, sociocultural factors and cross-linguistic influences, and theories of SLA.

Cook, **V.**, and **D. Singleton**. 2014. *Key topics in second language acquisition*. Bristol: Multilingual Matters.

This textbook for university students summarizes issues concerning eight important topics in second language acquisition and discusses how SLA researchers have attempted to address questions about them. It encourages readers to consider their own language-learning experiences in light of research findings.

Lightbown, **Patsy M.**, and **N. Spada**. 2013. *How languages are learned*, 4th edn. Oxford University Press.

This is a very readable introduction to second language acquisition that also discusses learning and teaching in the second language classroom.

Saville-Troike, **M.** 2017. *Introducing second language acquisition*, 3rd edn. Cambridge University Press.

This is a concise and clear introduction to the basic principles of second language acquisition and contains activities at the end of each chapter to check learners' comprehension.

EXERCISES

1. With one or more classmates, take turns interviewing each other about your language-learning experiences using the questions raised in the Stop and Reflect boxes of this chapter, either in class or on a class website. If one of you has not studied another language, you could consider the questions in regard to someone you know, such as a relative or friend.
2. Think of the most effective foreign language teacher you have ever had.
   i. What were the most effective things the teacher did to help you learn?
   ii. What were the most important/effective things in the textbook or course materials?
   iii. What did *you* have to do in order to learn the language?
3. Identify an L2 speaker of a language that you speak well. Record the speaker either talking in a conversation or narrating a brief story. Transcribe the person's speech in IPA, then describe any phonetic differences that mark the speech as non-native, including reference to vowels, consonants, melody, rhythm, and stress.
4. Search the internet for a list of the 2,000 most common words in one of the languages that you have studied or learned. About how many of these words do you know? How proficient do you feel in this language? Do you feel that your proficiency can essentially be measured by the number of vocabulary words that you know, or are other factors involved?
5. In the transcript below, an adolescent learner of English is telling a story to a listener, using the book *A Boy, a Dog, a Frog and a Friend*, which has illustrations but no words. What grammatical errors can you identify? If you were an ESL tutor for this learner, what types of things might you focus on for a language lesson?

   One day a little boy went to the lake and he was fishing. Suddenly he felt something fall into the lake and he was pulled into the lake and he falled into water. And his dog and his friend frog also jumped into the lake. And then he found … other side of the lake he met a big turtle. And they followed the turtle. His friend, the dog? I don't know if that's the thing. He was talking to the turtle and they … the turtle was so … the turtle and the dog fought each other and turtle bite dog's foot. The turtle couldn't open mouth, open his mouth and boy tried to help dog. But, turtle never open his mouth so they decided to take the turtle with his dog. And the boy and dog and frog, and they went back the other side of the lake. And the turtle was disappears. The turtle was in the water but again the turtle bite bites the dog's tail and the dog falled fall into the water again.

6. A special area of pragmatics research, called L2 developmental pragmatics, considers how learners develop the ability to respond in an L2 to social situations such as ones involving making requests, complaints, and apologies. One study (Beebe and Waring 2005) asked English adult learners how they would respond to insults in several situations. The researchers asked their subjects to write down what they "thought they would say" using actual words, not descriptions, in response to rudeness. In one situation, "the bookstore situation," the customer is told by a rude clerk, *If you want to browse, go to the library*. The following are responses that two subjects gave. Which do you think was stated by the lower proficiency learner and which by the higher proficiency learner? Why? How would you characterize these very different responses? Could factors other than proficiency level explain the difference?

   Response A: *Of course I have the right to have a look before I buy it. But now I changed my mind. I am not going to buy anything from your store.*
   Response B: *I see. I am going to the library.*

7. Think of the L2 you have learned most recently. Do you mentally translate word for word from your L1 into your L2 before speaking or writing? Do you find it easier to learn "chunks" of language or to learn grammar rules so that you can construct your own sentences? Look at your textbook to see how much of the vocabulary is taught in "chunks" or "collocations" and how much is taught in lists. How are vocabulary lists organized – by part of speech, by topic, or otherwise? Is this organization helpful for your learning style, or would a different strategy be better?

8. Here are several more excerpts from language-learning histories written by college students. Discuss each in terms of concepts or principles you learned about in this chapter, such as the importance of learning contexts (e.g., classroom versus "real-world" settings), the distinction between learning and acquisition, negotiated meaning, or other concepts you think are relevant. How do these experiences compare with any you have had?

Excerpt 1 (Learner of Spanish, native speaker of English)

[N]othing helped me as much with my fluency as when my friend and I vacationed in Chile last year. The country has a low English-speaking population and my companion spoke no Spanish, so I was responsible for reading the signs and menus, and speaking with people for directions. Just walking through the airport gave me opportunies to interact with native speakers in ways I never had before – finding baggage claim, renting a car, and finding the hostel. Even though I had not spoken Spanish regularly in almost two years, after only a few days in Chile, I began to notice that I was thinking directly in Spanish and was no longer relying on English as my crutch.

Excerpt 2 (Learner of Swedish, native speaker of English)

When I studied abroad in Sweden for four months, I was given an amazing opportunity to learn a language in its native country … My hallmates … encouraged my Swedish and taught me slang terms and other necessary vocabulary, but the language that comes most naturally and comfortably to me now is what I used in daily life when I was alone or trying out my Swedish on unsuspecting clerks.

Excerpt 3 (Learner of English, native speaker of Arabic)

A few months after I graduated from high school I had the opportunity of a lifetime … I was issued a visa to come to the USA … my best friends at the time were English dictionary and grammar books; I have to say they didn't help me get that far away. I needed the type of language that would help me survive and get things done in the real world. A few weeks later I got a job as a cook in a fancy restaurant. I had to improve my listening comprehension to properly take orders from waiters, and to improve my reading speed to go quickly through the cook book. Basically, I had no time to write everything I hear, and definitely no time to analyze the perceived and produced English. I had to take the language as it is, with no further analysis.

9. Read the following excerpt written by a second language learner of English, and explain why this learner might be having trouble with English. Use the concepts of the monitor and the affective filter in your answer.

Ever since I first came to the US my English has been a problem. Even though I might seem to manipulate it very well while writing it; while talking it is when the main problem appears. Every time I open my mouth to say something, I just get stuck, and, therefore, I just try to make my ideas as short as I can. This problem prevents me from saying my entire ideas, or even from talking. For example, while being in a classroom, I just feel very uncomfortable to ask the teacher something that I did not understand for one or another reason. The knowing that my pronunciation is not very good discourages me. To think that I have to talk in front of other 200 persons, probably committing grammar and pronunciation mistakes makes me feel very small, kind of scared. However, I know that I can do it. After all, I have been in the US living by my own since last year. Lately, I have been interacting with my teachers more and more, even with my classmates. Nowadays, I feel that my English still needs A LOT of work (emphasis on the capital letters), but it is good enough to survive without being put apart from the society.

10. If you have studied a second language, what is something you've learned about the communicative norms of that language (what to say or not to say) that is related to pragmatics/social context (rather than grammar)? [If you have never studied a second language, give an example about English communicative norms in conversational interaction.]

i. Did you learn about that aspect of L2 pragmatics from a classroom or from interacting with a native speaker?
ii. Do you think it's important for that kind of L2 pragmatics to be taught in the classroom? Why or why not?

Bonus question: Briefly describe a strategy for how it could be taught.

PART II

LANGUAGE PROFILES

LANGUAGE PROFILE 1

Kabardian

1.1 Introduction

In this language profile, we will apply what we have learned in Chapters 2 and 3 on phonetics and phonology in order to examine the phonology of Kabardian, an endangered Northwest Caucasian language spoken predominantly in the Kabardino-Balkar republic in the Caucasus mountain region of southern Russia and in Turkey (see Figure LP1.1). We will focus here on a variety of Kabardian spoken in Turkey; the second author of this profile grew up speaking the language there.

According to *Ethnologue* (20th edn., online version), there are approximately 516,000 ethnic Kabardians; it is unknown how many are speakers. About one-third reside in Turkey following a mass exodus from Russia that occurred after a long period of war in the nineteenth century. Most of the remaining speakers still live in Russia, though smaller communities are found in other countries, such as Syria, Lebanon, Georgia, Germany, and the United States. While there is still a large Kabardian-speaking community in Russia, the survival of Kabardian outside of Russia is very uncertain. In Turkey, which is home to over 200,000 ethnic Kabardians, there is no formal instruction in Kabardian available to students, and the number of people speaking Kabardian at home has steadily declined due to several factors. These include intermarriage with non-Kabardians and movement of speakers into large cities where Kabardian is not perceived as a socioeconomically viable language. Turkish laws that actively discouraged the use of minority languages (e.g., prohibitions against the publication of materials in languages other than Turkish, a ban on non-Turkish surnames, and laws against the use of languages other than Turkish in schools) have only recently been liberalized. Knowledge of Kabardian is unusual in urban areas, and the prolonged period of decreased social value placed on Kabardian has led many Kabardian-speaking couples to speak only Turkish to their children. Most Kabardians in Turkey speak Turkish as a first language.

Kabardian belongs to the Circassian branch of the Northwest branch of the Caucasian language family. The Circassian branch also includes three other languages: Ubykh, a highly endangered language of Turkey, and the two closely related varieties of Abkhaz and Abaza. The Circassian languages are commonly divided into two branches: East Circassian, including Kabardian and the closely related Besleney, and West Circassian, including Adyghe and

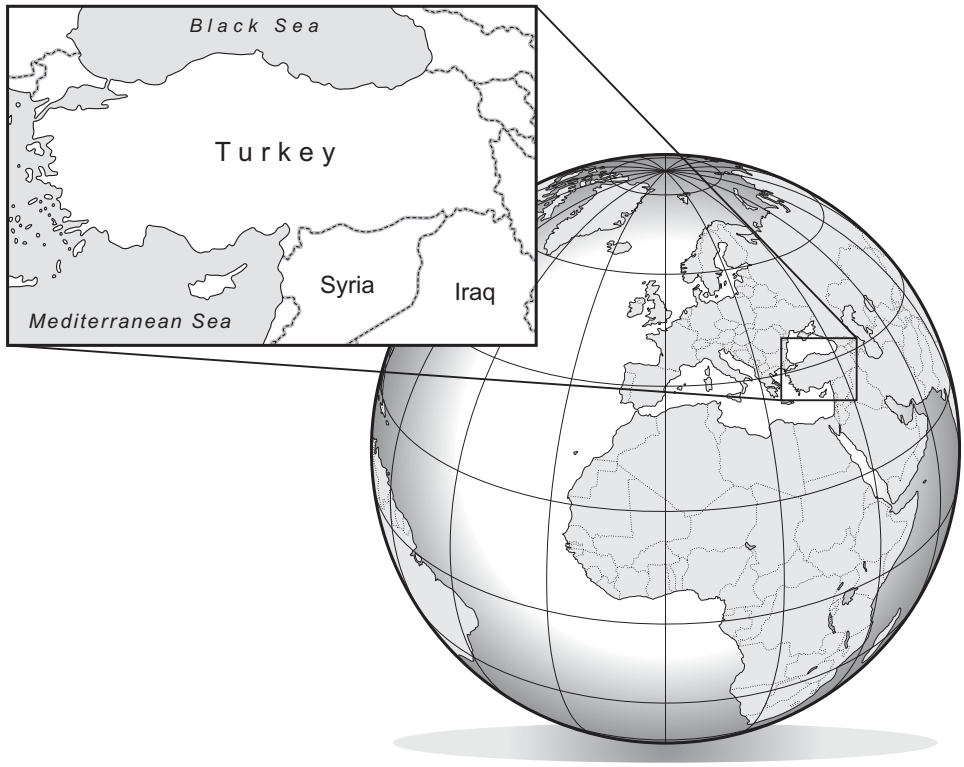


Figure LP1.1 Map of the Black Sea region

SIDEBAR LP1.1

Language Profile materials on the student resources website for *How Languages Work* are fun and varied; they are designed to help students explore the people and culture of the highlighted groups, in addition to the languages themselves. The online resources for the Kabardian Language Profile include sound files for all of the examples, a sample of some Kabardian music, and a PowerPoint with cultural information about the Circassians, the broader group to which the Kabardians belong.

its associated dialects. A family tree depicting the relationships between Northwest Caucasian languages is given in Figure LP1.2.

In this language profile we explore the phonological system of the variety of Kabardian spoken in Turkey. By employing the methodology introduced in Chapter 3, we will discover which sounds are separate phonemes and which are allophones of the same phoneme. We will begin the discussion with the consonants, and then move on to the vowels. In addition, we will briefly examine syllable structure and stress in Kabardian.

1.2 Consonants

1.2.1 Stops

Kabardian has aspirated and unaspirated voiceless stops, just as English and Hupa do. Recall from our discussion of English that aspirated and unaspirated stops are in complementary distribution, with the aspirated allophone occurring word-initially in words like *pin* and

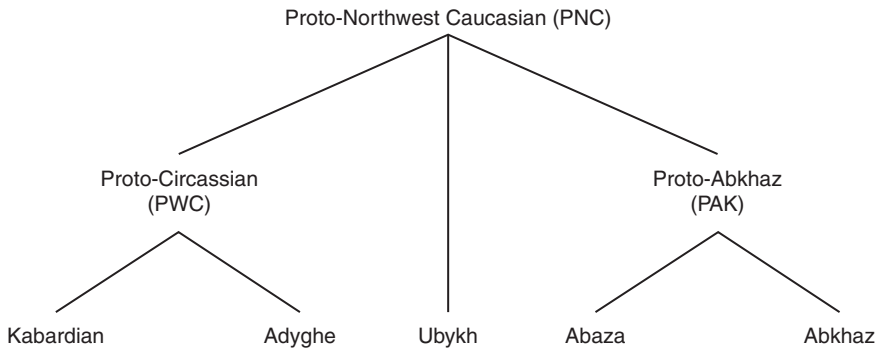


Figure LP1.2 The Northwest Caucasian family of languages

SIDEBAR LP1.2
See Section 3.2.2 for the discussion of aspirated and unaspirated stops in English and Hupa.

tab and the unaspirated allophone occurring after [s] in words like *spin* and *stab*. In Hupa, on the other hand, we discovered **minimal pairs** differentiated solely on the basis of whether a stop was aspirated or not and thus concluded that aspiration is a phonemic, or contrastive, property of stops in Hupa. The relationship among alveolar stops in these languages was represented as in Figure LP1.3.

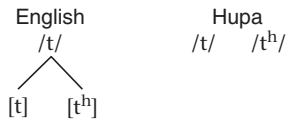


Figure LP1.3 Alveolar stops in English and Hupa

Let's now ask whether aspirated and unaspirated stops are separate phonemes in Kabardian, as in Hupa, or whether they are merely allophones, as in English. To tackle this question, consider the Kabardian words in (1).

(1)

[pɐ]	'many'
[pʰɐ]	'nose'
[pamɐ]	'stench'
[tamɐ]	'wing'
[tɐ]	'nut, seed'
[tən]	'sew'
[tʰən]	'give a present'
[tʰanɐ]	'young bull'
[tanɐ]	'silk'

Sound files for (1)

As these words show, Kabardian has minimal and near-minimal pairs that are differentiated only on the basis of aspiration. For example, the pair [pɐ] 'many' and [pʰɐ] 'nose' differ solely in whether the initial stop is aspirated or not. Likewise, the pair [tanɐ] 'silk' and [tʰanɐ] 'young bull' are distinguished by the aspiration, or lack thereof, on the initial consonant.

SIDEBAR LP1.3

Note that the vowel [ɐ] is virtually identical to the vowel found in English words like *but* and *sub*, which is often transcribed as the IPA symbol [ʌ] in descriptions of English.

SIDEBAR LP1.4

Ejective stops were introduced in Textbox 2.3. Examples are also found in Hupa (discussed in Chapter 3), and the Language Profiles on Nuuchahnulth (LP5), and Tsez (LP7).

SIDEBAR LP1.5

Refresh your memory of allophones and complementary distribution by looking back at Section 3.2.2.

As it turns out, there are two other series of stops in Kabardian. One of these is the **ejective** series and the other is the voiced series. Ejective stops are created by closing the glottis and compressing the air behind the stop's closure position. When the stop is released, it makes a characteristic popping sound. Voiced stops, which are familiar from English, contrast with voiceless stops in pairs such as *buy* and *pie* or *rankle* and *wrangle*. Ejective stops are one type of **glottalization**, the production of a glottal constriction in conjunction with one or more non-glottal segments.

Whenever there are four series of stops, we need to determine if they are all phonemic, or if the members of one series are allophones of another series. Let's investigate whether ejective stops and voiced stops in Kabardian are separate phonemes, allophones of each other, or allophones of the voiceless unaspirated and voiceless aspirated stops. The data in (2) will help determine the phonemic status of ejective and voiced stops in Kabardian.

Sound files for (2)

(2)		
	[pʼɐ]	'bed'
	[pɐ]	'many'
	[pʰaʃɐ]	'leader'
	[pʰɐ]	'nose'
	[pʼaʃʼɐ]	'thin'
	[paʃ]	'stick'
	[sabɐ]	'dust'
	[napʰɐ]	'face'
	[japʼɐ]	'their bed'
	[tʰanɐ]	'young bull'
	[tanɐ]	'silk'
	[tʰənʃ]	'easy, comfortable'
	[tʼə]	'ram'
	[tɐ]	'nut, seed'
	[tədɐ]	'very'
	[ʃatɐ]	'cream'
	[nadɐ]	'hollow, lacking a seed'
	[jatʼ]	'their ram'

There are several minimal and near-minimal triplets in (2), revealing a three-way contrast in stops at both the bilabial and the alveolar places of articulation. In word-initial position, the minimal triplet [pʼɐ] 'bed,' [pɐ] 'many,' and [pʰɐ] 'nose' shows that ejectives, voiceless unaspirated, and voiceless aspirated stops are contrastive at the bilabial place of articulation. Similarly, the near-minimal triplet [tʰənʃ] 'easy, comfortable,' [tʼə] 'ram,' and [tədɐ] 'very' shows the same three-way contrast for alveolars.

(3) Kabardian three-way contrasts in word-initial position

Sound files for (3)

[pʼ]	[pʼɐ]	‘bed’	[tʼ]	[tʼə]	‘ram’
[p]	[pɐ]	‘many’	[t]	[tədɐ]	‘very’
[pʰ]	[pʰɐ]	‘nose’	[tʰ]	[tʰənʃ]	‘easy, comfortable’

In word-medial position, there is also a three-way contrast at both places of articulation. However, the nature of the contrast differs somewhat from the contrast in word-initial position. In medial position, the contrast is between ejectives, aspirated stops, and voiced stops, as in the triplet [sabɐ] ‘dust,’ [napʰɐ] ‘face,’ and [japʼɐ] ‘their bed.’

(4) Kabardian three-way contrast in word-medial position

Sound files for (4)

[pʼ]	[japʼɐ]	‘their bed’
[b]	[sabɐ]	‘dust’
[pʰ]	[napʰɐ]	‘face’

Notice that, even though both voiced stops and voiceless unaspirated stops occur in Kabardian, there is no contrast between voiced and voiceless unaspirated stops in either initial or medial position. Voiceless unaspirated stops occur word-initially and voiced ones are found word-medially.

In fact, there is an alternation in the realization of one of the stops, depending on its position in the word. The first sound in the word [tɐ] ‘nut, seed’ is a voiceless unaspirated stop, whereas the same sound surfaces as a voiced stop when a prefix is added to form the word [na-dɐ] ‘hollow, lacking a seed.’ On the basis of this active alternation and the overall distribution of the two types of stops, we can conclude that voiceless unaspirated stops and voiced stops are in **complementary distribution** and are therefore **allophones** of the same phoneme. This phoneme contrasts with ejectives and voiceless aspirated stops, which each occur both word-initially and word-medially. The relationship between phonemes and allophones for the four types of bilabial stops in Kabardian can be represented as in Figure LP1.4 (analogous patterns are found for the alveolars).

Both voiceless aspirated stops and ejectives have a single allophone each, whereas the voiceless unaspirated stop has two allophones: a voiceless unaspirated one in initial position and a voiced one in medial position.

SIDEBAR LP1.6
For more on uvular sounds, see Section 2.6. Uvular consonants are also found in Nuuchahnulth (LP5), South Conchucos Quechua (LP6), and Tsez (LP7).

So far we have focused on only two places of articulation, bilabial and alveolar. Kabardian also has stops at other places of articulation. Two of these, velar stops and the glottal stop, are familiar from our discussion of English. In addition, Kabardian has **uvular** stops, which are produced by raising the back of the tongue up to touch the uvula.

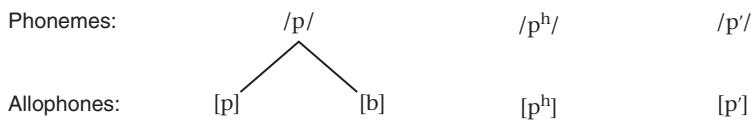


Figure LP1.4 Bilabial stops in Kabardian

STOP AND REFLECT LP1.1 **LEARN TO PRODUCE UVULAR CONSONANTS**

Try producing uvular consonants yourself. Start by articulating the syllable [ka] with a velar stop. Then retract your tongue for the consonant, making contact with the roof of the mouth as far back as you can. That will allow you to produce the syllable [qa], with a voiceless uvular stop in initial position. Say the two syllables multiple times in rapid succession: [ka qa ka qa ka qa]. Then do the same with the voiced sequence: [ga ɢa ga ɢa ga ɢa]. (The small cap [ɢ] is the symbol for a voiced uvular stop.) With repetition, you will begin to perceive the aural difference between the sounds.

Try doing the same exercise using the vowel [i]. You will find it is more difficult because of the very different tongue positions required for the consonant and vowel in the sequence. You may also observe that the vowel takes on different acoustic qualities as well.

Kabardian allows for further modifications to its stops in the form of **secondary articulations**, which involve an additional articulatory gesture overlapping with the primary stop constriction. The velar, uvular, and glottal stops have secondary articulations with lip rounding, as described in Textbox LP1.1.

TEXTBOX LP1.1 **SECONDARY LIP ROUNDING**

The closest English equivalent to stops with secondary lip rounding in Kabardian are clusters like [kw] in words like *quick* and *quiet*. These English clusters differ from the Kabardian rounded stops, however, in their degree of articulatory overlap between the stop and the rounding gestures. In English, the stop and the rounding are produced more or less in sequence, whereas in Kabardian, they are almost completely overlapped.

The other type of secondary articulation in Kabardian is palatalization, which can accompany velar stops. Palatalization involves raising the sides of the tongue simultaneously with the stop closure. Auditorily, palatalization sounds like a stop plus a palatal glide, as in the casual pronunciation of the name *Keanu*, where the combination of the initial [k] and the first vowel sound almost like the sequence [kj].

In addition to stops, Kabardian also has a series of affricates, occurring at the alveolar place of articulation; these affricates sound similar to clusters of an alveolar stop plus an alveolar fricative in English words such as *cats* and *kids*. The voiceless affricate also occurs as aspirated [tsʰ] and as an ejective [ts’].

The words in (5) illustrate the stop and affricate phonemes of Kabardian. It may be noted that none of the places of articulation behind the alveolar place of articulation makes a three-way contrast between voiceless unaspirated, voiceless aspirated, and ejective stops. In addition, Textbox LP1.2 explains some of the transcription conventions used for secondary articulations.

TEXTBOX LP1.2 **TRANSCRIPTION OF SECONDARY ARTICULATIONS**

Secondary articulations, such as labialization, glottalization, and palatalization, are seen as additional articulations overlapped with the primary consonant. In order to indicate their secondary status, they are written as superscripts:

[ʷ]	labialization
[ʼ]	glottalization
[ʲ]	palatalization

(5)

/p/	[padzɐ]	‘fly’
/pʰ/	[pʰasɐ]	‘early’
/pʼ/	[pʼɐ]	‘bed’
/t/	[tamɐ]	‘wing’
/tʰ/	[tʰanɐ]	‘young bull’
/tʼ/	[tʼatʼɐ]	‘watery’
/ts/	[tsanɐ]	‘naked’
/tsʰ/	[tsʰə]	‘animal hair’
/tsʼ/	[tsʼɐ]	‘name’
/gʲ/	[gʲanɐ]	‘shirt’
/kʲʼ/	[kʲʼapsɐ]	‘rope’
/kʷʰ/	[kʷʰɐbʒɐ]	‘gates’
/kʷʼ/	[kʷʼasɐ]	‘fugitive’
/qʰ/	[qʰɐ]	‘cemetery’
/qʷʰ/	[qʷʰafɐ]	‘boat’
/qʼ/	[qʼalɐ]	‘city’
/qʷʼ/	[qʷʼaʒɐ]	‘village’
/ʔ/	[səjʔɐ]	‘my hand’
/ʔʷ/	[ʔʷɐxʷ]	‘work’

Sound files for (5)

1.2.2 Fricatives

Kabardian also has a large number of fricative phonemes: eighteen in total. While many of these are found in English, including [f, v, s, z, ʃ, ʒ, h], others are not. Kabardian has a voiceless palatal fricative [ç], voiced and voiceless velar and uvular fricatives (some of which are accompanied by lip rounding), as well as a voiceless pharyngeal fricative [ħ] and a lateral fricative [ɬ].

SIDEBAR LP1.7
Pharyngeal consonants are also found in Akkadian (LP14).

SIDEBAR LP1.8
We saw another example of a voiceless lateral fricative [ɬ] in Chickasaw, in Section 3.1.

First, let’s look at the places of articulation found in the Kabardian fricative inventory. We are already familiar with velars and uvulars from our discussion of stops, but we have not yet encountered palatal fricatives, pharyngeal consonants, or lateral fricatives. The voiceless palatal fricative [ç] has an equivalent English sound in the initial consonant in some pronunciations of the words *human* and *hue*. Pharyngeal fricatives are produced by retracting the root of the tongue toward the back of the throat to create a constriction, which gives the auditory impression of a noisy [h] sound. We are already familiar with lateral approximants, such as [l], from our discussion of English. Lateral fricatives are produced by raising the middle of the tongue slightly while maintaining the closure with the tip of the tongue. The result will be a noisy fricative, which can be either voiced or not. The voiceless lateral fricative [ɬ] of Kabardian sounds quite similar to the allophone of [l] found after the aspirated stop in English words like *clay* and *plea*, where the aspiration noise overlaps with the [l].

Another interesting type of fricative in Kabardian is the ejective fricative. Kabardian has three: [fʼ, ʃʼ, ɬʼ]. These are quite rare in the languages of the world. In a cross-linguistic survey of phoneme inventories, Maddieson (1984) reports that ejective fricatives occur in only 10 out of 317 languages. Ejective fricatives are produced much like their stop counterparts, by

Sound files for (6)

compressing air in a chamber between the glottis and the oral constriction. In the case of fricatives, the oral constriction is not complete but is merely tight enough to produce noise. This requires a delicate balancing act, since the fricative opening allows the escape of some of the air that is necessary to create the pressure increase for the ejective's characteristic release burst.

Examples of words illustrating the fricatives of Kabardian appear in (6).

(6)

/v/	[vaqʼɐ]	'shoe'
/f/	[fadɐ]	'drink'
/fʼ/	[fʼaɬɐ]	'hoe'
/z/	[zawɐ]	'fight'
/s/	[sabɐ]	'dust'
/ɬ/	[ɬaqʷʼɐ]	'foot'
/ɬʼ/	[ɬʼɐ]	'dead'
/ʃ/	[ʃatʰɐ]	'cream'
/ʒ/	[ʒan]	'bright'
/ʃʼ/	[ʃʼalɐ]	'young'
/ʒ/	[ʒawɐ]	'umbrella'
/ç/	[çamɐ]	'foreign'
/xʷ/	[xʷabɐ]	'warm'
/ɣ/	[ɣən]	'powder'
/ɣʷ/	[taɣʷɐ]	'good'
/ʁ/	[ʁatçɐ]	'spring'
/ʁʷ/	[ʁʷazɐ]	'target'
/χ/	[χarzənɐ]	'good'
/χʷ/	[χʷapsɐ]	'envy'
/ħ /	[ħadɐ]	'corpse'
/h/	[pʼɐha]	'beds'

STOP AND REFLECT LP1.2 **TRY OUT KABARDIAN FRICATIVES**

Listen to the sound files of the words in (6) available on the *How Languages Work* website and then try articulating each word yourself, paying special attention to the fricatives. Which are easier for you to pronounce and which more difficult? Why?

1.2.3 Sonorants

The remaining Kabardian consonant phonemes are also found in English. Kabardian has two nasals [m, n], a palatal approximant [j], a labial-velar approximant [w], and a lateral approximant [l]. It also has a tap [ɾ], which does not occur word-initially and is often realized with some noise, particularly when devoiced in final position. The tap is grouped here with the sonorants because in Kabardian it shares phonological behavior with the other sonorants, suggesting that it is part of the sonorant natural class in this language. Words exemplifying [m, n, j, l, ɾ] appear in (7).

TABLE LP1.1 The consonants of Turkish Kabardian

	Labial	Denti-alveolar	Palato-alveolar	Palatal	Palatalized velar	Velar	Uvular	Pharyngeal	Laryngeal
Stops	p p^h p'	t t^h t'			k^j $k^{j\prime}$ g^j	k^w k^{wh} $k^{w\prime}$	q^h q' q^w q^{wh} $q^{w\prime}$		ʔ $ʔ^w$
Affricates		ts ts^h ts'							
Fricatives	f f' v	s z	ʃ ʃ' ʒ	ç		x^w ɣ $ɣ^w$	χ $χ^w$ ʁ $ʁ^w$	ħ	h
Nasals	m	n							
Laterals		ɬ ɬ' l							
Tap		ɾ							
Glides	(w)			j		w			

(7)

Sound files for (7)

/m/	[mazɐ]	'moon'
/n/	[nap^{h}ɐ]	'face'
/j/	[jat'ɐ]	'mud'
/w/	[wasɐ]	'price'
/l/	[lalɐ]	'very soft'
/ɾ/	[taɾij]	'satin'

1.2.4 Summary of Kabardian Consonants

Table LP1.1 summarizes the consonant phonemes found in the variety of Kabardian spoken in Turkey. There are a total of forty-five consonants. This far exceeds the average number of consonants found in the world's languages, which is twenty-one according to Maddieson's survey of 317 languages. The Kabardian inventory also dwarfs the twenty-five consonants found in American English.

1.3 Vowels

On the surface, Kabardian seems to have many different vowels, just like English. The words in (8) illustrate some of the vowel qualities found in Kabardian.

(8)

Sound files for (8)

[panɐ]	'thorn'
[pɐn]	'coffin'
[pən]	'offspring, kids'
[jaʒɐ]	'their mouth'
[jaʒə]	'their wind'
[lɐʒa]	'work (past interrogative)'
[pamɐ]	'stench'
[p^{h}ɐbʒ]	'equal'
[məbə]	'this'
[pej]	'rich'

[pij]	‘enemy’
[pow]	‘stable’
[pzuw]	‘fish’
[psow]	‘alive’
[pʰejʒ]	‘correct’
[fʼej]	‘filth’
[pʰaj]	‘share’
[nanuw]	‘kid’
[fow]	‘honey’
[ʃuχʷ]	‘male horse’
[ʔʷoxʷ]	‘work’
[maxʷɐ]	‘day’
[taɣʷɐ]	‘good’
[toʁʷ]	‘thief’
[ʃʼuʔʷ]	‘button’

In the first six words, there are two near-minimal triplets, demonstrating the phonemic status of the three vowels [a, ɐ, ə]. In the remaining forms, four additional vowel qualities [i, e, o, u] emerge. These vowels, however, are limited in the contexts in which they occur. The two back rounded vowels [o, u] occur before rounded consonants, either the labial-velar glide [w] or fricatives associated with a secondary rounding articulation. The two front vowels [i, e], on the other hand, only occur before the palatal glide [j] (see Sidebar LP1.9). This distribution suggests that [o, u, i, e] are allophones of other phonemes. The question then becomes which pairs of vowels belong together as allophones of the same phoneme.

SIDEBAR LP1.9

It should be noted that both of the processes differentiating the vowel pairs are phonetically natural instances of articulatory overlap between adjacent sounds. Lip rounding from a following rounded consonant spreads leftward onto the preceding vowel, and the high front tongue body position associated with /j/ triggers fronting of the preceding vowel.

To answer this question, we first observe that the low vowel [a] occurs in the widest range of environments: before [j], before rounded consonants, as well as in the same environments in which [ɐ] and [ə] also occur. We can thus conclude that [a] has no other allophones.

This leaves the six vowels [i, e, u, o, ɐ, ə], which can be grouped into three groups of two, according to the contexts in which they occur. The first two occur only before [j], the next two occur only before rounded consonants, and the last two occur in contexts other than those in which the first four vowels occur, that is, they occur elsewhere. The complication in determining allophonic relationships here lies in the fact that there are two vowels occurring in each of the three contexts, as (9) shows.

(9)

Before /j/	Before rounded consonants	Elsewhere
i	u	ə
e	o	ɐ

This means that [ə] is in complementary distribution with not only both [u] and [i] but also [o] and [e] (as [ə] never occurs before /j/ or rounded consonants). Likewise, [ɐ] is in complementary distribution with not only [o] and [e] but also [u] and [i]. The question is which

vowels stem from the same phoneme and which ones are linked to a different phoneme. Are [u] and [i], or [e] and [o], allophones of [ə]? Are [u] and [i], or [e] and [o], allophones of [ɐ]?

In fact, there are other possible groupings of vowels that maintain the complementary distributions. For example, [u] and [e] could be allophones of [ə], and [o] and [i] could be allophones of [ɐ]. Alternatively, [i] and [o] could be allophones of [ə], and [u] and [e] could be allophones of [ɐ]. To determine the correct pairings, we need to apply the notion of **phonetic similarity** that must be true of allophones. In order to be allophones, not only must two or more sounds be in complementary distribution, they also must be phonetically similar to each other.

To assess phonetic similarity in the case of Kabardian vowels, it is useful to draw a chart depicting the location of vowels in the Kabardian vowel space. This chart is given in (10).

(10)

	Front	Central	Back
High	i		u
Mid	e	ə	o
Mid-low		ɐ	
Low		a	

We have determined that [i] and [u] are allophones of one of the central vowels, and that [e] and [o] are allophones of another. Initially, one might be tempted to group [a] with [ə] and [o], since they are all mid vowels. However, this would force us to assume that the mid-low vowel /ɐ/ has the phonetically much higher vowel allophones of [i] and [u], which would violate the requirement that allophones be phonetically similar to each other. Instead, we should group the higher of the vowel pairs, [i] and [u], with the highest of the mid vowels, [ə], as this is phonetically more similar to the high vowels than is [ɐ]. Similarly, the front and the back rounded vowels in Kabardian that are most similar phonetically to [ɐ] are [e] and [o], as these are the lower of the two pairs, and [ɐ] is lower than [ə].

We can thus conclude that [ɐ], [e], and [o] are allophones of the same phoneme, whose base form is /ɐ/. This sound is the base phoneme, since it occurs in a wider range of contexts than the other two allophones. This leaves /i/ and /u/ as allophones of the basic phoneme [a], which may be treated as basic due to its wider distribution compared to the other two variants. The resulting relationship between phonemes and allophones for Kabardian vowels is shown in Figure LP1.5.

Much more could be said about Kabardian vowels. For example, there are other vowel allophones occurring in various consonantal contexts beyond those we have considered here. Furthermore, the number of vowel phonemes in Kabardian has been a subject of intense debate among phonologists for over fifty years. Analyses of the vowel system have ranged from positing three underlying vowel phonemes, as in the account adopted here

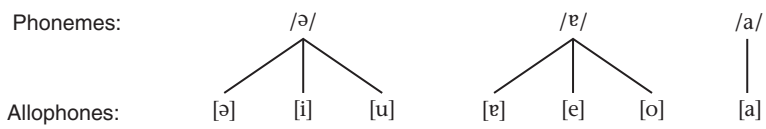


Figure LP1.5 Kabardian vowel phonemes and their allophones

based on traditional Russian sources, to assuming only two vowel phonemes, or even a single vowel.

1.4 Syllable Structure

Kabardian allows a variety of syllable structures ranging from simple to complex. (For a review of terminology related to syllable structure, see Textbox LP1.3.) The smallest possible syllable consists of a single vowel as in the first syllable of the word *a.nɐ* 'mother.' Closed syllables are quite common, e.g., *pɐn* 'coffin' and *ʃʼəb* 'back.' Consonant clusters are also widely attested, both in syllable onset and in syllable coda position, e.g., *tχʷɐ* 'butter,' *psə* 'water,' *pʃtʰə* 'boil' (milk), *fəzijpɬʼ* 'five women,' and *məɬkʷ* 'property.'

TEXTBOX LP1.3 **SYLLABLE TERMINOLOGY**

The syllable was introduced in Section 2.7.1 The core terminology is reviewed below.

Onset:	the consonant(s) preceding the vowel
Coda:	the consonant(s) following the vowel
Rhyme:	the vowel and coda together, opposed to the onset
Closed syllable:	syllable with a coda ("closed off" by one or more consonants)
Open syllable:	syllable without a coda

1.4.1 Stress

Let's now turn to the positioning of stress in Kabardian words. Recall from Chapter 2 on phonetics that there are pairs of words in English that are distinguished only on the basis of where stress falls. For example, the noun *import* has stress on the first syllable, whereas the verb *import* has stress on the second syllable. The words in (11) illustrate the location of stress in several Kabardian words. Syllable boundaries are indicated using the IPA symbol for syllable breaks [.] to facilitate examination of the patterns.

(11)

[pʰa.sɐ]	'early'
[ˈsa.bɐ]	'dust'
[ˈmə.ʃɐ]	'bear'
[ʔɐ.ˈda.qʼɐ]	'rooster'
[χɐɾ.ˈzə.nɐ]	'good'
[mə.ʔɐ.ˈɾə.sɐ]	'apple'

Sound files for (11)

There are no minimal stress pairs in the Kabardian data in (11). However, when examining stress in a language, it is useful to look not only for minimal stress pairs but also for consistent patterns in the location of stress. For example, in many languages, such as Finnish or Czech, stress falls on the initial syllable of words. In other languages, such as Turkish, stress falls on the final syllable. In the Kabardian data in (11), stress does not consistently fall on

either the initial syllable or the final syllable. However, we can still make a generalization about the words: stress falls on the second-to-last syllable. The second-to-last syllable is also known as the **penultimate syllable** (see Textbox LP1.4). Penultimate stress is quite common in languages of the world. For example, it is found in Polish, Mohawk, and Albanian.

TEXTBOX LP1.4 **SYLLABLE TERMINOLOGY FOR STRESS PATTERNS**

When discussing stress across different languages, the syllables at the beginning of the word are simply called the first, second, and third syllable. When referring to syllables near the end of the word, we use the terms **ultimate syllable** (for the last syllable in the word, or the ultima), **penultimate syllable** (for the second-to-last syllable in the word, or the penult), and **antepenultimate syllable** (for the syllable preceding the penult, sometimes called the antepenult).

Now let's look at several more Kabardian words in (12) to see if they conform to the penultimate stress pattern.

(12) [sɐ.ˈbən] 'soap'
[səj.ˈʃʼəb] 'my back'
[sa.ˈbij] 'baby'
[na.ˈnuw] 'kid'

Sound files for (12)

The words in (12) all have final (or ultimate) stress, unlike those in (11), which had penultimate stress. At this point, there are two different ways we could proceed: we could give up hope of finding any consistent generalization about the location of stress and merely say that each word must be memorized as having either final or penultimate stress; or alternatively, we could compare the two groups of words to see if there is any difference in the shape of the words that might account for their different stress patterns. You can do this yourself; see Stop and Reflect LP1.3.

STOP AND REFLECT LP1.3 **CAN YOU FIND THE STRESS PATTERN?**

Before reading further, take the time to compare the words in (11) and (12) yourself. Can you identify what phonological properties of the words determine whether the stress is ultimate or penultimate?

Your exploration should have revealed that there is such a difference. All of the words in (12), which have final stress, end in a consonant, whereas those in (11), which have penultimate stress, end in a vowel. We can thus see that stress-assignment depends upon syllable structure.

TEXTBOX LP1.5 **SYLLABLE WEIGHT**

Syllable weight is a reflection of the complexity and "bulk" of syllables. **Heavy syllables** typically have either a long vowel, a diphthong, or consonants in a coda, depending on the criteria in a particular language. **Light syllables** typically end in a short vowel. Interestingly, complexity in onset consonants tends not to affect the weight of syllables.

This is an instance of **weight-sensitive stress**, since the weight or complexity of syllables influences the stress pattern. Textbox LP1.5 gives a brief explanation of syllable weight. In Kabardian, final syllables attract stress if they are complex, or heavy; a syllable-final coda consonant makes a syllable heavy. If the final syllable is light and contains a vowel without a coda consonant, stress shifts leftward onto the penultimate syllable. Weight-sensitive stress systems are common in the languages of the world (see Textbox LP1.6 for another example). Weight-sensitive stress systems, as well as weight-insensitive stress systems, in which stress predictably falls on a certain syllable regardless of syllable weight, together constitute the class of stress patterns with phonologically predictable – as opposed to phonemic – stress.

TEXTBOX LP1.6 **ANOTHER WEIGHT-SENSITIVE STRESS SYSTEM: LATIN**

Another language that famously has weight-sensitive stress is Latin. In classical Latin, the penultimate is stressed only if it is heavy; otherwise, the stress is shifted leftward to the antepenult (if there is one). Thus the word *au.'gus.tus* 'August,' has stress on the penult, which is a heavy syllable due to the final /s/. This can be compared with '*ca.pi.tis* 'head (genitive singular),' where the penult is light and stress is on the antepenult.

CHAPTER SUMMARY

In this chapter we have surveyed certain basic features of the Kabardian phonological system, including the consonant and vowel phonemes, allophones of these phonemes, syllable structure, and stress. Kabardian phonology is of typological interest for a variety of reasons, including its small vowel and large consonant inventories, which include a twelve-way contrast among voiceless fricatives, and contrasts of ejective and non-ejective fricatives at three places of articulation. There are many additional fascinating aspects of Kabardian phonology – not to mention Kabardian morphology and syntax – that we have left untouched. Many published sources on Kabardian are written in Russian; for more information on Kabardian, the interested reader is referred to the Suggestions for Further Reading, which contains references written in English.

SUGGESTIONS FOR FURTHER READING

Applebaum, **Ayla Ayda Bozkurt**. 2013. "Prosody and grammar in Kabardian." Ph.D. dissertation, University of California, Santa Barbara, Alexandria Digital Research Library.

This dissertation provides a systematic phonetic analysis of the basic entities of Kabardian prosodic units above the word. This dissertation is the first extensive description of Kabardian prosody and grammar based on natural data.

Bullough, **Oliver**. 2010. *Let our fame be great: Journeys among the defiant people of the Caucasus*. New York: Basic Books.

This book explores the incredible cultural crossroads of the Caucasus, where Eastern Europe, Central Asia, Turkey, and the Middle East meet. The book is filled with a compelling mix of travel, archival research, and oral history about genocide, tribal sparring, and persecution.

Colarusso, **John**. 1992. *The Kabardian language*. University of Calgary Press.

This book provides an overview of key features of the Kabardian language, including the phonology, morphology, and syntax.

Colarusso, **John**, ed. and trans. 2002. *Nart Sagas from the Caucasus: Myths and legends from the Circassians, Abazas, Abkhaz, and Ubykhs*. Princeton, NJ: Princeton University Press.

The Nart sagas are to the Caucasus what Greek mythology is to Western civilization. This book presents a wide selection of fascinating colorful tales from four related peoples of the ancient culture of the Caucasus.

Colarusso, **John**. 2006. *Kabardian (East Circassian)*. Munich: LINCOM Europa.

This book is a slightly updated version of Colarusso's (1992) grammar.

Gordon, **Matthew**, and **Ayla Applebaum**. 2006. "Phonetic structures of Turkish Kabardian." *Journal of the International Phonetic Association* **36**.2: 159–186.

This paper provides a detailed phonetic analysis of many features of Kabardian sounds including the vowels, the ejective fricatives, and the stops.

Gordon, **Matthew**, and **Ayla Applebaum**. 2010. "Acoustic correlates of stress in Turkish Kabardian." *Journal of the International Phonetic Association* **40**.1: 35–58.

This paper is a study of the phonetics of the Kabardian stress system.

Hunt, **David**. 2012. *Legends of the Caucasus*. London: Saqi Books.

This book includes 100 legends from the fourteen ethnic groups in the Caucasus. The legends portray the way of life of these vanishing tribes.

EXERCISES

1. Natural classes

Examine the following sets of sounds. Indicate whether they form natural classes and, if so, how each class is defined in terms of features.

a. q^h, q', q^{wh}, $q^{w'}$, χ, $χ^w$, ʁ, $ʁ^w$
b. ɬ', ɬ, l
c. p, p^h
d. ʃ, ʒ
e. p', t', $k^{j'}$, $k^{w'}$, q', $q^{w'}$
f. f, s, ʃ, ç, x^w, χ, $χ^w$, ħ, h
g. v, m, w
h. k^w, k^{wh}, q^{wh}, $q^{w'}$, x^w, $ɣ^w$, $ʔ^w$, $χ^w$, $ʁ^w$, w

2. Kabardian stress

Based on the description of stress in this language profile, add marks to the following words to indicate where stress falls:

a.	səjʔ^{w}ox^w	'my work'
b.	japzuw	'his fish'
c.	mʁzaʃ'	'new moon'
d.	t^{w}anʁ	'young bull'
e.	k^{wh}abʒʁ	'gates'
f.	x^{w}abʁ	'warm'
g.	pəsəm	'guest'
h.	pəsəməf'	'good guest'
i.	səɪʃ	'my horse'

3. **Allophones**
Based on the discussion of allophones in this language profile, convert the following phonemic transcriptions to phonetic ones:

a.	/paʒɐ/	'fox'
b.	/ʃətəf'/	'good donkey'
c.	/səsɐj/	'mine'
d.	/atɐw/	'father (predicative)'
e.	/ts'əkʷ/	'small'
f.	/pʰɐjʒ/	'truth'
g.	/ataqɐ/	'rooster'
h.	/tʰən/	'give'
i.	/satʰəw/	'how'

4. **Laryngeal alternations**
In Kabardian the prefixes meaning 'I' and 'you (plural)' have different allomorphs exemplified by the following forms. Write rules accounting for the alternations.

SIDEBAR LP1.10
See Chapter 3 to refresh your memory on writing phonological rules.

a.	zdas	'I sewed it'
b.	vdas	'You (pl) sewed it'
c.	zbʒas	'I counted it'
d.	vbʒas	'You (pl) counted it'
e.	sowʃç	'I eat it (habitual)'
f.	fowʃç	'You (pl) eat it (habitual)'
g.	fɬɐɣʷas	'You (pl) saw it'
h.	sɬɐɣʷas	'I saw it'
i.	stças	'I wrote it'
j.	ftças	'You (pl) wrote it'
k.	s'p'as	'I educated him'
l.	f'p'as	'You (pl) educated him'

5. **Vowel ~ zero alternations**
Kabardian has many words in which there is an alternation between a vowel and zero, as the forms below illustrate. Describe the conditions governing this alternation and write a rule capturing the alternation.

a.	ʃə	'horse'
b.	t'ə	'ram'
c.	zəʃ	'one horse'
d.	zət'	'one ram'
e.	fɐ	'skin'
f.	zəfɐ	'one skin'
g.	ʃɐ	'bullet'
h.	zəʃɐ	'one bullet'
i.	ʒə	'old'
j.	ʃəʒ	'old horse'
k.	f'ə	'good'
l.	ʃəf'	'good horse'
m.	ʃəfɐ	'horse skin'
n.	ɬ'ə	'man'
o.	ɬ'əf'	'good man'
p.	sabɐ	'dust'
q.	sɐbɐf'	'good dust'
r.	panɐ	'thorn'
s.	pɐnɐf'	'good thorn'

LANGUAGE PROFILE 2

Goemai

2.1 Introduction

Goemai (pronounced /gə̀mâi/) is a West Chadic language of Nigeria. As such, it is a member of the large Afroasiatic language family and thus distantly related to Semitic languages, such as Arabic and Hebrew. Within Afroasiatic, Goemai belongs to the Chadic branch, more specifically, to the Southern Angas-Goemai group within the West Chadic subbranch. Figure LP2.1 summarizes the genealogical position of Goemai within Afroasiatic.

The language is spoken by approximately 150,000 speakers in the lowlands of Central Nigeria, just south of the Jos Plateau and north of the River Benue. The map in Figure LP2.2 gives an indication of the geographical location of the Goemai, showing the three Goemai dialect areas, Duut (including East Ankwe), Dorok, and Kwo.

Over the last century, another Chadic language, Hausa, has emerged as a major language in this area. The use of Hausa is slowly replacing the use of many of the minor languages in the area, including Goemai. Today, most Goemai use Hausa in formal settings (e.g., in contexts involving administration, religion, or education) and when interacting with their many non-Goemai neighbors. Members of the younger generation tend to speak Hausa even to each other; and many children grow up with Hausa as their first, and often only, language.

2.2 Basic Typological Overview

Goemai has a fairly complex phonology. One of the most striking features is a three-way distinction between voiceless aspirated, voiceless non-aspirated, and voiced stops and fricatives. It also has a series of **implosive** stops at the labial and alveolar places of articulation (see Textbox LP2.1). The language contrasts long and short vowels, and four tones (high, low, falling, rising). Table LP2.1 illustrates some (near-) minimal pairs: (1) exemplifies alveolar stops and implosives, (2) vowel length contrasts, and (3) high and low tones.

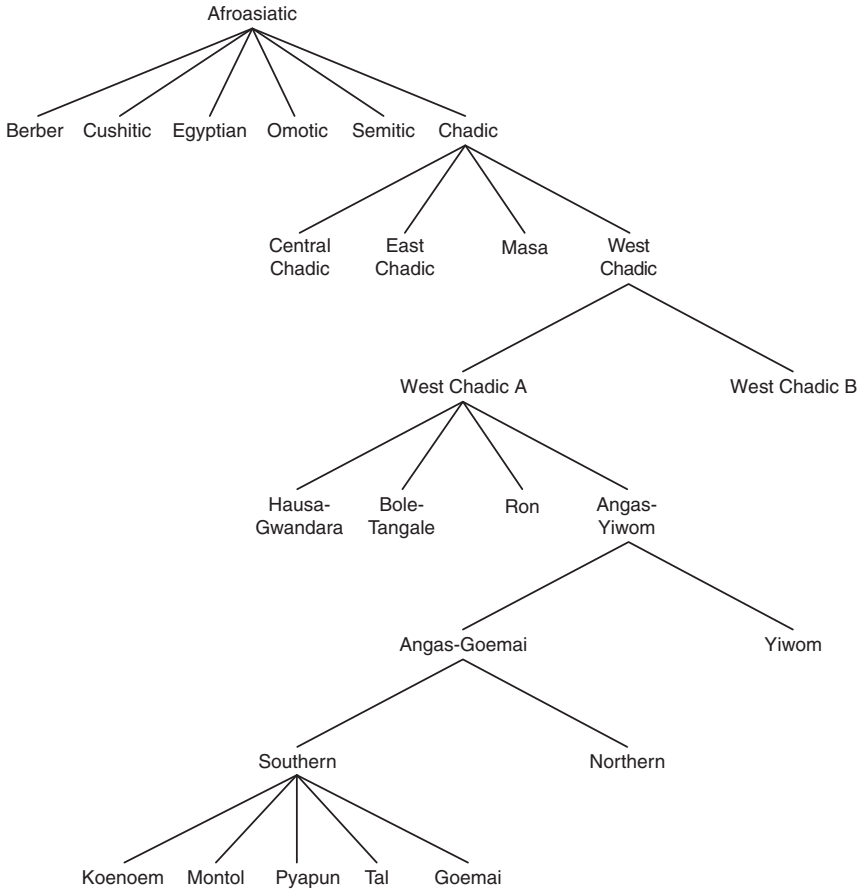


Figure LP2.1 Goemai language family tree

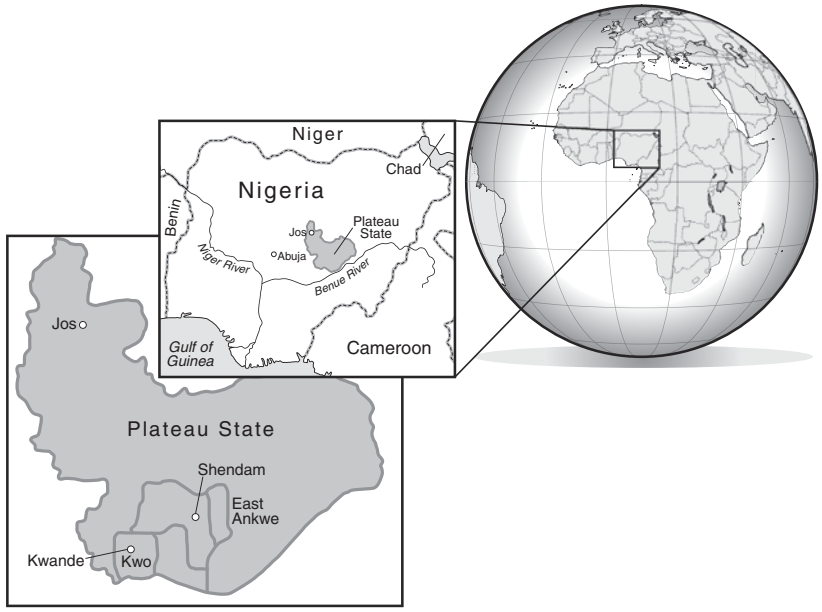


Figure LP2.2 Map: Nigeria, Plateau State, and the Goemai area (based on Monday 1989; Kurungtiem 1991)

TEXTBOX LP2.1 **IMPLOSIVE STOPS**

Implosive stops are articulated by simultaneously creating the stop in the supralaryngeal cavity and tightly closing the vocal folds. The glottis is then lowered, expanding the pharynx and creating a vacuum, so that when the supralaryngeal closure is released the air rushes inwards, giving the stop a characteristic sound. Implosives are found in a number of languages, including some regional dialects of American English. Implosives are transcribed in the IPA with a hook at the top of the symbol, i.e., [ɓ, ɗ, ɠ]. In the Goemai practical orthography, the two implosives are written with a following apostrophe: b', d'.

SIDEBAR LP2.1
The online resources for this language profile include sound files for all examples, photos of Goemai speakers who serve as consultants to the author, a PowerPoint with a biography of a Goemai elder, and a glossed transcript of a short conversational discourse about a Goemai proverb, with audio files.

SIDEBAR LP2.2
For more on tones and tone languages, see the Manange Language Profile, Textbox LP3.4.

The Goemai people have a way of writing their language called a **practical orthography**, which will be used here. Note that *p, t, k, f, s*, and *sh* indicate aspirated obstruents, *p', t', k', f', s'*, and *sh'* indicate non-aspirated obstruents and *b'* and *d'* indicate the two implosives. For the vowels, *oe* indicates [ə], *u̲* indicates [ʉ], and *o̲* indicates [ɔ]. Double letters indicate long vowels, and tones are placed over vowels by means of accents, e.g., *é* indicates a high tone, *è* a low tone, *ê* a falling tone, and *ě* a rising tone.

Goemai has three open word classes, that is, word classes that easily incorporate new members: nouns, verbs, and adverbs. Notice that Goemai does not have any simple lexical adjectives. While Goemai can use derivational morphology to turn verbs and adverbs into adjectival modifiers, there is no word class of underived adjectives.

TEXTBOX LP2.2 **IDEOPHONES**

Goemai has about eighty **ideophones**, words that convey vivid images of properties (such as color or age), spatial orientations (such as posture or disposition), or bodily processes (such as belching or yawning). Morphologically, the ideophones are often characterized through **reduplication**, e.g., *sòesák* 'snow white' or *wùwák* 'bright red.' Ideophones have found their way into other word classes, too. For example, many nouns that denote birds reflect the characteristic sound of the bird, e.g., *gòekúk* 'owl, cuckoo,' *kòerè* 'crow,' or *t'íngìlíít* 'hornbill.'

TABLE LP2.1 (Near) minimal pairs

(1)	*tàng* [tʰàŋ]	*t'áng* [táŋ]	*dáng* [dáŋ]	*d'àng* [ɗàŋ]
	'search'	'bat'	'tail'	'lizard'
(2)	*hàm* [hàm]	*hààm* [hà:m]		
	'carve'	'water'		
(3)	*háás* [há:s]	*hààs* [hà:s]		
	'flour'	'egg'		

SIDEBAR LP2.3
Open versus closed word classes were introduced in Section 5.2.

Goemai also has closed word classes, such as pronouns, various noun-phrase modifiers, ideophones, prepositions, particles, and conjunctions (see Textbox LP2.2). In most cases, a word occurs in one word class only. Thus, it is uncommon for a word to occur interchangeably as a noun and as a verb, as in English *The table is big* and *He tabled the motion*. Furthermore, there are only a few Goemai derivational morphemes that change the lexical class of words.

As we will see in more detail below, nouns always function as heads of noun phrases and are usually morphologically unmarked. Although Goemai grammar marks number (singular, plural) and classifies nouns based on the posture of referents (see Textbox LP2.3), these categories are – with very few exceptions – not marked on the noun itself.

Verbs in Goemai always function as heads of predicates and are also generally unmarked. There are only two exceptions to this generalization, as will be shown later: about 10 percent of the verbal lexicon distinguishes number; and some subject pronouns can be marked on the verb. Other categories, such as tense or negation, are usually not marked on the verb either but are expressed through particles.

TEXTBOX LP2.3 **POSTURAL CLASSES**

Goemai distinguishes four postural classes (hanging/moving, sitting, standing, and lying) plus one residual class (for all objects that do not fall into one of the postural classes). This classification is based on the typical "posture" of objects. For example, "sitting" objects are all objects that are typically located on their base and that have a usage space. This includes all types of containers (cups, pots, bottles, baskets, etc.), as well as traditional chairs or woven mats that protect food from flies. This class also includes novel items such as telephones, television sets, radios, and fans.

A traditional Goemai chair

A traditional woven mat

The brief description above illustrates that Goemai is a predominantly **isolating** language. That is, there is little morphology, and words are usually unmarked and monomorphemic (i.e., they consist of a single morpheme only). While there is some nominal and verbal morphology in Goemai, it plays a lesser role than in other languages. Because of its largely isolating nature, Goemai grammar relies heavily on syntax. The importance of syntax over morphology can be seen in the structure of its phrases as well as in its grammatical relations, as explained below.

2.3 Syntax

Chapter 6 has shown in some detail how languages combine words to form phrases and sentences. This language profile explores some of these syntactic phenomena: the formation of noun phrases and ways of expressing grammatical relations.

2.3.1 Noun Phrases

Goemai is one of many languages that show clear evidence for the existence of noun phrases. The Goemai noun phrase (NP) consists of an obligatory head noun and optional modifiers or dependents. These dependents tell us something about the head noun: some help us to identify the referent (e.g., the demonstratives point to a referent in the physical environment, and the articles specify whether or not a referent has been mentioned in the previous discourse), while others offer further descriptive information (e.g., the adjectival modifiers describe a quality of the referent, such as its color or size). All dependents occur in a fixed order, with some of them preceding the head noun (i.e., occurring pre-head) and some following (i.e., occurring post-head). Table LP2.2 provides the template of the Goemai noun phrase; it summarizes the order of selected pre-head and post-head dependents relative to the head noun and to each other. Examples (1) to (4) illustrate the depicted order using data from natural discourse.

Sound file for (1)

(1)

mán	*yì=kùt*	[*ńdòe=d'u̲òe*	*gòe-k'ém*]$_{NP}$	*bá*
do.NEG	2SG=talk	SPEC=voice	SG-different	NEG
		specific.article=HEAD	adjectival.modifier	

'Don't speak [any other language]$_{NP}$!'

Sound file for (2)

(2)

[*mòe-jàpnúún*	*nóe*	*mòe-d'yén*]$_{NP}$
PL-sibling	1SG.POSS	PL-young
HEAD	possessive	adjectival.modifier

hèn	*là*	*páár*	*mu̲èp*,	*mu̲èp*	*mu̲én*
1SG	when/if	send	3PL.OBJ	3PL	go

'[My younger siblings]$_{NP}$ when I send them away (on errands), they go.'

Sound file for (3)

(3)

mòe=shìn	*uh*	*sh'ít*	*n-ní*	*b'ák*	*góe*
1PL=do	uh	work	with-it	PROX	in

[*yíl*	*mén*	*ńd'éńnòe=hòk*]$_{NP}$	*p'ùùr*
land	1PL.POSS	PROX.DEM=DEF	a.lot
HEAD	possessive	demonstrative=definite.article	

'We do, uh, a lot of work with it here in [the/this our land]$_{NP}$.'

Sound file for (4)

(4)

[*d'à*	*gòe-b'áng*	*ńd'éńnòe*]$_{NP}$=*hòe*
calabash	SG-red	PROX.DEM=exactly
HEAD	adjectival.modifier	demonstrative

'[This red calabash]$_{NP}$ exactly (…).' (See Textbox LP2.4 on calabashes.)

TABLE LP2.2 Template for the Goemai noun phrase

Pre-head dependent	Head	Post-head dependent			
specific-indefinite article	noun	possessive	adjectival modifier	demonstrative	definite article

TEXTBOX LP2.4 **CALABASHES**

Calabashes are plants whose mature fruits are harvested, dried, split lengthwise and then used as utensils – they come in all kinds of shapes and sizes: bottle-shaped (used for transporting drinks and medicine), spoon-shaped (used as cooking spoons), and bowl-shaped (used as vessels for drinking and eating, and as storage containers).

Calabash bowls

A Calabash tree

Heads and dependents can occur only in the order illustrated in Examples (1) to (4); any reordering would result in an ungrammatical utterance.

A noun phrase can consist of a head noun only, such as *néng* 'cow' in (5) but can never consist of a dependent element only. However, a dependent element can be turned into a head noun by means of the nominalizing prefixes *gòe-* (SG) or *mòe-* (PL). For example, the dependent demonstrative *ńd'éńnòe* 'this' never occurs without a head noun, as in (4). Its nominalized form, however, does occur as the head of a noun phrase, such as with *gòeńd'éńnòe* 'this one' in (5).

(5) Sound file for (5)

[*gòe-ńd'éńnòe*]$_{NP}$	*à*	[*néng*]$_{NP}$
SG-PROX.one	FOC	cow

'[This one]$_{NP}$ is [a COW]$_{NP.}$'

The head of a noun phrase can be either a noun, as in (5), or a pronoun, as in (6).

(6) Sound file for (6)

mu̲ép	*lá*	*kàt*	[*ní*]$_{NP}$
and.3PL	when/if	find	3SG.OBJ

'And when they find [him]$_{NP}$ (…).'

With regard to pronominal heads, Goemai displays one very interesting phenomenon. Cross-linguistically, pronouns tend to replace the entire noun phrase. This is also the most common pattern in Goemai. However, it is possible for a pronominal head to replace only the nominal head, and thus co-occur with noun-phrase dependents. Example (7) shows a pronoun co-occurring with the definite article.

(7) Sound file for (7)

mu̲èp	*lá*	*k'ààr*	[*ní=hók*]$_{NP}$
2PL	when/if	instruct	3SG.OBJ=DEF

'When they instruct [(the) her]$_{NP}$.'

Thus, the constituency test of cohesiveness does not apply in Goemai, so the properties of the noun phrase in Goemai are slightly different from those in English or other languages where a pronoun must replace all elements of the noun phrase.

SIDEBAR LP2.4
To review some potential types of evidence for the existence of the noun phrase in a given language, see Textbox 6.5.

An additional argument for the Goemai noun phrase is that noun-phrase elements always form a contiguous group, that is, they cannot be separated by other morphemes such as particles or adverbs. For example, the object noun phrase below is followed by a particle *yì* and an adverb *ńt'ìt* 'well.' It is not possible for either of them to occur anywhere within the noun phrase.

(8) Sound file for (8)

mòe=zèm	*dé*	*kówúròe*	*k'óeléng*	[*d'u̲òe*	*Gòemâi*]$_{NP}$	*yì*	*ńt'ìt.*
1PL=like	so.that	everyone	hear/smell	voice.of	Goemai	PART	well

'We want everyone to understand the Goemai language well.'

STOP AND REFLECT LP2.1

So far, we have provided the following syntactic arguments for the existence of the Goemai noun phrase: the fixed ordering of head and dependents, and their contiguity. The data below provide evidence for a morphological argument. What is it? For the answer, see Sidebar LP2.7.

Sound file for (9)

(9) [*là* *gòe-kyôklók=hók*]$_{NP}$
child.SG SG-small=DEF
'the small boy'

Sound File for (10)

(10) [*ńdòe=jáp* *mòe-b'àkpé*]$_{NP}$
SPEC=child.PL PL-disrespectful
'Some disrespectful children'

2.3.2 Grammatical Relations

SIDEBAR LP2.5

To refresh your memory of grammatical relations, see Section 6.3.

Like English, Goemai is a language where grammatical behavior is shared between the single core argument of an intransitive verb and the more agentive argument of a transitive verb. Thus Goemai, like English, has grammatical subjects that are distinct from objects.

Constituent order is the most obvious piece of evidence for distinguishing Goemai subjects from objects. Goemai constituent order is fixed in that subjects always precede the verb, while objects follow it. Example (11) illustrates the intransitive pattern, with the single core argument preceding the verb. Example (12) illustrates the transitive pattern, with the more agentive argument (i.e., the rabbit as opposed to the stone) being placed before the verb.

SIDEBAR LP2.6

The transitive pattern in (12) can be contrasted with patterns of argument alignment in Tsez and Bardi; see the Bardi Language Profile, Textbox LP8.3, for discussion.

Sound file for (11)

(11) *fu̲án* *swár*
rabbit laugh
'The rabbit laughed.'

Sound file for (12)

(12) *fu̲án* *máng* *p'áng*
rabbit take stone
'The rabbit took a stone.'

The noun phrase itself is not morphologically marked for its grammatical relation, that is, Goemai does not have any case marking. Pronouns, however, constitute a partial exception to this generalization. Goemai has both free and bound pronouns. The free pronouns are identical for all core arguments (i.e., for subjects and objects). But the bound forms can be used only for subjects, not for objects. Table LP2.3 lists the two sets of pronouns.

TABLE LP2.3 Personal pronouns

Category	Free pronouns (all core arguments)	Bound pronouns (subjects only)
I (1SG)	*hen*	*n=*
You (2SG.M)	*goe*	*goe=*
You (2SG.F)	*yoe ~ yi*	*yi=*
He, she, it (3SG)	*ni*	*ni= ~ Ø*
We (1PL)	*men*	*moe=*
You (2PL)	*gwen*	*gu=*
They (3PL)	*mu̲ep*	*mu̲ep= ~ u̲ep=*

SIDEBAR LP2.7
Answer to Stop and Reflect LP2.1: The morphological constituency test revealed in examples (9) and (10) is agreement: adjectival modifiers agree with the head noun. They have the prefix *gòe-* when the noun is singular and the prefix *mòe-* when the noun is plural. This indicates that the adjectival modifier and noun are grammatically linked; they are part of a single constituent.

The bound pronouns attach to the verb as **clitics**. They can occur with or without any overt noun phrase. Compare (13), where the clitic pronoun is the only morpheme that references the subject, with (14) and (15), which include subject noun phrases. In all cases, it is the subject that is marked on the verb, regardless of whether the verb is intransitive (as in 14), or transitive (as in 13 and 15). In contrast, the object argument is never marked on the verb.

Sound file for (13)

(13)

mòe=màn	*ní*	*b'ák*	*ńt'ît*	*bá*
1PL=know	3SG	PROX	well	NEG
SBJ=V	OBJ			

'We don't know it well here.'

Sound file for (14)

(14)

à	*nyégòefé*	[*mòe-gùrùm*	*mu̲ép*]	*mu̲èp=mu̲áráp*	*díp*
FOC	because	PL-person	3PL.POSS	3PL=die	all
		SBJ		SBJ=V	

'It is because all their people, they have died.'

Sound file for (15)

(15)

mèn	*mòe=nyàk*	*yí*	*bá*
1PL	1PL=hate	2SG	NEG
SBJ	SBJ=V	OBJ	

'We, we don't hate you.'

The discussion above has shown that there are three criteria that can be evoked to establish grammatical relations in Goemai: constituent order, pronominal form, and marking of arguments on the verb. While these three criteria clearly distinguish subjects from objects, sometimes core arguments are hard to identify, especially when all core arguments are

omitted from a clause. This phenomenon is illustrated in the second and third lines of example (16).

Sound file for (16)

(16)

[*là=ńdòe=gùrùm*]$_A$	*b'às*	[*là=ńdòe=shàt*	*gòe-kyôklók*]$_O$
little=SPEC=person	cut.off	little=SPEC=porridge	SG-small

póe	*yì*	*n-nt'í*
give	PART	DAT-son.of.rabbit

[*nt'í*]$_A$	*láp*	*yì*	*s'óe*
son.of.rabbit	receive	PTC	eat

'Some poor person cut off a little bit of porridge, so that (he) gave (it) to the son of the rabbit. So the son of the rabbit took (it) and ate (it).'

In (16), the first clause (line 1) introduces two core arguments ('some poor person' and 'a little bit of porridge') by means of lexical noun phrases. In the following clauses, however, they are not referred to by noun phrases or by pronouns. In line 2 both the subject and the object of the verb *póe* 'give (away)' have been omitted, and in line 3 the object of both the verbs *láp* 'receive' and *s'óe* 'eat' is not specified. The practice of omitting noun phrases and pronominal clitics when it is clear who is doing what to whom is common in this language and in many others.

SIDEBAR LP2.8

You might be familiar with subject-agreement in Romance languages; e.g., Italian *io ball-o* 'I dance,' *tu ball-i* 'you dance,' *lui ball-a* 'he dances.' Bound pronouns are similar, but not identical. For example, bound pronouns can be omitted in Goemai, as illustrated in (16).

SIDEBAR LP2.9

See the Manange Language Profile, Textbox LP3.5, for more information on clitics.

SIDEBAR LP2.10

See Section 14.8.3 for more insight on why core arguments may sometimes be omitted from a clause.

CHAPTER SUMMARY

Goemai is a West Chadic language with a number of interesting typological features, including implosive stops, tone, and ideophones. It is an isolating language with little morphology and a highly structured syntax. Several arguments were made to demonstrate that the noun phrase forms a syntactic constituent in Goemai. There is also evidence for grammatical subjects and objects, including constituent order, pronominal form, and marking of arguments on the verb.

TEXTBOX LP2.5 **GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE**

Convention	Meaning	Convention	Meaning
1	first person	DAT	dative
2	second person	DEF	definite article
3	third person	DEM	demonstrative

TEXTBOX LP2.5 (*cont.*)

Convention	Meaning	Convention	Meaning
DIST	distal	PTC	particle
EMPH	emphatic	PL	plural
F	feminine	POSS	possessive
FOC	focus	PROX	proximal
M	masculine	SBJ	subject
NEG	negation	SG	singular
NP	noun phrase	SPEC	specific-indefinite article
OBJ	object		

SUGGESTIONS FOR FURTHER READING

Corbett, **Greville G.** 2000. *Number.* Cambridge Textbooks in Linguistics. Cambridge University Press. Chapter 8.

A discussion of number-marking cross-linguistically. The selected chapter describes number-marking on verbs, giving background information to Exercise 2.

Heine, **Bernd**, and **Derek Nurse** (eds.). 2000. *African languages: An introduction*. Cambridge University Press.

Heine, **Bernd**, and **Derek Nurse** (eds.). 2011. *A linguistic geography of Africa*. Cambridge University Press.

These two works are introductory textbooks on Africa, with chapters on different topics to browse; especially recommended: the article by Dimmendaal on morphology in the 2000 volume and – if you've read Chapter 13 of this book on language contact – the article by Creissels et al. on Africa as a linguistic area.

Hellwig, **Birgit**. 2011. *A grammar of Goemai*. Berlin and New York: Mouton de Gruyter.

A description of the Goemai language: a resource for more detailed information on the phenomena discussed in this language profile.

Hellwig, **Birgit**. 2017. "Verbal number in Goemai (West Chadic)." *Sprachtypologie und Universalienforschung* **70**.1: 7–27.

This article presents the system of number-marking in the Goemai verb, presented from a typological perspective.

Tabain, **Marija**, and **Birgit Hellwig**. 2015. "Goemai." *Journal of the International Phonetic Association* **45**.1: 81–104.

This is a description of the phonetic structure of Goemai.

EXERCISES

1. The following examples contain quantifiers (such as *díp* 'all') and numerals (such as *gòemé* 'one' and *vél* 'two'). Review the arguments in the section entitled "Noun phrases" above, and discuss whether or not quantifiers and numerals belong to the Goemai noun phrase. *Note*: All examples are taken from natural discourse, and the first translation reflects their intended reading; different contexts can trigger different readings, and this is reflected in the second translation.

a. *gùrùm* *díp* *mu̲èp=táng* *pè* *góed'è* *s'óe*
person all 3PL=search place where.there.is food
'All the people, they searched for a place where there is food.'
Or: 'The people, they searched thoroughly for a place where there is food.'

b. *s'óe* *mu̲áráp* *díp*
food die all
'All the food had died.'
Or: 'The food had died completely.'

c. *mu̲èp* *fúm* *nì* *vél*
3PL fold 3SG two
'They folded it twice.'
Or: 'They folded the two of them.'

d. *dé* *gòe* *tù* *ǹdòe=gùrùm* *yì* *gòemé*
so.that should kill SPEC=prson PART one
'(…) so that he should kill one person.'
Or: '(…) so that he should kill a person once.'

2. Goemai displays an interesting phenomenon: a subset of its verbs have distinct singular and plural forms. Table LP2.4 summarizes those verbs that occur in this exercise.

Verbs agree in number with one (and only one) of the core arguments. In the case of intransitive clauses, the verb unsurprisingly agrees with the subject argument. This pattern is illustrated in Examples (a) and (b): plural marking on the verb indicates that the subject argument is plural (a), while singular marking on the verb indicates that the subject is singular (b). Notice that the subject noun phrase itself is unmarked for number in both examples: *gùrùm* 'person/people' is interpreted as plural because of the plural verb, and *áás* 'dog/dogs' is interpreted as singular because of the singular verb. Alternatively, it is possible for both the noun phrase and the verb to be marked for the same number (as in (c) and (d)).

SIDEBAR LP2.11
For a discussion of inflectional affixes, including plural marking, see Section 4.7.

TABLE LP2.4 Number-marking on verbs: some singular/plural pairs

Gloss	Singular	Plural
'rise (intransitive)'	*yóól*	*yúúl*
'be afraid of (transitive)'	*lúút*	*lwát*
'kill (transitive)'	*tù*	*twò*
'hate (transitive)'	*nyáng*	*nyák*
'set down (transitive)'	*d'ú*	*d'wár*
'gain experience in (transitive)'	*b'óót*	*b'áit*

a. *gùrùm* *yúúl* *pè* *ngàm*
person rise.PL place much/many
'People got up (PL) in many places.'

b. *áás* *yóól*
dog rise.SG
'The dog got up (SG).'

c. *muèp* *yúúl*
3PL rise.PL
'They (PL) got up (PL).

d. *ní* *yóól*
3SG rise.SG
'It (SG) got up (SG).'

Examples (e) to (j) all feature transitive verbs. Look at these examples, and do the following exercises:

i. For each transitive verb pair in Table LP2.4 above, determine whether it agrees with the subject or object in number.

ii. Discuss whether or not it is possible to use verbal number as an additional criterion to argue that Goemai groups subjects together and treats them differently from objects.

iii. Some grammatical patterns in languages are sensitive not only to transitivity but also to the semantic case roles of core arguments. Write down the semantic case role of each core argument. Can you characterize the distribution of the singular and plural verbs in relation to semantic case roles? If so, describe the distribution succinctly. If not, discuss.

SIDEBAR LP2.12
See Section 6.3.5, for the discussion of semantic case roles, and example sentences illustrating each type of semantic case role.

e. *muèp* *lwát* *hèn* *sòsái*
3PL be.afraid.of.PL 1SG.OBJ a.lot
'They fear me a lot.'

f. *muèp* *tú* *wò* *ŋ́nòe*
3PL kill.SG snake PROX.DEM
'They killed this snake.'

g. *tó* *ní* *twó* *muèp* *díp*
okay 3SG kill.PL 3PL.OBJ all
'Okay, he killed them all.'

h. *hèn* *nyàng* *móe-gòepé* *muèp* *t'óerép* *nt'óerép* *ŋ́nòe*
1SG hate.SG PL-that 3PL lie.PL lying.PL PROX.DEM
'I hate those that are lying there.'

i. *muèp* *d'ú* *nì* *tóe*
3PL set.down.SG 3SG.OBJ EMPH
'They set him down.'

j. *muèp* *b'át* *puér=hók* *tóe* *bá*
3PL become.experienced.in.PL fishing=DEF EMPH NEG
'They really didn't become experienced in fishing.'

LANGUAGE PROFILE 3

Manange

3.1 Introduction

Manange is a Sino-Tibetan language spoken in Nepal. Sino-Tibetan is a very large language family with over 360 languages; it is itself split into two "sub-families": Sinitic, comprising languages from (mainly) China, and Tibeto-Burman, comprising over 350 languages west to east from Pakistan, India, Nepal, Tibet, Bhutan, Bangladesh, Myanmar, Thailand, and China. Manange belongs to the Bodish subgrouping of Tibeto-Burman. This genealogical profile is given in more detail in Figure LP3.1.

Nepal (The Federal Democratic Republic of Nepal since 2007) is a landlocked country of approximately 57,000 square miles (similar in size to the US state of Illinois) located in South Asia, with India bordering the south, east, and west, and Tibet/China to the north. The official language of Nepal, and also its lingua franca (see Textbox LP3.1), is Nepali, an Indo-European language. The capital city of Kathmandu is located in the central part of the country, at an elevation of about 4,400 feet, while the Manang District, the traditional home of Manange speakers, is located to the north and west of Kathmandu. The map in Figure LP3.2 gives a geographic perspective on the location of Manang.

SIDEBAR LP3.1

The online resources for this language profile include a glossed and translated Manange text, with audio, and photos of the Manange area and of the author doing fieldwork.

TEXTBOX LP3.1 **LINGUA FRANCA**

A **lingua franca** is a language that is spoken within multilingual communities where people do not speak each other's ancestral languages. It usually functions as a language of commerce in a particular nation or region where there is extensive multilingualism. In Nepal, the lingua franca nationwide is Nepali (also the official language of Nepal), but in certain regions within the country, other indigenous languages have lingua franca status, including some dialects of Tibetan in western Nepal.

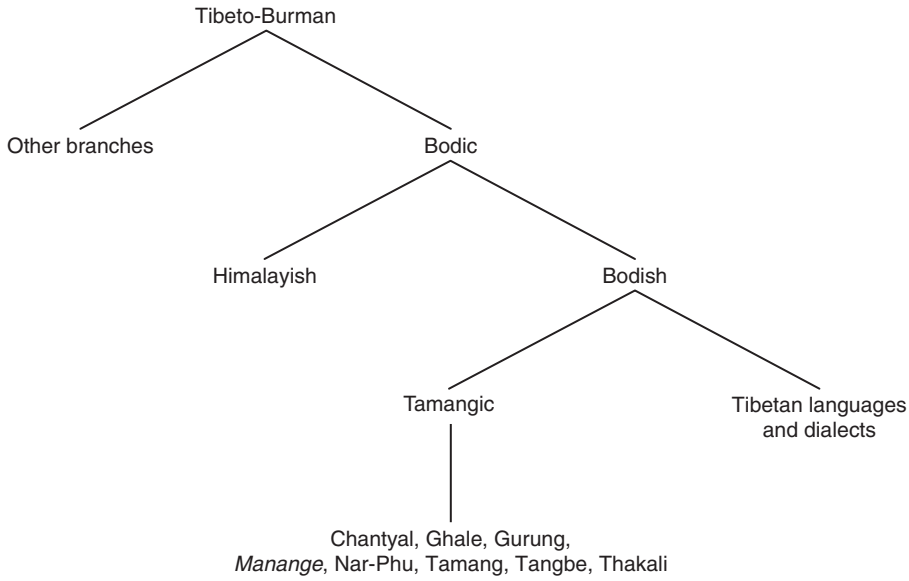


Figure LP3.1 Genealogical profile of Manange

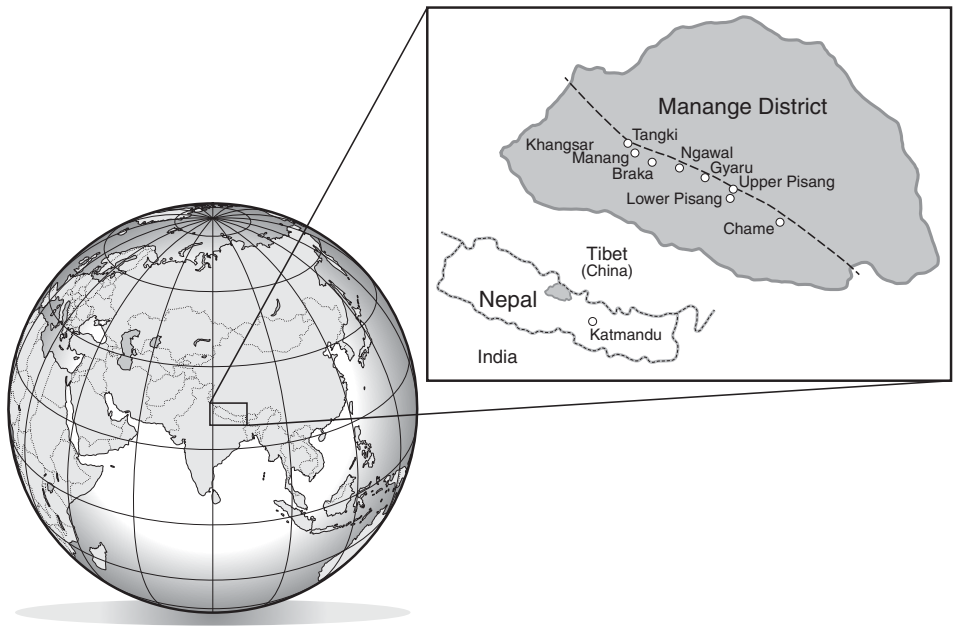


Figure LP3.2 Map of Manang District: dotted line shows Annapurna trekking route

The average elevation of the thirteen Manange-speaking villages is higher than that of Kathmandu, at around 10,000 feet above sea level, with the highest point in Manang at 17,765 feet. The population of Manang is much sparser than that of the rest of Nepal: under 10,000 people live in a district of 867 square miles (the total population of Nepal is currently around 30 million, with over 1 million people in the Kathmandu area). As discussed

below, these geographic and human aspects have a significant impact on the linguistic situation in Manang.

The map also shows an important factor in the socioeconomic organization of Manange speakers: the Annapurna Circuit (roughly approximated via the dashed line). This is a footpath of approximately 185 miles in length, which bisects the Manang District as it runs through central Nepal. Traditionally, the Annapurna Circuit was a route for trading foodstuffs and other goods between the Manang region and the rest of Nepal, Tibet, and India. Nowadays the Annapurna Circuit is famous as a trail for backpackers or "trekkers." As a result, the nearer to the Circuit a Manange settlement is, the more that settlement's economic practices are tailored toward the tourist economy.

Manange villages located right on the Circuit have houses converted into luxury-style lodges, some with German-style bakeries and electricity capabilities operated by small hydro-power generators. There are also numerous small shops selling goods for trekkers. There is a growing predominance of Nepali bilingualism (and to some extent, English), as villagers interact with tourists, porters, and trekking guides, or as city Mananges relocate to Manang to reap the rewards of the trekking industry. The socioeconomic situation for inhabitants who live farther away from the Circuit is much different: they engage mainly in yak and goat shepherding, as well as in limited farming, which includes growing buckwheat, potatoes, cauliflower, and garlic in the cooler, drier climates, or corn, millet, and wheat in the warmer southern portions of Manang.

Figure LP3.3 A trekking lodge sign in Dharapani, Manang, written in English for tourists

Manange, which has a number of different names (see Textbox LP3.2), is not the only language spoken in Manang; it is one of four Bodish languages in the area, including Gurung, Nar-Phu, and Gyalsumdo, which is a Tibetan variety. In addition to these languages, Tibetan speakers are also represented in Manang; these speakers are typically migrants who have relocated to Manang due to the lucrative tourist season and better grazing conditions. Additionally, Thakali people, who inhabit the Mustang District to the northwest of Manang, regularly travel through Manang with mule trains.

TEXTBOX LP3.2 **LANGUAGE NAMES**

Many languages have more than one language name. In other words, languages may have one or more **endonyms** or **autonyms** (language names used by the locals or group members themselves) and also one or more **exonyms** (names used by outsiders, and not by group members themselves). Manange is a good example of this: speakers self-report their ethnic group and language name as Nyeshang, Nyeshangte, or Nyangmi (these names are their endonyms). Non-Manange speakers frequently refer to the ethnic group and its speakers as Manange, Manangi, Managkye, Manangba, or Manangbhot (all exonyms). This is not just true for Manange, but for more commonly encountered languages like German (endonym: Deutsch), Dutch (endonym: Nederlands), and Scottish Gaelic (endonym: A' Ghàidhlig). Another example of an endonym/exonym difference within Nepal is that of Newar (endonym: Nepal Bhasa). Interestingly, the term "Manange" has been gradually shifting from a strict exonym to having endonym status, especially for younger speakers.

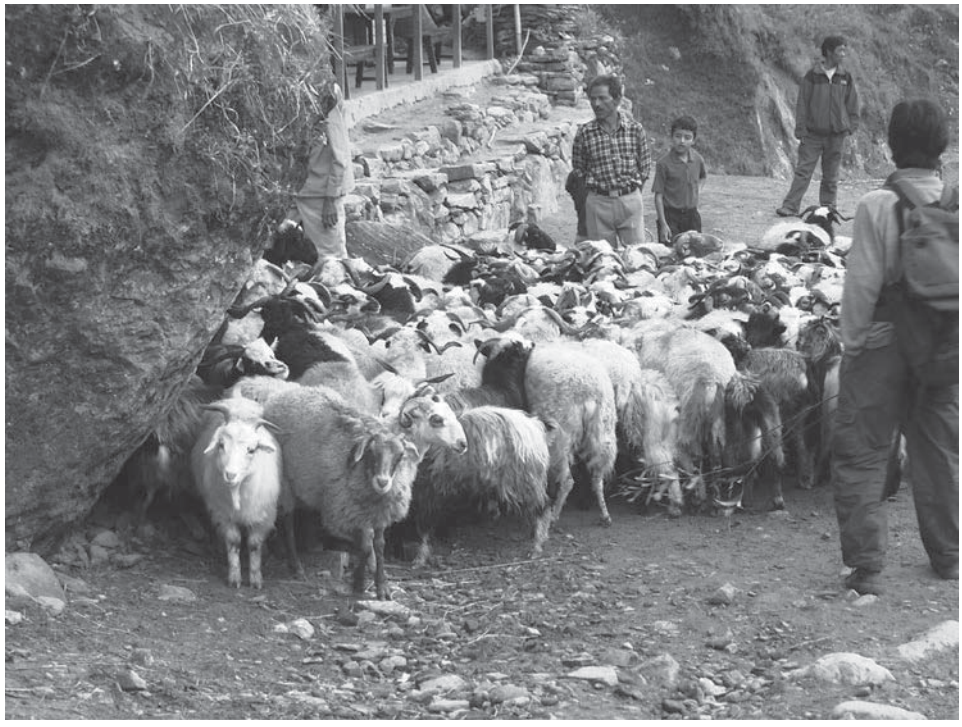


Figure LP3.4 Sheep herding along the road, Lower Manang

SIDEBAR LP3.2
audio-video.shanti.virginia.edu/collection/maanange
You can learn more about the Manange people and hear their language spoken by exploring the videos in this free online corpus at this website. The videos have been transcribed and translated into English.

In recent generations, many Mananges have migrated to Kathmandu, or to lower elevations during winter, to benefit from longer growing seasons and better education and employment opportunities. In winter, many women and children stay in low-elevation villages where Nepali is spoken, while men may travel to other regions for work. Although some Mananges do remain in Manang year round, this number seems to be declining.

Manange has a speaker population of under 5,000; it is thus considered a small but relatively viable language, with some prospect of endangerment. Despite displacement via emigration of some speakers to Kathmandu, there is continued transmission of Manange to younger generations. The primary factor contributing to an observed small-scale shift away from Manange is the rise of access to formal education in Nepali for socioeconomic advancement. However, several factors contribute to the retention of Manange, including positive ethnic-group identity and prestige, and the comparative wealth of Mananges as entrepreneurs. Manange is neither the most nor the least viable language in comparison to other nearby languages: the Gurung dialects Nepal-wide have over 200,000 speakers, while the Phu dialect has perhaps only a couple of hundred.

3.2 Typological Overview of Manange

SIDEBAR LP3.3
See Section 4.8 for more on the distinction between analytic versus synthetic languages and agglutinative morphology.

Because the Sino-Tibetan family comprises languages covering such a large area, typological descriptions recognize two main types of languages from this family: languages of the "Sinosphere" and languages of the "Indosphere." Languages in the Sinosphere are located mainly in Southeast Asia and are **analytic**, with little inflectional and derivational morphology. This does not mean they lack such traits altogether, but that they tend to show morphological alternations via phonological adjustments (e.g., tone) and tend to rely more heavily on phrasal structures (e.g., compounds and strings of verbs called **serial verbs**) than on affixes. Root morphemes in analytic languages are rarely longer than one syllable. In contrast, languages in the Indosphere, which extends through the Himalayas and into South Asia, have **synthetic** and **agglutinative** morphological patterns, including affixes marking case, honorifics, tense, and aspect. Root morphemes in synthetic languages may be polysyllabic, and these languages usually lack tone. However, complicating this division are languages such as Manange, which is geographically located in an Indospheric region, but which shares some features with Sinospheric languages.

SIDEBAR LP3.4
Retroflex consonants are pronounced with the tongue curled back and positioned just behind the alveolar ridge. Manange has two voiceless retroflex stops (plain and aspirated), [ʈ] and [ʈʰ], plus a voiceless retroflex fricative, [ʂ]. Retroflex consonants are also found in Bardi, the subject of Language Profile 8.

3.2.1 Manange Phonology and Morphology

Manange has thirty consonant phonemes, including voiceless plain and aspirated stops and affricates in the bilabial, dental, retroflex, palatal, velar, and glottal places of articulation. Manange also has four nasals (/m, n, ɲ, ŋ/), and three fricatives (/s, ʂ, ʃ/). The consonants also include approximants (/l, j, w/) and an alveolar tap (/ɾ/). In addition, there is a labialized series of consonants, pronounced with lip rounding and a labial-velar off-glide: /p^w, p^{wh}, m^w, k^w, k^{wh}, $ŋ^w$/. The six vowel phonemes include: /i, u, e, o, ɑ, ʌ/; all vowels except /ʌ/ have a nasalized counterpart.

TEXTBOX LP3.3 **TRANSCRIBING TONE IN MANANGE**

This language profile marks the tones in Manange by using small raised numbers at the end of the word bearing the tone. These numbers indicate pitch height: 5 is the highest pitch and 1 the lowest. For example, a 52 tone starts high and falls dramatically, almost to the bottom of the pitch range, while a 44 tone is fairly high and level.

Manange has four tones, as illustrated by Example (1).

(1) The four tones in Manange (see Textbox LP3.3 for a note on the transcription)

Tone	Melody	Example
1	low level	*ʈu*^{22} ‘stay’
2	high level	*ʈu*^{44} ‘thread’
3	very high falling	*ʈu*^{52} ‘cereal’
4	mid-high falling	*ʈu*^{42} ‘six’

Some words, especially recent loanwords, do not carry a tone melody. For more on tone, see Textbox LP3.4.

TEXTBOX LP3.4 **TONE LANGUAGES**

A language that uses pitch as a primary means for word or grammatical meaning contrast is said to be **tonal**, or a **tone language**. While all languages use pitch in some capacity (e.g., for affective, interactional, or interrogative functions), tone languages use pitch to signal differences in meaning in words. Tone is a common feature of Sino-Tibetan languages. Manange has four tones. Some Sino-Tibetan languages have fewer than four tones (e.g., Meithei, spoken in northeastern India, which has two tones), and some have more (e.g., Cantonese, spoken in Guangdong China, which has six).

SIDEBAR LP3.5
Other examples of tone languages described in this book are Engenni (see Chapter 4) and the Goemai Language Profile (LP2).

The morphological profile of Manange is largely analytic, with a small number of suffixes and clitics, discussed below.

Elements in the noun phrase are structured into a particular order:

DEMONSTRATIVE RELATIVE-CLAUSE **noun** ADJECTIVE NUMERAL = CLITIC

SIDEBAR LP3.6
See Textbox LP3.8 below for an explanation of aspect. See also Chapter 5 or the Glossary (at the back of this book or on the student resources website) for definitions of aspect and mood.

SIDEBAR LP3.7
Evidentiality is described in Section 13.2.2. See also the Tsez and South Conchucos Quechua Language Profiles (LP6 and LP7) for additional descriptions of evidential systems.

SIDEBAR LP3.8
For other examples of languages with clitics, see the Language Profiles for Goemai (LP2), Finnish (LP4), South Conchucos Quechua (LP6), Bardi (LP8), and Lowland Chontal (LP9).

Clitics (see Textbox LP3.5) are affix-like morphemes that in Manange indicate noun plurality, definiteness, and case. There are a number of clitic case markers. Of special importance here is the clitic *=tse*, which marks the more agentive core argument of a transitive clause; this is called an **ergative** marker (see the Bardi Language Profile, Textbox LP8.3, for a fuller discussion of ergativity; Tsez (LP7) is also ergative). The clitic *=ri* marks the object noun phrase of a transitive clause when the object is both animate and a semantic patient. Subjects of intransitive clauses are unmarked.

Unlike many other "Indospheric" Tibeto-Burman languages, Manange lacks verbal affixes that mark number, gender, case, or the honorific status of referents. It also lacks grammatical markers for tense. There is a small set of verbal suffixes that mark **aspect** and **mood**, and which are also used to link clauses together in larger complex sentences. There is only one prefix, the negative *a-*.

3.2.2 Manange Clause and Sentence Structure

The word order of basic constituents is generally SOV for transitive clauses or SV for intransitive clauses. Clauses that have markers indicating aspect/mood and **evidentiality** are called **finite** and mark the end of a sentence. Some examples are given in (2).

(2) **a.** Finite, with ergative and patient-marked animate object

nakju=ko=tse^{22}	*nokor=ko=ri*^{22}	*tʃʰĩ-tsi*^{22}
dog=DEF=ERG	cat=DEF=P	catch-PRF

'The dog caught the cat.'

TEXTBOX LP3.5 **CLITICS**

Both **clitics** and affixes are bound morphemes. However, affixes have more restricted distribution than clitics, in that they occur only with words from a single lexical class. A typical example is the past-tense suffix in English, which can only be bound to verbs. Clitics are much less restricted; they may attach to a wider variety of host words. The possessive suffix *'s* in English is considered an **enclitic** (a clitic that follows its host) because it attaches to a variety of hosts (in conveying the grammatical meaning of possession), e.g., to a noun in *the guy's car*; to a verb embedded in a relative clause in *the guy that you know's car*; and to the verb of an adverbial clause embedded into a larger noun phrase in *the guy that you met yesterday while travelling's car*. In Manange, case-markers are analyzed as clitics because they attach to the final element of the noun phrase, regardless of its lexical class. For example, the ergative case clitic, which marks the more agentlike core argument of a transitive or ditransitive verb, attaches to a noun in *mi=tse*^{52} (man=ERG) 'man'; to a nominalized verb-like adjective in *mi*^{52} *mɪe-pʌ=tse*^{44} (man fat-NOM=ERG) 'fat man'; and to a numeral in *mi*^{52} *sẽ=tse*^{44} (man three=ERG) 'three men.' All three of these noun phrases are in the ergative case, appropriate for their use as subjects of a transitive clause.

b. Finite, intransitive

ale=ko^{22}	*nu*^{42}	*mo*^{22}
boy=DEF	sleep	COP

'The boy sleeps.'

The finite markers in these examples are the perfective suffix *-tsi* and the present marker *mo*^{22}. You can also see the ergative case-marker on the NP subject of the transitive verb, and the object case-marker on the noun-phrase object of the transitive verb in (2a). The subject of the intransitive verb in (2b) is unmarked.

In addition to finite clauses that are marked for mood, aspect, and/or evidentiality, Manange also has many **non-finite** clauses, which lack marking for these categories. Verbs in non-finite clauses typically have a suffix, *-pʌ*, which is considered a **nominalizer**. This nominalizer is used in the formation of relative clauses, complement clauses, purpose clauses, and clauses that follow a sequential time ordering. Example (3) illustrates *-pʌ* forming a relative clause; note that there is no marking of evidentiality, aspect, or other finite categories.

(3)

se-pʌ^{22}	*mi*^{52}
kill-NMLZ	person

'murderer' (lit. 'person who kills' or 'killing person')

An important syntactic structure is the **copula clause**. A **copula** is a verb used to relate a noun (the **copula subject**) with another noun or an adjective (the **copula complement**). In English, the copula is the verb *be*. In (4), the copula relates the copular subject to a following noun, while in (5) it relates the copular subject to a following adjective.

(4) [My father]$_{cs}$ was [a teacher]$_{cc}$

(5) [The baby]$_{cs}$ is [tired]$_{cc}$

In Manange the copula is *mo*^{22} 'be,' sometimes followed by an additional marker *mu*^{22}, which marks the speaker's strength of commitment to the truth or validity of a propositional utterance based on available evidence. Some examples of copula clauses in Manange are given in (6); take a look at the clauses and try out the activity in Stop and Reflect LP3.1 before reading on.

STOP AND REFLECT LP3.1 **COPULA CLAUSES**

For each clause in (6), practice putting the copula subject and copula complement in parentheses, and then check your answers in Textbox LP3.6 on the next page. In what basic way do copula clauses in Manange differ syntactically from copula clauses in English?

(6) Copula clauses without bracketing

a.

tsu=ko^{44}	*mi*^{44}	*mo*^{22}
this=DEF	eye	COP

'This is an eye.'

SIDEBAR LP3.9
The abbreviation CS indicates that a noun phrase is the copula subject, while CC indicates that a noun phrase is the copula complement; see Section 6.2.3 for further discussion.

b. *tʰĩ=ko*^{42} *tʃaŋku*^{52} *mo*^{22}
house=DEF green COP
'The house is green.'

c. *pʰolpʌ*^{42} *taŋ=ko*^{52} *tʰẽ*^{22} *mo*^{22} *mu*^{22}
frog pot=DEF empty COP EVID
'The frog pot was empty.'

d. *tʰî*^{42} *naŋ=ri*^{52} *sol-pʌ*^{42} *mo*^{22}
house inside=LOC bright-NMLZ COP
'The inside (of the) house is bright/well-lit.'

e. *tsoktʃu*^{22} *siki*^{22} *lʌ-pʌ*^{22} *kʰja=ri*^{42} *mo*^{22}
table food do-NMLZ place=LOC COP
'The table is in the kitchen.'

f. *ŋʌ*^{22} *amtsi*^{22} *mo*^{22}
1SG doctor COP
'I am a doctor.'

g. *naraŋ*^{22} *tʰĩ=ko*^{42} *tʃam-pʌ*^{22} *mo*^{22}
before house=DEF small-NMLZ COP
'The house was small before.'

TEXTBOX LP3.6 **ANSWERS: COPULA CLAUSES WITH BRACKETING**

(6) Copula clauses with bracketing

a. [*tsu=ko*^{44}]$_{CS}$ [*mi*^{44}]$_{CC}$ *mo*^{22}
[this=DEF]$_{CS}$ [eye]$_{CC}$ COP
'This is an eye.'

b. [*tʰĩ=ko*^{42}]$_{CS}$ [*tʃaŋku*^{52}]$_{CC}$ *mo*^{22}
[house=DEF]$_{CS}$ [green]$_{CC}$ COP
'The house is green.'

c. [*pʰolpʌ*^{42} *taŋ=ko*^{52}]$_{CS}$ [*tʰẽ*^{22}]$_{CC}$ *mo*^{22} *mu*^{22}
frog pot=DEF]$_{CS}$ [empty]$_{CC}$ COP EVID
'The frog pot was empty.'

d. [*tʰî*^{42} *naŋ=ri*^{52}]$_{CS}$ [*sol-pʌ*^{42}]$_{CC}$ *mo*^{22}
[house inside=LOC]$_{CS}$ [bright-NMLZ]$_{CC}$ COP
'The inside (of the) house is bright/well-lit.'

e. [*tsoktʃu*^{22}]$_{CS}$ [*siki*^{22} *lʌ-pʌ*^{22} *kʰja=ri*^{42}]$_{CC}$ *mo*^{22}
[table]$_{CS}$ [food do-NMLZ place=LOC]$_{CC}$ COP
'The table is in the kitchen.'

TEXTBOX LP3.6 (*cont.*)

f. [ŋʌ^{22}]$_{CS}$ [*amtsi*^{22}]$_{CC}$ *mo*^{22}
[1SG]$_{CS}$ [doctor]$_{CC}$ COP
'I am a doctor.'

g. *naraŋ*^{22} [*t*^{h}*ĩ=ko*^{42}]$_{CS}$ [*tʃam-pʌ*^{22}]$_{CC}$ *mo*^{22}
before [house=DEF]$_{CS}$ [small-NMLZ]$_{CC}$ COP
'The house was small before.'

The basic way in which copula clauses in Manange differ from copula clauses in English is constituent order. In English, the constituent order is CS COPULA CC, while in Manange it is CS CC COPULA, in accordance with Manange's verb-final constituent ordering.

3.3 Lexical Classes

One of the more interesting properties of Manange is its lexical classes, particularly the class of adjectives. Manange has syntactic and morphological evidence for two classes of adjectives, which are both, in their own ways, distinct from nouns and verbs.

3.3.1 Nouns

Nouns represent the largest, most productive lexical class in Manange. Although most words are monosyllabic and monormophemic, new words may be added to the lexicon via compounding and via borrowing (see Textbox LP3.7, as well as Chapter 13). Most commonly loanwords are borrowed from Nepali, but there are also borrowings from English and other languages. Table LP3.1 presents examples of monomorphemic words, compounds, and loanwords from Nepali.

SIDEBAR LP3.10
For a full discussion of loanwords, see Section 13.2. Textbox LP5.3 in the Nuuchahnulth Language Profile discusses loanwords in that language.

TEXTBOX LP3.7 **LOANWORDS**

Loanwords are words that enter into a language from another source language. Incorporating loanwords into the borrowing language can be complicated by that language's morphology, although many languages have strategies to remedy this. Manange, for example, employs a "dummy" (semantically meaningless) verb *ti*^{44}, which immediately follows the loaned verb (usually borrowed from Nepali) and carries the usual derivational or inflectional morphology in the language (e.g., Nepali *rop* 'plant' → Manange *rop ti-pʌ*^{44} plant V-NMLZ 'to plant').

Nouns in Manange show a variety of morphological and syntactic properties that do not apply to other lexical classes. Since nouns are frequently the final element in a noun phrase, they may take enclitics. These include the plural enclitic *=tse*, case enclitics, and the clitics *=ko* (DEF) and *=ri* (INDEF), which mark **definiteness**, the degree to which the entity

TABLE LP3.1 Examples of Manange nouns

Monomorphemic		Compounds			Loans
pa^{52}	'leaf'	*p*^{h}*em*^{w}*i*^{42}	'coin' (metal-money)	*kot*^{h}*a*	'pasture' (< Nepali *gotha*)
mi^{44}	'eye'	*meʃʌ*^{42}	'beef' (cow-flesh)	*ʂi*^{22}	'cotton' (< Nepali *ril*)
tfoktsu^{22}	'table'	*kjep*^{h}*ɾʌ*^{22}	'buckwheat' (barley-flour)	*tauli*	'towel' (< English *towel*)
pʌle^{52}	'leg'	*ʃiŋtuŋ*^{44}	'tree' (wood-grove)	*fon*	'phone' (< English *phone*)

SIDEBAR LP3.11
For more on "definiteness," see also Section 9.8.1.

or concept a noun refers to is already known or has already been introduced in a discourse context. None of these categories co-occurs with verbs or adjectives in Manange.

(7) Plural marking

nʌkyu=tse^{22}	*nu*^{42}	*mo*^{22}
dog=PL	sleep	COP

'The dogs sleep.'

(8) Definiteness and case-marking

nʌkyu=ko=tse^{22}	*nokor=ri*^{22}	*pyu*^{52}	*mo*^{22}
dog=DEF=ERG	cat=DAT	chase	COP

'The dog chases the cat.'

(9)

ŋʌ=tse^{22}	[*ʂʌ*^{22}	*se-pʌ*^{22}	*mi=ko=ri*^{52}]	*m*^{w}*i*^{42}	*p*^{h}*ɾʌ*^{42}	*pin-tsi*^{22}
1SG=ERG	[goat	kill-NMLZ	person=DEF=DAT]	money	hundred	give-PRF

'I gave one hundred rupees to the man who killed the goat.'

Syntactically, nouns are the only lexical class that can serve as the head of a noun phrase, while neither verbs nor adjectives may perform this function. Therefore, the example in (10a) represents a possible noun phrase in Manange, while those in (10b) and (10c) do not.

(10) Acceptable and unacceptable NP heads

a.	[*nʌkju*^{22}]$_{NP}$	[dog]$_{NP}$	'a/the dog'
b.	*[*mleŋkja*^{22}]$_{NP}$	*[black]$_{NP}$	'a/the black one'
c.	*[*nu-pʌ*^{42}]$_{NP}$	*[sleep-NMLZ]$_{NP}$	'the sleeper/the sleeping one'

3.3.2 Verbs

Like nouns, verbs are also an also open class, with additions via compounding or borrowing (although borrowed verbs in Manange are less frequent than borrowed nouns).

Verbs are clearly different from nouns in Manange; there are morphological and syntactic properties that are unique to verbs. For example, verbs may be marked for **aspectual** distinctions (see Textbox LP3.8 for a brief overview of aspect). In (11) perfective aspect is marked by a suffix directly on the verb stem and in (12) progressive aspect is indicated by both a suffix and the use of the copula as an auxiliary verb (compare English *is running*). In Manange, the auxiliary is placed after the main verb (which is marked with the progressive suffix, similar to *-ing* in English), and therefore occurs at the end of the clause.

TEXTBOX LP3.8 **ASPECT**

Aspect is a grammatical category related to how an event is expressed in temporal terms. Situations expressed as unified completed wholes are in **perfective** aspect, e.g., *they fought*, in contrast to situations expressed from a viewpoint internal to the situation, e.g., *they are fighting* (**progressive**) or *they often fight* (**habitual**). The term **imperfective** includes progressive, habitual, and other types of aspect. Aspect is independent of tense; for example, situations can be expressed in the past progressive (*were fighting*), present progressive (*are fighting*), and future progressive (*will be fighting*).

(11) Perfective

nʌkju=ko^{22}	*kju-tsi*^{44}
dog=DEF	run-PRF

'The dog has run.'

(12) Progressive

nʌkju=ko^{22}	*toso*^{52}	*kju-tse*^{52}	*mo*^{22}
dog=DEF	now	run-PROG	COP

'The dog is running right now.'

Another property unique to verbs is that they are the only lexical items that can take the negative prefix *a-*. They are also the last constituent in most clauses.

(13)

kje^{22}	*a-te-ɾo*^{44}
voice	NEG-take.out-IMP

'Don't make a sound.'

In English, many nouns may be treated formally as verbs simply by adding verbal morphology (e.g., *He moved the table ~ They tabled the vote*), but this is not possible in Manange. Aspect/mood morphology and the negative prefix apply exclusively to verbs; nouns cannot take these markers.

3.3.3 Adjectives

Unlike in many other languages, Manange has not one, but two types of adjectives: those that behave as stereotypical adjectives from the point of view of an English speaker (called "simple adjectives" here), and those that have some properties in common with verbs (called "verb-like adjectives" here). These two types can be distinguished by their formal properties both in the noun phrase, when they have attributive functions (i.e., provide additional information about the noun within the noun phrase), and in the predicate, when they have predicative functions (i.e., convey the primary information or proposition of the clause). Both types of adjectives can be used in comparative and superlative constructions (see Textbox LP3.9).

Simple adjectives in Manange constitute a small and closed class, meaning that it is unusual for new items to be added to this class. This class of adjectives includes most color terms and some words expressing semantic dimensions, such as human states and speed or value. Some examples are given in Table LP3.2.

In attributive functions, simple adjectives follow the head noun. These adjectives appear to be able to take inflectional morphology that identifies nouns, including plural, case, and definiteness clitics, as shown in example (14).

(14) [*kʰje*^{42} *tʌɾkja=ri*^{22}] *ïʌ*^{22} *por*^{52} *jʌ*^{22} *mo*^{22}
[road white=LOC] 1SG take go COP
'I take (the prayer scarf) on the white road (to heaven).'

However, because these inflectional markers are clitics (not affixes), they have a freer distribution, attaching to any element that is final in the noun phrase, including adjectives, numerals, nouns, and determiners. Unlike nouns (but like verbs and verb-like adjectives), simple adjectives cannot be the single (head) element of a noun phrase, so a structure like ***tʌɾkja=ri*^{22} *ïʌ*^{22} *poɾ*^{52} *jʌ*^{22} *mo*^{22}, where the color word *tʌɾkja*^{22} 'white' is the head of the NP, is not acceptable.

TABLE LP3.2 Semantic categories of Manange simple adjectives

Color terms		Human states		Speed/Value	
mleŋkja^{22}	'black'	*kʰjokɾo*^{22}	'old'	*kini*^{52}	'fast'
olkja^{22}	'red'	*ŋoto*^{52}	'true/honest'	*kole*^{42}	'slow'
tʌrkja^{22}	'white'				

Simple adjectives may be used with the verb 'be' in a copula construction. This is also true of nouns. Adjectives and nouns that occur with a copula are said to be the copula complements.

TEXTBOX LP3.9 **COMPARATIVES AND SUPERLATIVES**

In English, adjectives can be placed in **comparative** and **superlative** constructions, either through suffixation, via a "more/most" phrasal structure, or through suppletion of the root (e.g., *red/redder/reddest, delicious/more/most delicious, bad/worse/worst*). This helps to distinguish adjectives from other lexical classes that cannot do this (e.g., **table/tabler/tablest*). In Manange, comparatives and superlatives are formed with the same strategy, a phrasal structure that can be glossed as 'say-comparative.' Examples are shown here with *kʰjokro*^{22} 'old (of an animate being).'

a. *u*^{22} *nʌkju*^{22} *kʰjokro*^{22} *mo*^{22}
DIST.DEM dog old COP
'That dog is old.'

b. *u*^{22} *nʌkju*^{22} *tsu*^{44} *nʌkju*^{22} *pi-le*^{52} *kʰjokro*^{22} *mo*^{22}
DIST.DEM dog PROX.DEM dog say-COMPAR old COP
'This dog is older than that dog.' (lit. 'Compared to that dog, this dog is old.')

c. *tsu*^{44} *nʌkju=ko*^{22} *tsʰaraŋ*^{44} *pi-le*^{52} *kʰjokro*^{22} *mo*^{22}
PROX.DEM dog=DEF all say-COMPAR old COP
'This dog is the oldest of all.' (lit. 'Compared to all dogs, this dog is old.')

This structure is not uncommon in languages of South Asia, both in Tibeto-Burman and in Indo-European families.

(15) Noun as a complement of the copula *mo* 'be'

[*u*^{22} *ʃʌ.kʌ=ko*^{52}]$_{cs}$ [*tore*^{52}]$_{cc}$ [*a-ɾe*^{2} *mo*^{22}]$_{PREDICATE}$
[DIST.DEM glacier=DEF]$_{cs}$ [graveyard]$_{cc}$ [NEG-COP COP]$_{PREDICATE}$
'That glacier place was not a graveyard (a long time ago).'

(16) Simple adjective as a syntactic complement of the copula *mo* 'be'

[*pʰolpʌ*^{42} *tʰaï=ko*^{44}]$_{cs}$ [*tʰẽ*^{22}]$_{cc}$ [*mo*^{22} *mu*^{22}]$_{PREDICATE}$
[frog pot=DEF]$_{cs}$ [empty]$_{COMP}$ [COP EVID]$_{PREDICATE}$
'The frog pot (pot where the frog lived) was empty.'

Like nouns, but unlike verbs, simple adjectives in the predicate are not directly marked for aspect or mood distinctions, nor do they occur before an evidential marker. Instead, the copula *tʌ*^{22} 'become' is used; it follows the adjective, hosts this morphology, and precedes any evidentials.

(17) The copula *tʌ* 'become' following a noun

[*kju*^{44} *tso=ko*^{44}]$_{cs}$ [*tʰi*]$_{cc}$ [*tʌ-tsi*^{22}]$_{PREDICATE}$
[water PROX.DEM=DEF]$_{cs}$ [lake]$_{cc}$ [become-PRF]$_{PREDICATE}$
'This water became a lake.'

(18) The copula *tʌ* 'become' following a simple adjective

[*kʰi*^{22}]$_{cs}$ [*katʰe*]$_{cc}$ [*tʌ-tsi*^{22}]$_{PREDICATE}$
[3SG]$_{cs}$ [thin]$_{cc}$ [become-PRF]$_{PREDICATE}$
'He became thin.'

In this construction, both adjectives and nouns are acceptable copula complements, and the verb *tʌ²²* 'become' is the copula.

Again like nouns, but unlike verbs, simple adjectives do not occur with the negative morpheme prefix. To negate a copula clause, a **suppletive** (highly irregular) form of the copula is used, creating a complex predicate.

(19) Suppletive copula following noun

[u²²]$_{cs}$ *[toɾe⁵²]*$_{cc}$ *[a-ɾe²²* *mo²²]*$_{PREDICATE}$
[DIST.DEM]$_{cs}$ [graveyard]$_{cc}$ [NEG-COP COP]$_{PREDICATE}$
'That (piece of land) was not a graveyard (back then).'

(20) Suppletive copula following adjective

[u²² *nʌkju²²]*$_{cs}$ *[mleŋka²²]*$_{cc}$ *[a-ɾe²²* *mo²²]*$_{PREDICATE}$
[DIST.DEM dog]$_{cs}$ [black]$_{cc}$ [NEG-COP COP]$_{PREDICATE}$
'That dog is not black.'

In contrast to simple adjectives, the class of verb-like adjectives is larger and is open to new membership via compounding. Some examples of verb-like adjectives are provided in Table LP3.3, along with some of the semantic dimensions that they can express.

Not surprisingly, verb-like adjectives have some formal properties in common with verbs, but there are also some crucial ways in which they are different. In attributive functions, verb-like adjectives follow the noun; in this way, they are similar to simple adjectives. However, they may not occur as bare stems in this position but must take a suffix *-pʌ*, glossed here as NMLZ for "nominalizer," following common practice in Tibeto-Burman linguistics. If verb-like adjectives occur in final position in the noun phrase, then like other lexical items, they may host the full range of clitics (plural, case, or definiteness). Example (21) illustrates an attributive verb-like adjective in NP-final position.

(21) *[kju⁴⁴* *tʰjʌ-pʌ=ri²²]*$_{NP}$ *tʰẽ²²* *tʌ-tsi²²*
water big-NMLZ=LOC throw become-PRF
'The ashes were thrown in big water (like a river).'

Verbs can also be used to modify nouns within the noun phrase, in which case they also take the nominalizing suffix. However, while verb-like adjectives *follow* the noun in the noun phrase, a modifying verb must *precede* the noun, as in example (22).

TABLE LP3.3 Semantic categories of Manange verb-like adjectives

Age		Value, human state		Physical property		Dimension	
sẽ²²	'young'	*kũ⁴⁴*	'expensive'	*ʃa²²*	'cracked/broken'	*tʰjʌ²²*	'big'
taŋ⁵²	'ancient'	*kʰe⁴⁴*	'cheap'	*tʃẽ⁵²*	'soft'	*tʃã²²*	'small'
tʃã⁵²	'new'	*nʌ⁴⁴*	'ill'	*kĩ²²*	'bitter'	*ɾuŋ⁵²*	'long'
ʂuŋ⁴⁴	'brief'	*tsaŋ⁴⁴*	'clean'	*kʰaŋ⁴⁴*	'cold climate'	*pʰɾʌ⁴⁴*	'thin/fine'

(22) *ŋʌ=tse*^{22} [*kʰol-pʌ*^{42} *kju=ko*^{42}]$_{NP}$ *tʰuŋ-tsi*^{42}
1SG=ERG [boil-NMLZ water=DEF] drink-PRF
'I drank the boiled water.'

In (21) the verb-like adjective *tʰjʌ-pʌ*^{22} 'big-NMLZ' follows the head noun *kju*^{44} 'water,' while in (22) the nominalized verb *kʰol-pʌ*^{42} 'boil-NMLZ' precedes the head noun *kju*^{44} 'water.' Thus, although both verb-like adjectives and verbs are marked with the nominalizer suffix *-pʌ*, they have distinct NP positions in attributive functions. In this sense, verb-like adjectives are more similar to simple adjectives than to verbs; adjectives of both classes occur in post-nominal position in the noun phrase, while verbs occur in pre-nominal position.

When used as predicate adjectives, verb-like adjectives show some, but not all, of the morphological properties of verbs. Both simple adjectives and verbs are marked with the perfective suffix *-tsi*, as shown in (23) and (24).

(23) The perfective *-tsi* suffix marking a verb

kʰi^{22} *kʰʌ-tsi*^{22}
3SG come-PRF
'He came.'

(24) The perfective *-tsi* suffix marking a verb-like adjective

kʰi^{22} *tʰjʌ-tsi*^{22}
3SG big-PRF
'He was big.'

These examples show that verbs and verb-like adjectives can have similar morphological behavior and parallel syntactic structure when they function as predicates. However, this is not always the case. While verbs can be marked by the negative prefix *a-* directly, verb-like adjectives cannot. To negate a verb-like adjective, speakers must use the suppletive negative copula *a-re*^{22}; the verb-like adjective then occurs as the complement to the copula. This structure is illustrated in examples (25) and (26):

(25) Negation marked on a verb

kʰi^{22} *a-kʰʌ*^{22} *(mo*^{22}*)*
3SG NEG-come (COP)
'He doesn't come.'

(26) Negation marked via suppletive copula for a verb-like adjective

mi^{52} *mile=ko*^{22} *ʂuŋ-pʌ*^{44} *a-ɾe*^{22} *mo*^{22}
person life=DEF short-NMLZ NEG-COP COP
'Man's life is not short.'

We have seen that in some ways verb-like adjectives are structurally identical to verbs: they both are marked with the nominalizer suffix *-pʌ* in an attributive construction and verb-like adjectives can take a limited range of aspect morphology similar to verbs when used in predicative constructions. However, in other ways verb-like adjectives are different from verbs: they show a different ordering with respect to the head noun in the noun phrase and, when negated in the predicate, they occupy the copula complement position and cannot carry

TABLE LP3.4 Properties of nouns, verbs, simple adjectives, and verb-like adjectives

Property	Nouns	Verbs	Simple adjectives	Verb-like adjectives
Position w/respect to noun in NP	N/A	Pre	Post	Post
Single head of NP?	Y	N	N	N
Hosts perfective aspect?	N	Y	N	Y
Hosts imperfective or future?	N	Y	N	N
Hosts negative prefix *a-*?	N	Y	N	N
Occurs in complement structures?	Y	N	Y	Some

SIDEBAR LP3.12
See Section 5.1.2. for more on cross-linguistic differences in word classes.

the negative prefix. Other verbs, in contrast, precede the noun in the noun phrase and may host negation morphology. A summary of these main similarities and differences between simple adjectives and verb-like adjectives, along with a comparison to nouns and verbs, is given in Table LP3.4.

CHAPTER SUMMARY

Manange is a Tibeto-Burman language spoken in a mountainous region in Nepal. It has a number of interesting typological features, including tone, clitics, and marking of evidentiality. This language profile has especially focused on lexical classes and argued for the presence of two distinct classes of adjective. This ties in with a point made in Chapter 5 that different languages have different sets of word classes and that in each language it is important to look at the detailed phonological and grammatical properties of words in order to determine which class they fall into. The properties that are used to identify a particular word class in one language may not do so in another; what is true of word classes is also true of many other aspects of the grammar.

TEXTBOX LP3.10 **GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE**

Convention	Meaning	Convention	Meaning
1	first person	COMPAR	comparative
2	second person	COP	copula
3	third person	DAT	dative
COM	comitative	DEF	definite

TEXTBOX LP3.10 (*cont.*)

Convention	Meaning
DEM	demonstrative
DIST	distal
ERG	ergative
EVID	evidential
GEN	genitive
IMP	imperative
INST	instrumental
LOC	locative
NEG	negation
NMLZ	nominalizer
P	patientive
PL	plural
PRF	perfect aspect
PROG	progressive aspect
PROX	proximal
SG	singular

SUGGESTIONS FOR FURTHER READING

van Driem, **George**. 2001. *Languages of the Himalayas: An ethnolinguistic handbook of the Greater Himalayan Region, containing an introduction to the Symbiotic Theory of Language*, 2 vols. Leiden: Brill.

This two-volume book gives a comprehensive overview of the languages and language communities of the Greater Himalayan range, including historical and comparative descriptive data of previously undocumented languages.

Fromkin, **Victoria A.** (ed.). 1978. *Tone: A linguistic survey*. New York: Academic Press.

This book is a classic: an engaging survey of the phonetic (acoustic, physiological) dimensions of tone, as well as proposals to deal with tone in formal phonological models. This is a must-read for anyone who wants to study tone and tone-related phenomena in greater depth.

Grenoble, **Lenore A.**, and **Lindsay J. Whaley** (eds.). 1998. *Endangered languages: Current issues and future prospects*. Cambridge University Press.

This edited volume contains proposed frameworks for better understanding the causes, mechanisms, and outcomes of language endangerment, and includes a number of diverse and compelling case studies from endangered language communities around the world.

Hildebrandt, **Kristine A.**, and **Oliver Bond**. 2017. "Manange." In **LaPolla**, **Randy J.** and **Graham Thurgood** (eds.), *The Sino-Tibetan languages*, 2nd edn. London: Routledge. 516–533.

This article describes the core properties of Manange, as well as its location and community.

Hildebrandt, **Kristine A.**, and **Shunfu Hu**. 2017. "Areal analysis of language attitudes and practices: A case study from Nepal." *Language Documentation and Conservation*. Special Publication 13.

This article looks at the relationships between language attitudes and a range of social and spatial variables in the ethnically complex Manange Valley of Nepal.

EXERCISES

1. In the following examples of adjectives in predicative constructions, syntactically analyze the constituent structure of each example, putting each constituent in square brackets and noting the copula subject, the copula complement, and the copula in each example, where applicable. State the formal evidence present in these examples that supports the distinction between a class of simple adjectives versus a class of verb-like adjectives in Manange.

a. Non-past

u^{22}	*k*^{h}*je=ko*^{42}	*je*^{52}	*mo*^{22}
DIST.DEM	road=DEF	steep	COP

'That road is steep.'

b. Future

u^{22}	*k*^{h}*je=ko*^{42}	*je*^{52}	*tʌ-pʌ*^{22}
DIST.DEM	road=DEF	steep	become-NMLZ

'That road will be steep.'

c. Non-past

u^{22}	*ʃu=ko*^{22}	*mim-pʌ*^{44}	*mo*^{22}	*mu*^{22}
DIST.DEM	apple=DEF	ripe-NMLZ	COP	EVID

'That apple is ripe.'

d. Perfective

u^{22}	*ʃu=ko*^{22}	*min-tsi*^{44}
DIST.DEM	apple=DEF	ripe-PRF

'That apple was ripe.'

e. Perfective

u^{22}	*k*^{h}*je=ko*^{42}	*je*^{52}	*mo*^{22}	*mu*^{22}
DIST.DEM	road=DEF	steep	COP	EVID

'That road was steep.'

f. Future

u^{22}	*ʃu=ko*^{22}	*mim-pʌ*^{44}	*tʌ-pʌ*^{22}
DIST.DEM	apple=DEF	ripe-NMLZ	become-NMLZ

'That apple will be/become ripe.'

g. Negative

u^{22}	*ʃu=ko*^{22}	*mim-pʌ*^{44}	*a-re*^{22}	*mo*^{22}
DIST.DEM	apple=DEF	ripe-NMLZ	NEG-COP	COP

'That apple is not ripe.'

h. Negative

u^{22}	*k*^{h}*je=ko*^{42}	*je*^{52}	*a-re*^{22}	*mo*^{22}
DIST.DEM	road=DEF	steep	NEG-COP	COP

'That road is not steep.'

2. In the following data, what strategies are used for the modification of nouns within the noun phrase? What do these strategies tell us about the differences between verbs, simple adjectives, and verb-like adjectives in Manange?

a. *ŋʌ=tse*^{22} *kju*^{44} *pla-pʌ=ko*^{52} *tʰuŋ-tsi*^{44}
1SG=ERG water cold-NMLZ=DEF drink-PRF
'I drank the cold water.'

b. *ŋʌ=tse*^{22} *ŋʷo-pʌ=ko*^{52} *ʃʌ*^{22} *tsʌ-tsi*^{22}
1SG=ERG fry-NMLZ=DEF meat eat-PRF
'I ate the fried meat.'

c. *ŋʌ=tse*^{22} *ʃʌ*^{22} *kʰarkjʌ=ko*^{22} *tsʌ-tsi*^{22}
1SG=ERG meat dry=DEF eat-PRF
'I ate the dried meat (like beef jerky).'

3. In the following four sentences, identify the case indicated by each case clitic (currently glossed as "XX"), and provide the appropriate gloss. (Use the glosses found throughout the examples in this language profile.)

a. *tiŋi*^{22} *ŋʌ=lʌ*^{22} *nani=tse*^{52} *ŋʌ=juŋ*^{22} *mo*^{22}
today 1SG=XX little.girl=DEF 1SG=XX COP
'Today my little sister is with me.'

b. *kjʌ*^{52} *kʰi=lʌ*^{22} *tʰĩ=ri*^{42} *jʌ*^{22} *mi*^{22}
1SG 3SG=XX house=XX go EVID
'You went to his house (I think, but I did not witness it).'

c. *mriŋ=ko=tse*^{22} *uʃu=ko*^{22} *kola=ko=ri*^{22} *pĩ-tsi*^{22}
woman=DEF=XX apple=DEF child=DEF=xx give-PRF
'The woman gave the apple to the child.'

d. *ŋʌ=tse*^{22} *nakju=ko=ri*^{22} *perka=tse*^{44} *pʰo-tsi*^{44}
1SG=XX dog=DEF=XX stick=INST beat-PRF
'I beat the dog with the stick.'

4. The following four examples have **serial verbs**, sequences of verbs lacking any conjunctions that together form a single complex predicate. In Manange serial verb constructions, one verb is the lexical verb and one (or more) primarily contributes grammatical meaning. For each example, state which verb is the main/lexical verb and which verb is contributing a grammatical meaning. What particular grammatical meaning is it contributing?

a. *netʃel* *jʌ-pʌ*^{22} *mi=tse*^{52} *kompʌ=ri* *kʰʌtʌ* *pu*^{52} *kʰʌ-tsi*^{22}
religion go-NMLZ person=ERG gompa=LOC scarf carry come-PRF
'The pilgrim brought the scarf to the temple.'

b. *mriŋ=ko=tse*^{22} *kʌp* *te*^{22} *lʌ*^{22} *mi*^{22}
woman=DEF=ERG cup fall do EVID
'The woman dropped the cup.'

c. *ale=ko*^{22} *skul=ri* *pʰro*^{42} *jʌ-tsi*^{22}
boy=DEF school=LOC walk go-PRF
'The boy walked to school.'

d. *tʃʰẽ*^{44} *mi=ko*^{52} *ten* *mriŋ=ko*^{22} *tsʰe*^{44} *ʈu*^{22} *mo*^{22}
always person=DEF and woman=DEF fight stay COP
'The man and woman always argue.'

5. For each of the ten clauses below, do the following:

SIDEBAR LP3.13
To refresh your memory of **transitivity**, see Section 6.3.1 or the Glossary (in the back of this book or on the student resources website).

i. Identify all NPs and underline the head N.

ii. Identify the main verbs, and indicate whether they are copular, intransitive, transitive, or ditransitive.

iii. Return to the identified NPs and decide if each NP is functioning as a subject, object, indirect object, copula subject, copula complement, or oblique. What are the grammatical properties of the clause or phrase that helped you to determine this?

a. *mriŋ=ko=la*^{22} *kola*^{52} *kje-pʌ*^{44} *mo*^{22} *mu*^{22}
woman=DEF=GEN dress pretty-NMLZ COP EVID
'The woman's dress is pretty.'

b. *mriŋ=ko=tse*^{22} *kola=ko=ri*^{22} *kʌtti*^{22} *upahar=tse* *pĩ-tsi*^{22}
woman=DEF=ERG child=DEF=LOC many gift=PL give-PRF
'The woman gave many gifts to the child.'

c. *kʰimi=juŋ*^{22} *kola*^{22} *ŋʌ*^{22} *mo*^{22} *mu*^{22}
3PL=COM child five COP EVID
'They have five children.'

d. *nakju=ko=tse*^{22} *nokor=ko=ri*^{22} *tʃʰĩ-tsi*^{22}
dog=DEF=ERG cat=DEF=P catch-PRF
'The dog caught the cat.'

e. *kʰi=tse*^{22} *siki*^{22} *tsʌ-tsi*^{22}
3SG=ERG food eat-PRF
'He ate (the) food.'

f. *kjʌ*^{52} *tʰaŋ=ri*^{22} *ʈu-tsu*^{22} *mo*^{22}
2SG floor=LOC sit-PROG COP
'You are sitting on the floor.'

g. *ŋʌ=lʌ*^{22} *ama=tse*^{22} *ŋʌ=ri*^{22} *mʷi*^{42} *pʰrʌ*^{42} *pĩ-tsi*^{22}
1SG=GEN mother=ERG 1SG=LOC money hundred give-PRF
'My mother gave me one hundred rupees (unit of money).'

h. *nakju*^{22} *nʌ-pʌ=ko*^{22} *nu-tsi*^{42}
dog sick-NMLZ=DEF sleep-PRF
'The sick dog slept.'

i. *naraŋ*^{22} *lo=ri*^{52} *ŋʌ*^{22} *nepal=ri* *jʌ-tsi*^{22}
before year=LOC 1SG Nepal=LOC go-PRF
'Last year I went to Nepal.'

j. *ŋʌ=tse*^{22} *ŋʌ=lʌ*^{22} *kikja=ri* *mʷi*^{42} *pʰrʌ*^{42} *jaŋ-tsi*^{22}
1SG=ERG 1SG=GEN pocket=LOC money hundred find-PRF
'I found one hundred rupees in my pocket.'

LANGUAGE PROFILE 4

Finnish

4.1 Introduction

Finnish, called *suomi* by its speakers, is spoken mainly in the country of Finland. There are sizable minorities of speakers of Finnish in Sweden and in western Russia, and smaller groups in other Scandinavian countries, Estonia, Australia, and North America. This area is displayed in Figure LP4.1. There are approximately 6 million speakers of Finnish.

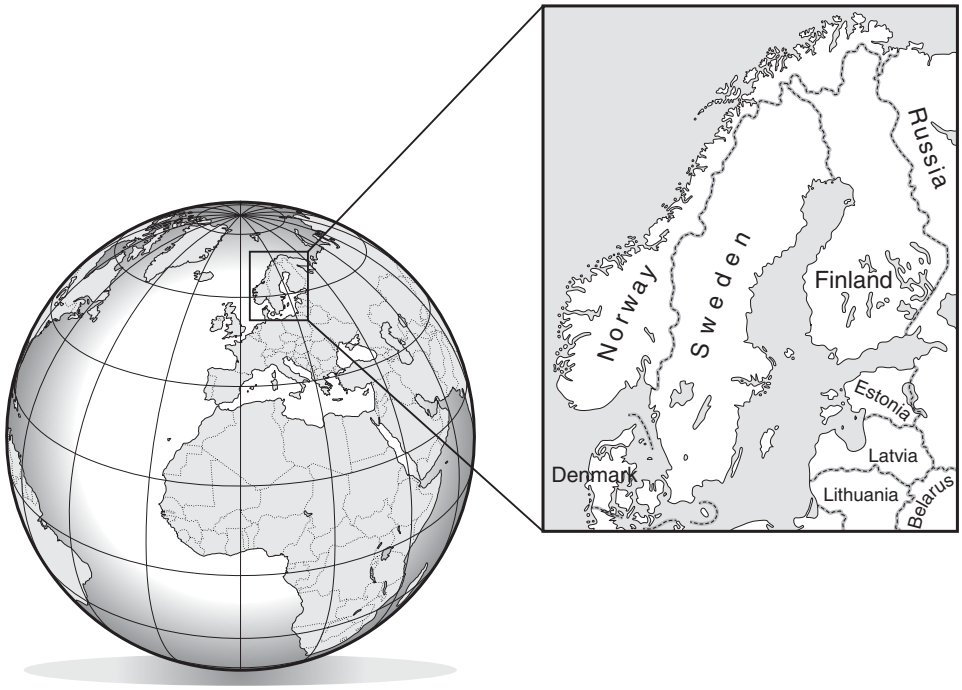


Figure LP4.1 The geographical area where Finnish is spoken

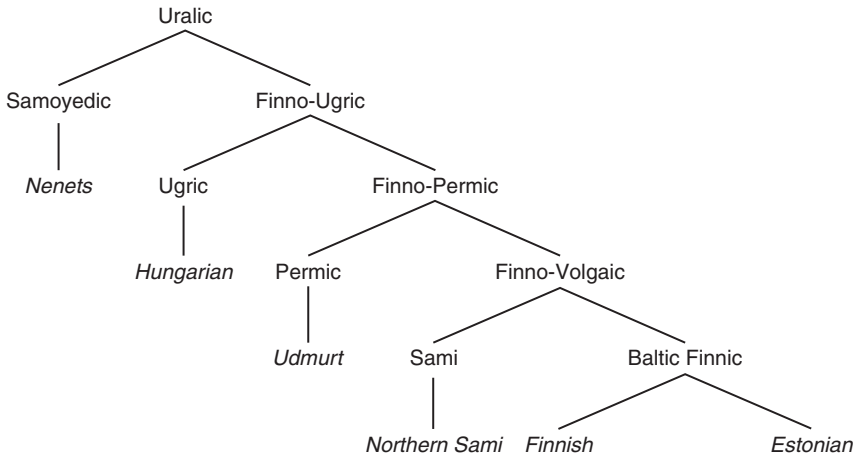


Figure LP4.2 Uralic family tree (simplified; languages listed are examples)

4.1.1 Genetic Affiliation

Finnish belongs to the Baltic-Finnic branch of the Finno-Ugric family of languages which is in turn a part of the Uralic family. Some of its closest relatives are Meankieli, a minority language spoken in Sweden, and Estonian. Finnish is also related to the Sami languages spoken in Lapland and to Hungarian, and more distantly to the Samoyed languages, which form the other group of the Uralic languages in addition to the Finno-Ugric languages.

4.1.2 Official Status and Viability

Finnish is one of the two official languages of Finland and is spoken by more than 90 percent of Finns as a first language. The other official language is Swedish, spoken by less than 6 percent of the population (see Textbox LP4.1). Finnish is one of the official languages of the European Union, and it also has official status as a minority language in Sweden. All Finnish-speaking residents of the Nordic countries are entitled to use their language in official contexts. In Finland, education in Finnish is available through the university level,

TEXTBOX LP4.1 **BILINGUAL STREET SIGNS**

All street signs in Helsinki are in both Finnish and Swedish, with Finnish, the majority language in the municipality, on top, and Swedish, the minority language, on the bottom. In areas where Swedish speakers are in the majority, Swedish is on top.

The sign shown in Figure LP4.3 is on *Yliopistonkatu* 'University Street.' The word *yliopisto* 'university' is formed from native sources, but the word *katu* 'street' is borrowed from Swedish, as you might notice by comparing it to the Swedish name of the street (*Universitetsgatan*). All blocks in downtown Helsinki have names. This block is named for the giraffe, *kirahvi*, although the only giraffes in Finland are at the zoo.

Figure LP4.3 Bilingual street sign in Helsinki

there is a productive literary tradition, and all types of media are available in Finnish. For these reasons, in spite of its relatively small speech community, Finnish is not endangered.

4.2 Typological Overview

4.2.1 Phonology

Finnish has a relatively simple inventory of consonants: it has three voiceless stops [p, t, k], one voiced stop [d] (some dialects, though, lack this sound), three nasals [m, n, ŋ], three fricatives [s, h, v], two liquids [l, r], and the semivowel [j]. Borrowed words can also contain [b] and [g].

Finnish has eight vowels. In the International Phonetic Alphabet, these are represented as [i, e, y, ø, æ, a, u, o]. Two of the vowels, [y] and [ø], are front rounded vowels, which are pronounced with the tongue position of [i] and [e] respectively, but with the lips fully rounded. These sounds are relatively uncommon in the world's languages; however, they may be familiar to you from French (e.g., [y] in *rue* 'street,' and [ø] in *peu* 'few'), German (e.g., [y] in *kühe* 'cows' and [ø] in *schön* 'beautiful'), or Cantonese (e.g., [y] in *syu*[1] 'book' and [ø] in *heu*[1] 'boots'). English lacks these vowels.

Finnish also has quite a few diphthongs, among them are [yø], [øy], [ie], [æi], [ui], and [iu]. Some of these diphthongs form whole words, e.g., [yø] *yö* 'night' and [ui] *ui* 'swim!'

TABLE LP4.1 Inessive and allative nouns illustrating vowel harmony patterns

INESSIVE		ALLATIVE		
Singular	Plural	Singular	Plural	
[kylæ-ssæ]	[kyl-i-ssæ]	[kylæ-lle]	[kyl-i-lle]	'village'
[pøydæ-ssæ]	[pøyd-i-ssæ]	[pøydæ-lle]	[pøyd-i-lle]	'table'
[kuva-ssa]	[kuv-i-ssa]	[kuva-lle]	[kuv-i-lle]	'picture'
[koira-ssa]	[koir-i-ssa]	[koira-lle]	[koir-i-lle]	'dog'

SIDEBAR LP4.1
For other examples of languages with vowel harmony, see Textbox 3.3 on assimilation processes.

Finnish has **vowel harmony**; this means that only certain vowels can occur with each other in Finnish words. Three of the front vowels, [y, ø, æ], cannot occur in the same word with any of the back vowels, [a, o, u]. However, the other two front vowels, [i, e], are neutral with respect to vowel harmony: they can occur in the same word with either of the other two groups of vowels. These patterns can be seen in Table LP4.1, which provides examples of singular and plural nouns with two case suffixes, the inessive (*-ssA;* where the capitalized vowel symbol indicates that it undergoes harmony) and the allative (*-lle*). (More information on Finnish case-marking is given below.) Notice that the vowels in the singular and plural inessive suffixes are affected by vowel harmony: the front vowel [æ] is found when the root has [y] or [ø]; and the back vowel [a] is found when the root contains [u] or [o]. Contrast this with the vowel in the allative suffix and with the plural [i], which are neutral vowels and so do not change.

Finnish has both long vowels and long consonants; thus, length is phonemic for both consonants and vowels. We can see this in the two minimal sets in Example (1).

(1) [tuli] 'fire' [muta] 'mud'
[tuːli] 'wind' [muːta] 'other'
[tulːi] 'customs' [mutːa] 'but'

TEXTBOX LP4.2 **GEMINATE CONSONANTS**

Geminate consonants occur only rarely in English, when they arise across morpheme boundaries. For example, there is a geminate /n/ in the word *unnamed* (compare this with *unaimed*). Geminate consonants may also be familiar to you if you have heard native pronunciations of Italian; e.g., there is a geminate stop before the final vowel in *spaghetti*.

Long consonants are also called **geminate** consonants (see Textbox LP4.2). In addition to having increased duration, they form a bridge across two syllables, closing off one and starting another.

Stress is predictable in Finnish: it always falls on the first syllable of a word.

4.2.2 Morphology

Finnish has a relatively complex system of inflectional morphology, especially on nouns, adjectives, and pronouns (referred to as **nominals** in Finnish linguistics). It is especially known for its case-marking; it has one of the largest numbers of cases of any language in the world. A given nominal can have up to fifteen different case forms. Case-marking will be discussed in detail below.

SIDEBAR LP4.2
For more on clitics, see the Manange Language Profile, Textbox LP3.5.

Finnish is predominantly a suffixing language. Number, case, and agreement with a possessor are all suffixed on nominals, while tense, mood, and person are suffixed on verbs. There is also a system of clitics, which occur on various word classes and have a variety of meanings. One example is the question clitic *=kO* (which undergoes vowel harmony; the capital O in the transcription means that one of two vowels, [o] or [ø], can occur there, depending on the harmonic pattern of the root). This can be affixed to a questioned constituent of any word class. Some examples of words with complex morphology are given in (2).

STOP AND REFLECT LP4.1 **ANALYZING MORPHEME COMBINATIONS**

Use the morpheme glosses below to work through each example in (2) and see how the meanings are composed.

(A full list of the glosses used in this language profile can be found in a textbox at the end.)

1SG	first-person singular	INE	inessive ('in')
1PL	first-person plural	PL	plural
3PL	third-person plural	POSS	possessive
AD	adessive ('on')	PST	past
COND	conditional	Q	interrogative
CLT	clitic		

(2) Finnish suffixes

a. *matko-i-lla-ni*
travel-PL-AD-1SG.POSS
'on my trips'

b. *mets-i-ssä-mme*
forest-PL-INE-1PL.POSS
'in our forests'

c. *osa-isi-n=ko=han*
be.able-COND-1SG=Q=CLT
'I wonder if I might be able to.'

d. *luk-i-vat=kin*
read-PST-3PL=CLT
'They also read.'

e. *keräs-i-mme=kö*
gather-PST-1PL=Q
'Did we gather?'

SIDEBAR LP4.3

TRANSCRIPTION NOTE

Finnish orthography	IPA
ä	[æ]
ö	[ø]

Finnish has two tense suffixes, present and past, as illustrated in (3).

(3) Finnish tenses

a. *äiti* *teke-e* *täs* ruoka-a
mother make-3SG.PRS PROX food-PRT
'Mother fixes food here.'

b. *äiti* *tek-i* *täs* *ruoka-a*
mother make-3SG.PRS PROX food-PRT
'Mother fixed food here.'

Perfect and past-perfect forms can be composed using the verb *olla* 'be' as an auxiliary. The main verb is in a form called a participle. Examples are given in (4).

(4) **a.** *äiti* *on* *teh-ny* *täs* *ruoka-a*
mother be.3SG make-PTCP PROX food-PRT
'Mother has fixed food here.'

b. *äiti* *ol-i* *teh-ny* *täs* *ruoka-a*
mother be.NEG-PST make-PTCP PROX food
'Mother had fixed food here.'

Finnish also uses a special auxiliary verb to mark negation. This verb has limited inflection. It does have person marking; however, it does not inflect for tense. The tense is indexed by the different forms of the main verb, as can be seen by comparing (5) and (6).

(5) *e-n* *ol-e* *nyt* *koto-na*
NEG-1SG be-PRS now home-ESS
'I am not at home now.'

(6) *e-n* *ol-lut* *eilen* *koto-na*
NEG-1SG be-PTCP yesterday home-ESS
'I was not at home yesterday.'

4.2.3 Syntax

Adpositions

Finnish has both prepositions and postpositions, although postpositions are more common. The dependent noun phrases that occur with prepositions are most commonly in the partitive case, while those that occur with postpositions are most commonly in the genitive case. (The cases are discussed below.) You can see this difference in case by comparing the pronoun that occurs with the preposition in (7), and that which occurs with the postposition in (8).

SIDEBAR LP4.4

To refresh your memory about adpositions (prepositions and postpositions), see Section 5.6.

(7) *ilman* *sinu-a*
without 2SG-PRT
'without you'

(8) *sinu-n* *kanssasi*
2SG-GEN with
'with you'

Some adpositions can be used as both prepositions and postpositions, and may accordingly co-occur with noun phrases which are either partitive or genitive. For these adpositions, there may be a difference in meaning in postpositional and prepositional use, as illustrated below for *ympäri* 'around.'

(9) *talo-n* *ympäri*
house-GEN around
'around the (circumference of) house'

(10) *ympäri* *talo-a*
around house-PRT
'(scattered) around the house'

Constituent Order

Constituent order in Finnish can be said to be flexible, as there is no arrangement of S, V, and O in a basic sentence that is ungrammatical; that is, all the orders in (11) are grammatical in Finnish. However, when the language is used, SVO is the overwhelmingly most common word order, a fact that can be determined by quantitative analysis of both written and spoken Finnish discourse.

(11) Possible constituent orders in Finnish

Marja *syö* *omenoit-a*
Marja.NOM eat.3SG apple.PL-PRT
'Marja is eating apples.'

syö	*Marja*	*omenoita*
omenoita	*Marja*	*syö*
omenoita	*syö*	*Marja*
Marja	*omenoita*	*syö*
syö	*omenoita*	*Marja*

4.3 Case in Finnish

As noted above, Finnish is rich in case morphology. In a study of 261 languages, only 24 were found to have more than ten cases (Iggesen 2011). The largest number of cases that has been found in a single language is twenty-one. These were in Hungarian, a language related to Finnish. Finnish itself has fourteen productive cases. These are presented in Table LP4.2 below, which shows the inflection of the noun *talo* 'house.' The names of the cases (taken from Latin) are also given. The meanings of the cases and uses of the cases will be discussed below.

TABLE LP4.2 The fourteen Finnish cases, illustrated with the noun *talo* 'house'

NOMINATIVE	talo	
GENITIVE/ACCUSATIVE	talo-n	core cases
PARTITIVE	talo-a	
INESSIVE	talo-ssa	
ELATIVE	talo-sta	
ILLATIVE	talo-on	
ADESSIVE	talo-lla	
ABLATIVE	talo-lta	
ALLATIVE	talo-lle	oblique cases
TRANSLATIVE	talo-ksi	
ESSIVE	talo-na	
ABESSIVE	talo-tta	
INSTRUCTIVE	talo-in	
COMITATIVE	talo-ine-en	

SIDEBAR LP4.5
See also the description of some Latvian cases in Section 4.7.

The nominative, partitive, accusative, and sometimes also the genitive are the core cases in Finnish; they are used to mark core arguments such as subjects and objects. The rest of the cases are the oblique cases, which mostly code a variety of locational semantic roles (these expand the inventory given in Section 6.3.5).

4.3.1 Core Cases

Most subjects in Finnish are in nominative case. The Finnish verb agrees with the subject when it is nominative, as in Example (12) below. Objects can be in the accusative case or the partitive case. Objects are in the accusative case if the referent of the object is affected by the action of the verb. If the referent is not affected, then the object is in partitive case. For example, objects in negated sentences, in which, of course, the object is not affected at all, are in the partitive, as in (12).

(12) *minä* *e-n* *juo* *kahvi-a*
1SG.NOM NEG-1SG drink coffee-PRT
'I'm not drinking coffee; I don't drink coffee.'

In addition, the object is in partitive case when the referent of the object NP is indefinite, when it is only partially affected by the action expressed by the verb, or when the verb does not refer to specific events with completed endpoints. Hence the partitive case is found in (13).

(13) *äiti* *tek-i* *täs* *ruoka-a*
mother.NOM make-PST here food-PRT
'Mother fixed food here.'

This clause does not express a particular instance of Mother cooking, with a clear endpoint, or particular food being prepared, but rather a generic process of food-making without a clear endpoint. Contrast this with Example (14), where the accusative case occurs.

(14) *mummo=kin* *aina* *laitta-a* *se-n* *laakeese-en*
grandma.NOM=CLT always put-3SG 3SG-ACC shallow-ILL
'Grandma also always puts it in a shallow [dish].'

Here, the action has a clear endpoint of the food being in the shallow dish. Also, after Grandma puts the food in the shallow dish, it has been affected by being transferred into a location.

Recipients in ditransitive clauses are also core arguments; they are in the allative case as exemplified in (15).

(15) *minä* *osta-n* *sinu-lle* *kahvi-n*
1SG.NOM buy-GEN 2SG-ALL coffee-ACC
'I'm buying/will buy you a (cup of) coffee.'

4.3.2 Oblique Cases

The oblique cases convey a wide range of meanings, which are roughly summarized in Table LP4.3.

TABLE LP4.3 The Finnish oblique cases (also called "local cases") and their meanings

Latin term	Inflection of *talo* 'house'	Approximate meanings
INESSIVE	talo-ssa	'in, inside'
ELATIVE	talo-sta	'from (the interior of)'
ILLATIVE	talo-on	'into'
ADESSIVE	talo-lla	'on, at, near'
ABLATIVE	talo-lta	'from the outside/surface/vicinity of'
ALLATIVE	talo-lle	'onto'
TRANSLATIVE	talo-ksi	'for, (transformed) into'
ESSIVE	talo-na	'as, at'
ABESSIVE	talo-tta	'without'
INSTRUCTIVE	talo-in	'with, by means of'
COMITATIVE	talo-ine-en	'accompanied/equipped with'

SIDEBAR LP4.6
You may have noted that the first-person singular pronoun here is *mää*, while in previous examples it was *minä*. This represents regional variation (see Chapter 11). The presence of socially determined variation is frequently a feature of examples taken from naturally occurring discourse, such as these.

As you can see, the majority of the meanings are concerned with spatial arrangement and movement trajectories; these are termed "local cases" (similar to the locative case in other languages) as they indicate different types of location.

Finnish has both an "internal" and an "external" set of local cases. To simplify slightly, the basic meaning of the internal local cases (the inessive, elative, and illative) is to express movement to or from, or location *on the inside of* some reference point. The external cases (adessive, ablative, and allative) express movement to or from, or location *on the outside of* something. Consider the following examples.

(16) 1. *ja* *si-in* *puu-hella-<u>lla</u>*
and there-LAT wood-stove-AD
'and there on the wood stove'

2. *kerran* *ni*
once PTC
'one time'

3. *mää* *illa-lla* *paisto-i-n*
1SG evening-AD fry-PST-1SG
'I was frying [mushrooms] in the evening.'

In line 1, the noun *puuhellalla* 'on the wood stove' is in the adessive case; the choice of case here could be thought to be motivated by the fact that frying happens on the outside surface of the stove, with the stove providing support. Compare this with the next example.

(17) 1. *kana* *tul-i* *sisä-än* *ja*
chicken come-PST inside-ILL and
'[A] chicken came in and'

2. *hyppä-s* *kiisseli-vati-<u>in</u>*
jump-PST pudding-dish-ILL
'jumped into [a] pudding dish'

In line 2, the word *kiisselivatiin* 'into the pudding dish' is in the illative case. Here, the case can be thought to express the movement of the chicken to the inside of the pudding dish. Notice also that the adverb *sisään* in line 1 is in the illative case as well. It is not uncommon for locational adverbs and even adpositions to have partial paradigms in the locative cases; this is the case with the adverb *sisä-*, which has forms for all the local cases. See Textbox LP4.3 for a note on the historical development of cases in Finnish.

TEXTBOX LP4.3 **A HISTORICAL NOTE ON THE DEVELOPMENT OF FINNISH CASES**

The internal and external local cases developed relatively recently, perhaps from postpositions. Before that, the partitive, the essive, and the lative cases expressed location. They expressed, respectively, movement from, location in, and movement to a reference point. These cases are still used in connection with some adverbials. For example, the partitive is used to express motion away in *ulko-a* 'from the outside' and *koto-a* 'from home.' We find the essive used in expressions indicating static location, such as *ulko-na* 'outside' and *koto-na* 'at home.' With most nouns in modern Finnish, the partitive is a core case, marking objects (as discussed above), and the essive expresses a state or role, e.g., *opettaja-na* 'as a teacher,' *sairaa-na* '(while being) sick.' The lative shows up in certain adverbs such as *ulo-s* 'out, to the outdoors.'

4.4 A Syntactic Conundrum: The Habitive Construction

The local cases are a considerable resource in the Finnish language. They are also used to express more abstract relations than mere location. An important use of the adessive case is in a particular type of possessive construction called the habitive. This construction is one way that Finnish indicates possession, a function accomplished in English by the verb *to have*.

(18) 1. *mä* *muista-n* *sillon* *ku*
1SG remember-1SG then when
'I remember then when'

2. ***mei-ll*** ***ol-i*** ***se*** *Hirvensalo-n* *saunakamari*
1PL-AD be-PST DEM Hirvensalo-GEN sauna.room.NOM
'we had the Hirvensalo sauna room'

3. *ol-i* *viel* *semmose-s* *asuttava-s* *kunno-ssa*
be-PST still such-INE live.PASS. PTCP-INE condition-INE
'(We) had (it) in a liveable condition'

In the Finnish habitive construction, the possessor NP (in this example *mei-ll(ä)*, given in bold) is in the adessive case, and the head noun of the possessed NP is in either the nominative (e.g., the underlined *Hirvensalon saunakamari* 'the Hirvensalo sauna room' in this example), the partitive, or (if the possessed NP is a pronoun) the accusative case. (See Textbox LP4.4 for more on *saunakamari* in Finland.)

TEXTBOX LP4.4 **THE SAUNAKAMARI IN FINLAND**

The sauna (steam bath) is an important part of traditional Finnish culture. The term *saunakamari* literally means 'sauna room,' but this is not a very satisfactory translation. The word refers to a room in a sauna building. Traditionally this room was separate from the room with the sauna itself and could be used as a dressing room. In earlier times, a sauna was often built on a new farm before the main living building was built, and in that case, the *saunakamari* could be used as an initial living space with cooking and sleeping facilities. The photograph in Figure LP4.4 shows a modern *saunakamari*. It is used as a sauna dressing room, but it also serves as an extra sleeping area. There is also a hot plate – suitable for simple cooking – on top of the wood stove, with which the room can be heated during the cold time of the year.

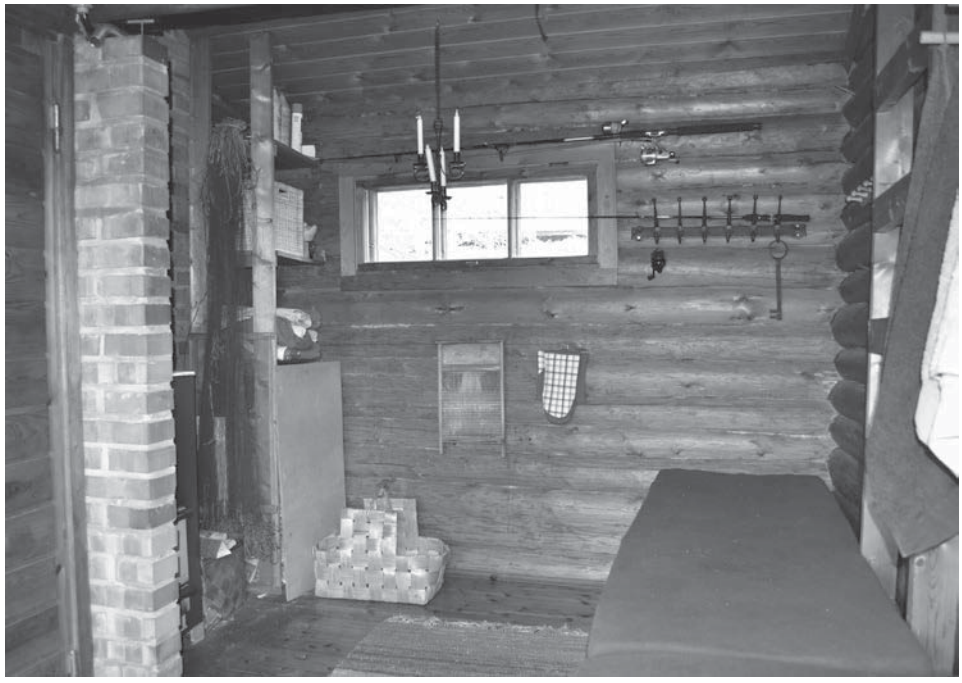


Figure LP4.4 A modern *saunakamari* (photo by Raimo Hyvönen)

This causes problems for the constituency analysis of the possessive construction. What should be considered the subject of the expression? Most Finnish subjects are nominative, are clause-initial, and trigger agreement in the verb. An example is the first clause in (18a), *mä muista-n* 'I remember,' where the clause-initial subject is a nominative first-person pronoun and the verb is accordingly in the first-person singular form.

The possessive construction has two core arguments: the possessor and the possessed. Which is the subject? The possessor argument is not a very good candidate, since it is in an oblique case (the adessive), and the verb does not agree with it in either person or number; the possessor is a first-person plural pronoun, but the verb is in the third-person singular form.

On the other hand, the possessed noun phrase is not a very typical subject either. It is clause-final and although it can be in the nominative case, as in Example (18) above, it can also be in the partitive or even the accusative case. As the partitive and accusative cases are typically found on objects (see Textbox LP4.5), there is an inherent contradiction between the possessed noun carrying these case-markers and the grammatical relation of subject.

TEXTBOX LP4.5 **WHY PARTITIVE CASE FOR OBJECTS?**

As we have seen, Finnish shows clear historical evidence of a dynamic interaction between core and oblique cases. Oblique cases have been recruited into more grammatical uses and so now mark core arguments.

How might a noun phrase carrying an oblique case-marker – such as the partitive – be reanalyzed as a grammatical object? Consider Example (a), which has a partitive noun phrase.

TEXTBOX LP4.5 (*cont.*)

a. *söimme* *kala-a*
eat-PST-1PL fish-PRT
'We ate (some) fish'

In modern Finnish, this clause, with its partitive noun phrase, means 'we ate (some) fish,' where *kala-a* is a partitive-marked object. Earlier, however, it might have meant something like 'we ate from the fish,' where the partitive noun phrase would have been oblique. Of course, a person eating *from* a fish logically entails a person eating fish, so semantically it makes sense to reinterpret the oblique locational noun phrase as a (core) object. Some of the semantics of the partitive expression remain, including the implication that only a partial, indefinite amount of the fish was eaten.

This example shows that there is a dynamic interplay between core and oblique cases, with the semantics of specific cases allowing for reinterpretation of the grammatical nature of arguments.

There is further evidence that the possessed noun phrase has the syntactic behavior of an object. This is found in the negation of the habitive construction, which necessarily puts the possessed noun phrase in the partitive case, as in (19), which is the negated counterpart of (18).

(19) *mei-ll* *ei* *ol-lut* *si-tä* *Hirvensalo-n* *sauna-kamari-a*
1PL-AD NEG be-PST.PTCP DEM-PRT Hirvensalo-GEN sauna-room-PRT
'We didn't have that Hirvensalo sauna room.'

Compare this with the marking of the object in the affirmative and negative versions of the simple transitive clause in (20) and (21).

(20) *toinen* *on* *laitta-nu* *se-n* *vielä*
another be fix-PST.PTCP 3SG-ACC even
'Someone else has even fixed it.'

(21) *toinen* *ei* *oo* *laitta-nu* *si-tä* *vielä*
another NEG be fix-PST.PTCP 3SG-PRT even
'Someone else hasn't even fixed it.'

In these examples, the object *se-n* is in the accusative case in the affirmative version in (20), yet in the partitive case, *si-tä*, in the negative version in (21). The shift to partitive under negation shows an exact syntactic parallel between the possessed noun phrase in the habitive construction and the object noun phrase of a transitive clause.

We may thus want to say that in the habitive construction, there is not very good evidence at all for the existence of a subject constituent, even though ordinary Finnish transitive and intransitive clauses give clear evidence of subject and object constituents. Thus, it is reasonable to consider Finnish a nominative-accusative language, but to recognize that the

SIDEBAR LP4.7
For a brief discussion of nominative-accusative versus other types of alignment systems, see the Bardi Language Profile, Textbox LP8.3.

grammatical relations of subject and object are not relevant in every type of construction. (This is also true for English; consider cases such as *There is a boat* or *It is raining*.)

SUMMARY

Finnish is a Baltic-Finnish language which has a number of features that are quite unlike those of the Germanic, Romance, and Slavic languages that are found throughout much of Europe. Especially notable features include vowel harmony, geminate consonants, the presence of both prepositions and postpositions, and extensive inflectional morphology. Within the latter, the case system is particularly remarkable for the fine-grained semantic distinctions that are made with regards to spatial arrangement and movement trajectories. Finnish is also instructive with respect to grammatical relations; while some constructions clearly delineate subjects and objects, these categories are not relevant to the habitive construction.

TEXTBOX LP4.6 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE

Convention	Meaning	Convention	Meaning
1	first person	LAT	lative
2	second person	NEG	negation
3	third person	NOM	nominative
ACC	accusative	PASS	passive
AD	adessive	PL	plural
ALL	allative	POSS	possessive
CLT	clitic	PROX	proximal
COND	conditional	PRS	present tense
DEM	demonstrative	PRT	partitive
ESS	essive	PST	past tense
GEN	genitive	PST.PTCP	past participle
ILL	illative	PTC	particle
IMPRS	impersonal	PTCP	particple
INE	inessive	Q	interrogative
INF	infinitive	SG	singular

SUGGESTIONS FOR FURTHER READING

Cambell, **Lyle**, and **Marja-Liisa Helasvuo**. 2006. *Grammar from the human perspective: Case, space, and person in Finnish*. CILT 277. Amsterdam: John Benjamins.

This book has a number of interesting articles on various aspects of Finnish, especially on case-marking.

Huumo, **Tuomas**. 2010. "On directionality and its motivation in Finnish expressions of sensory perception." *Linguistics* **48**.1: 49–97.

This article concerns the use of local cases with verbs of perception. This would be interesting reading for those who might be intrigued by Exercise 3.

Karlsson, **Fred**. 2018. *Finnish: A comprehensive grammar*. London and New York: Routledge.

This book provides a comprehensive description of the sound system and grammar of Finnish, based on contemporary usage.

EXERCISES

1. Finnish exhibits a series of alternations in consonants referred to as lenition. This can be seen in the examples below, which show the regular consonant realization that is found in both the nominative and the partitive forms, and the lenited consonant realization that is found in the genitive forms.

i. List each change exemplified in the data (e.g., t > d).
ii. Which natural classes of sound are affected by the lenition process? Can you write any general rules that apply to more than one example?
iii. What would you predict would be the genitive form of *kukka* 'flower'?

	NOM	PRT	GEN	
a.	*mato*	*matoa*	*madon*	'worm'
b.	*tapa*	*tapaa*	*tavan*	'manner'
c.	*ratti*	*rattia*	*ratin*	'steering wheel'
d.	*tauko*	*taukoa*	*tauon*	'pause'
e.	*tappi*	*tappia*	*tapin*	'plug'
f.	*vaara*	*vaaraa*	*vaaran*	'danger'
g.	*kello*	*kelloa*	*kellon*	'bell'
h.	*runo*	*runoa*	*runon*	'poem'

2. Finnish local cases. On the basis of what you have read about the Finnish local cases, try to determine which local case the boldfaced NP should be in.

a.	*Laitoin lasit* ***kaappi***__	'I put the glasses in the cupboard.'
b.	***Pöydä***__ *on kukkia.*	'There are flowers on the table.'
c.	*Istahdin* ***terassi***__	'I sat down on the patio.'
d.	*Unohdin laukkuni* ***bussi***__	'I left my purse on the bus.'
e.	*Poika liukastui* ***jää***__	'The boy slipped on the ice.'
f.	*Poika liukastui* ***jää***__	'The boy slipped (and fell) on the ice.'
g.	***Metsä***__*on pimeää*	'It's dark in the forest.'
h.	*Näin paraatin* ***terassi***__	'I saw the parade from the patio.'
i.	*Liimasin tarran* ***puskuri***__	'I glued the sticker on the bumper.'
j.	*Kiinnitin koukun* ***seinä***__	'I fastened the hook onto the wall.'

3. Explain these unconventional uses of English prepositions made by Finnish speakers, based on what you know about Finnish cases. Can you make a guess as to why there is no preposition before 'your lost articles' in (b)?

a. Sign seen in a University of Helsinki bathroom:

No hand towels into the toilet bowl

b. Sign seen at the indoor food shopping hall, Kauppahalli, in Helsinki:

Ask your lost articles from the hall supervisor

4. Consider the case of the subject in the following examples. When are subjects marked as genitive? What happens with verb agreement with genitive subjects?

   a. *vielä=kö* *te* *leiki-tte* *täällä*
   still=Q 2PL play-2PL PROX
   'Are you still playing here?'

   b. *teidä-n* *pitä-ä* *nyt* *menn-ä* *nukku-ma-an*
   2PL-GEN must.3SG.PRS now go-1.INF sleep-3.INF-ILL
   'You must go and sleep now.'

   c. *on=ko* *meidä-n* *pakko*
   be=Q 1PL-GEN force
   'Do we have to?'

   d. *me* *halua-mme* *vielä* *leikki-ä*
   1PL want-1PL still play-1.INF
   'We still want to play.'

   e. *no* *ei* *teidä-n* *ihan* *heti* *tarvitse* *menn-ä*
   PTC NEG.3SG 2PL-GEN quite immediately need go-1.INF
   'Well, you don't need to go right away.'

   f. *e-mme* *me* *enää* *kaua-a* *leiki*
   NEG-1PL 1PL any.more long-PRT play
   'We won't play for a long time.'

5. Finnish object case. In this exercise, objects are marked either as accusative, with the suffix *-n*, or as partitive, with the suffix *-a*, or they are unmarked and nominative, with no suffix. Determine under what conditions objects are nominative in Finnish. (*Note*: Examples (h–j) have a suffix glossed 'impersonal' which is used in a syntactic construction where the subject is unexpressed.)

   a. *lu-i-n* *kirja-n*
   read-PST-1SG book-ACC
   'I read a/the book.'

   b. *lu-i-n* *kirja-a*
   read-PST-1SG book-PRT
   'I was reading a/the book.'

   c. *osta* *auto*
   buy.2SG.IMP car
   'Buy a car!'

   d. **osta* *auto-a*

   e. **osta* *auto-n*

   f. *e-n* *osta* *auto-a*
   NEG-1SG buy car-PRT
   'I won't buy a/the car.'

   g. *osta-n* *auto-n*
   buy-1SG car-ACC
   'I'm buying/going to buy a car.'

   h. *oste-taan* *auto*
   buy-IMPRS car
   '(Some people) buy a car/let's buy a car.'

i. *juo-daan* *olut-ta*
drink-IMPRS beer-PRT
'(Some people) drink beer/let's drink beer.'

j. *juo-daan* *olut*
drink-IMPRS beer
'(Some people) drink a beer/let's drink a beer.'

k. *halua-n* *osta-a* *auto-n*
want-1SG buy-INF car-ACC
'I want to buy a car.'

l. *minu-n* *pitää* *osta-a* *auto*
1SG-GEN must buy-1.INF car
'I must buy a car.'

m. *minu-lla* *on* *ajatus* *osta-a* *auto*
1SG-AD be thought buy-1.INF car
'I have an idea to buy a car.'

LANGUAGE PROFILE 5

Nuuchahnulth (Nootka)

5.1 Introduction

Nuuchahnulth [nu:tʃa:ʔnuɬ] is spoken on the west coast of Vancouver Island in southwestern British Columbia, Canada. The language and the people were formerly known as *Nootka*, a name used since the time of contact by Captain Cook. However, since the name *Nuuchahnulth* (meaning '[those who live] all along the mountains') was adopted as the official designation by the Nuuchahnulth people in 1978, it has been the preferred designation for themselves and their language.

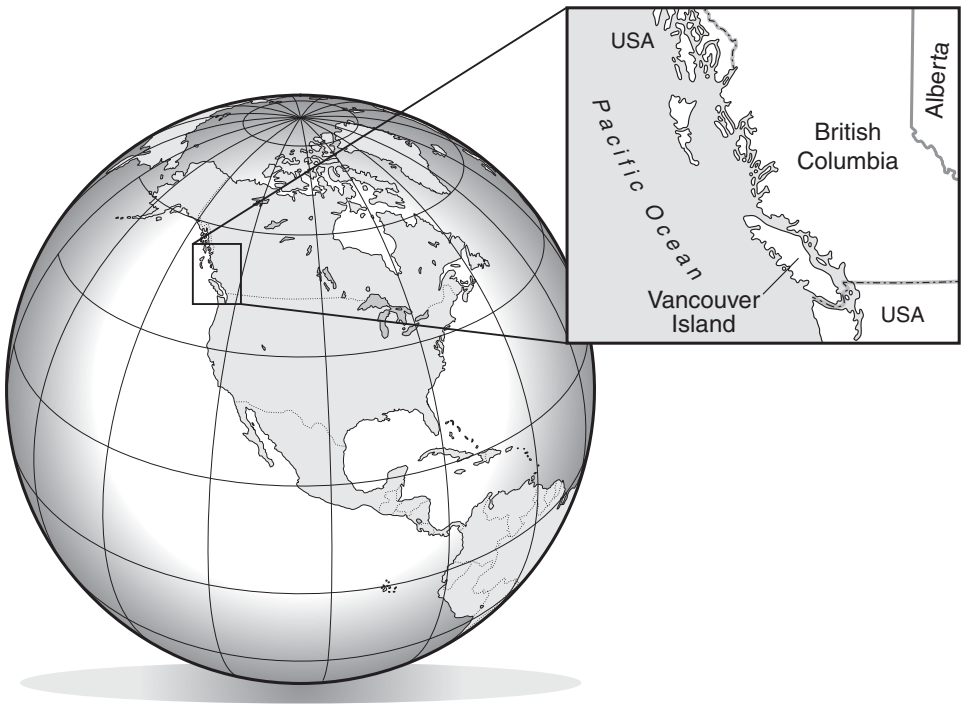


Figure LP5.1 Vancouver Island

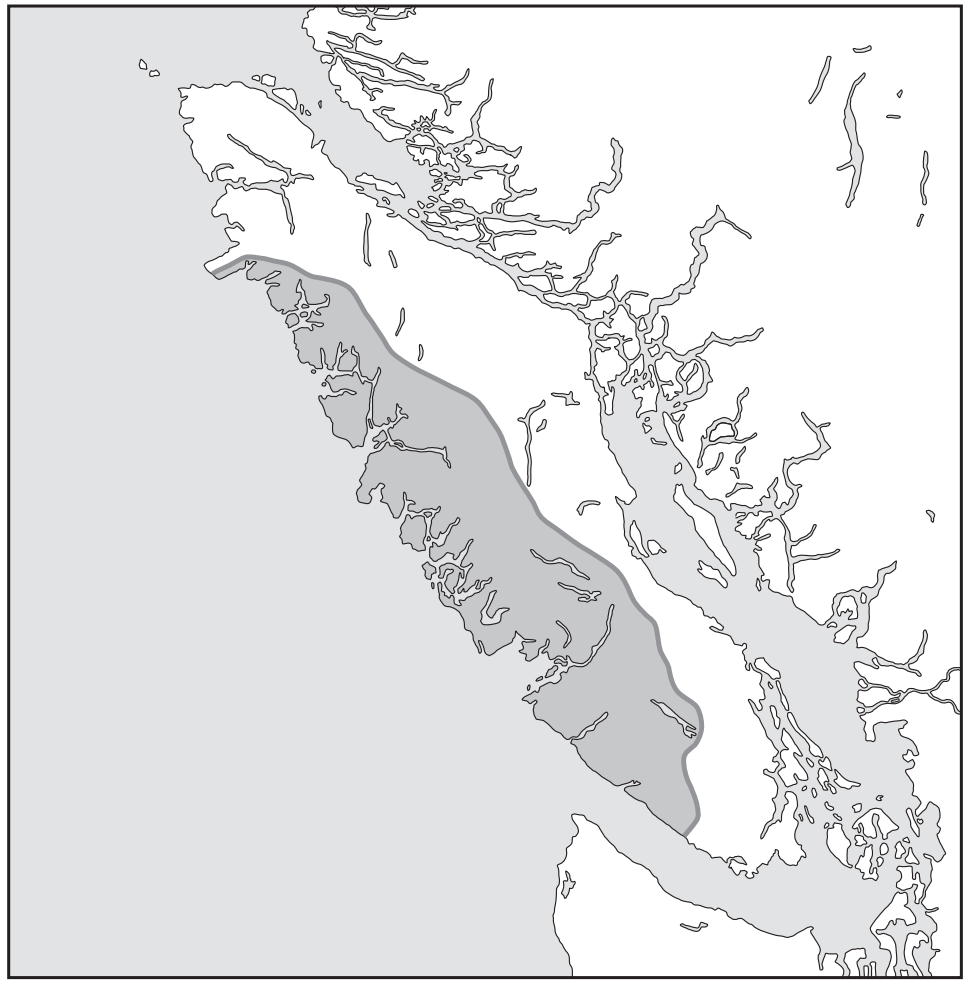


Figure LP5.2 Map of Nuuchahnulth area on Vancouver Island

Nuuchahnulth belongs to the southern branch of the Wakashan language family. There is a significant amount of dialectal variation within the language, especially in phonology. However, owing to language endangerment and amalgamation among various groups that were previously distinct, the dialectal differences are being lost to a certain degree.

5.1.1 Speech Community

The number of speakers has been estimated to be a few hundred, but the number is decreasing very rapidly. Most fluent speakers are in their seventies and higher and are also very fluent in English. Younger Nuuchahnulth community members are monolingual English speakers. Everyday communication within the local communities is conducted almost exclusively in English, and Nuuchahnulth is heard only occasionally, for example, in ceremonial speeches. Consequently, English is becoming the primary language of communication

even for fluent Nuuchahnulth speakers, and Nuuchahnulth is not actively acquired by children. In these respects Nuuchahnulth can be characterized as a highly endangered language. Efforts to revitalize the traditional language have been made with varying degrees of success. Generally speaking, however, they have yet to make a measurable impact on the endangerment of the language.

5.2 Typological Overview

5.2.1 Sound System

TEXTBOX LP5.1 **TRANSCRIPTION CONVENTIONS FOR NUUCHAHNULTH**

Where transcriptional practice varies from IPA, phonetic values are given in square brackets. Note especially the following:

[ʔ]	pharyngeal stop	(transcribed ʕ)
[ħ]	voiceless pharyngeal fricative	(transcribed *ḥ*)
[ɬ]	voiceless lateral fricative	(transcribed *ɬ*)
[tɬ]	voiceless lateral affricate	(transcribed *x̌*)
[x]	voiceless velar fricative	
[χ̣]	voiceless uvular fricative	(transcribed *x̣*)

Sounds indicated in parentheses in Table LP5.1 are rarely used.

SIDEBAR LP5.1
Similar consonants are found in Tsez and Kabardian and are discussed in those language profiles; for discussion of ejectives, also see Textbox 2.6.

Nuuchahnulth, like other languages from the Pacific Northwest Coast region of North America, has a well-developed consonant system (see Textbox LP5.1 for some transcription conventions used for this and other languages of the Pacific Northwest; other conventions are noted in sidebars throughout the chapter). Among the notable features are the following: some relatively uncommon sounds, most significantly **ejectives** and **pharyngeals**; a rich set of lateral consonants; and a contrast between rounded (i.e., pronounced with rounded lips and a labial-velar off-glide) and unrounded obstruents in the velar and uvular places of articulation.

Nuuchahnulth lacks a voicing contrast in consonants. Instead, the primary contrast in obstruents is in **glottalized** (ejective) versus non-glottalized (plain) consonants. The inventory of consonant phonemes in Nuuchahnulth is given in Table LP5.1; phonetic forms are given in square brackets when different from the standard Nuuchahnulth orthography. (Textbox LP5.2 discusses why orthographic practice frequently differs from the IPA.)

TABLE LP5.1 Nuuchahnulth consonants

Stops/ Affricates	p	t	c [ts]	x̌ [tɬ]	č [tʃ]	k	kʷ	q	qʷ	ʕ[ʔ]	ʔ
Ejectives	p̓	t̓	c̓ [t͡s]	x̌̓ [tɬ]	č̓[tʃ]	k̓	k̓ʷ	(q̓)	(q̓ʷ)		
Fricatives			s	ɬ [ɬ]	š [ʃ]	*x*	xʷ	(x̣)[χ]	(x̣ʷ)[χʷ]	ḥ[ħ]	h
Sonorants	m	n			y		w				
Glottalized sonorants	m̓	n̓			y̓		w̓				

TEXTBOX LP5.2 **TRANSCRIPTION CONVENTIONS AND THE INTERNATIONAL PHONETIC ALPHABET**

As you will have already noted, many linguists do not use pure IPA for everyday orthographic practice. While most transcription systems are at least based on the IPA, they may vary from it in particular ways. There are many reasons for this, most commonly related to early print technologies, as producing IPA symbols on standard typewriters in the nineteenth and most of the twentieth century was tedious and required specialized equipment. So linguists substituted easily typeable symbols, or combinations of symbols, for particular phonetic characters. These symbols then became conventionalized for particular languages or regions. With the advent of computer technologies, the production of IPA symbols has become increasingly easier, but people still follow established conventions. A big advantage of this is that all the data for a given language is represented the same way, rather than having it be transcribed one way in older materials, and a different way in more recent materials.

Typically, transcriptional practices become standardized for a given region, as linguists working within a given region tend to talk to each other, read each other's work, and follow the same conventions. One of the tasks in learning linguistics is to get used to different transcription systems, and figure out how to interpret them phonetically in each case. Examples of some regional conventions include the use of the numeral *7* to indicate [ʔ] in Mayan languages, the use of a comma typed under a vowel to indicate nasalization in South American languages (e.g., *ę* for [ẽ]), and the use of an underdot to indicate retroflex consonants in South Asian languages (e.g., *ṭ* for [ʈ]).

SIDEBAR LP5.2
Vowel length is indicated by the doubling of the vowel symbol, e.g., *ii* for [iː].

Glottalized sonorants, such as those found in Nuuchahnulth, are comparatively rare in the world's languages. In this language they are produced with a glottal closure preceeding the production of the sonorant. Note that orthographic conventions for Nuuchahnulth place apostrophes indicating glottalization above (not to the right of) the affected segment.

Compared to the elaboration found in the consonant system, the vowel system in Nuuchahnulth is rather simple, consisting of three vowels, *i, a*, and *u*, with a two-way length distinction.

TABLE LP5.2 Nuuchahnulth vowels

	Front	Center	Back
High	i, ii		u, uu
Low		a, aa	

Given how different the phonological inventories of English and Nuuchahnulth are, examining how English words are adapted into Nuuchahnulth is especially interesting; see Textbox LP5.3.

TEXTBOX LP5.3 **LOANWORDS**

When words are borrowed from a foreign language, sounds and word shapes that are foreign to the language are usually modified to fit to the native morphophonological structure (this phenomenon is referred to as **adaptation** as discussed in Section 13.2.1). The pattern of modifications found in loanwords, therefore, provides us with an interesting perspective on the way the sound and word structures vary among languages.

The following are examples of Nuuchahnulth words borrowed from English. From the way original sounds are modified in these words, we can see the differences between the Nuuchahnulth and English sound systems. Notice what happened to the consonants that are not part of the Nuuchahnulth sound system, i.e., [b], [d], and [f].

muut < *boat*
taana < *dollar*
kʷapi < *coffee*

More interestingly, the borrowed words began to follow the morphological patterns of the language once they started to be felt as part of the lexicon of the language. In Nuuchahnulth, free roots ending in /n/ have separate connecting forms for use with suffixes:

saasin 'humming bird' > *sasitq-*
ƛ̓aaʔin 'crow' > *ƛ̓aʔitq-*
c̓itin 'money given away at potlach' > *c̓ititq-*

The rule is (i) to shorten the first vowel if it is long and (ii) to replace the final /n/ with /tq/. See what happens with loanwords that end in /n/:

saamin 'salmon' > *samitq-* as in *samitq-ašt* 'dried salmon' (*-ašt* 'dried food')

taawin 'town' > *tawitq-*

Although these words originated in English, they now behave like native Nuuchahnulth words.

5.2.2 Word Formation

Word formation in Nuuchahnulth can be very complex. The complexity is introduced exclusively through the attachment of affixes, most of which are suffixes. There is no compounding (combining of multiple roots) in Nuuchahnulth. The richest word formation is found in verbs. The suffixes involved in verb formation in Nuuchahnulth include not only those indicating grammatical relations and configurations, such as moods, persons of the subject, aspects, possessive, and causative, but also those expressing concrete lexical meanings. The suffixes of the latter kind are rather unusual cross-linguistically. Affixes commonly encode grammatical functions rather than lexical meanings.

TEXTBOX LP5.4 **NOTES ON EXAMPLES**

Examples in this chapter are presented in the following four-line format:

example as pronounced
morpheme breakdown of the example
morpheme-by-morpheme glosses
Free translation

Note that the = indicates a **clitic** as opposed to a suffix. Clitics are bound morphemes with freer distribution than suffixes; see the Manange Language Profile, Textbox LP3.5, for fuller discussion. The following abbreviations are used in the examples below:

CAUS	causative
IND	indicative (assertion)
1PL	first-person plural subject

The suffixes expressing concrete lexical meanings (sometimes called "lexical suffixes") give the word formation in Nuuchahnulth a very different feel from that in European languages. Notice the amount of information that can be packed into a single Nuuchahnulth word:

(1) *ƛitʕaaqstiɬmaḥsapniš*
ƛiqʷ- ʼa·qsta- ʼiɬ-maḥsa= ʼap=ni·š
sit.down-amongst-on.the.floor-desiring.to=CAUS=IND.1PL
'We want you to sit among us.'

(2) *ʕupqswiiʕaqχn̓uk*
ʕupq-swi·q- ʼaqχ-n̓uk
flow.through-go.through-inside-in.hand
'He (grabbed some sand off the beach and) ran it through his fingers.'

SIDEBAR LP5.3
See Section 4.8 for more on polysynthetic versus isolating or analytic languages.

In the above examples, each expression constitutes a single formal unit of one word and yet each expresses a rich meaning that needs to be translated as a sentence in English. Because of this characteristic, Nuuchahnulth is classified as a **polysynthetic** language. We will take a deeper look at the nature of the polysynthesis in Nuuchahnulth below.

STOP AND REFLECT LP5.1 **CREATE A GLOSSARY**

Try making a glossary of all of the morphemes in Examples (1) and (2). That is, make one list of all the roots in the data, one list of all the suffixes, and one list of all the clitics, together with their glosses. Your glossary should have ten forms. If you were a linguist just beginning to work on this language, you would start with such a list and expand it with each new example, noticing when a form already in your glossary is used again, and so honing your semantic analysis and your understanding of the grammar.

5.2.3 Word Classes

In many familiar languages, words can be divided into relatively clear word classes, as discussed in Chapter 5. In modern linguistics, the classification of words is made on the basis of the kinds of morphophonological processes they undergo (inflection or the ability to take case-markers) and of the roles they can play in a sentence (e.g., as the predicate or the subject). The word-class distinction, especially that between noun and verb, is often considered

universal, that is, a feature that one should expect to find in every human language. When we examine inflected words that are being used in sentences and utterances, we can find a similar distinction in Nuuchahnulth. For example, in (3) below, *hawiłčaqšiƛuks* is functioning as a verb, whereas *maḥ̓tii* is functioning as a noun. We can determine this on the basis of the morphosyntactic characteristics of these words: for *hawiłčaqšiƛuks* the verbal inflection and the fact that it functions as a predicate; and for *maḥ̓tii* the lack of verbal inflection and its syntactic role as an argument.

(3) *hawiłčaqšiƛuks* *maḥ̓tii*
hawił-č aq-ši(ƛ)=uk=s *maḥ̓tii*
finish-having.done-PFV=POSS=1SG house
'I finished making my house.'

SIDEBAR LP5.4
The symbol *i·*, with a "middle dot" represents a variable-length vowel, where length is dependent on the context. For more details, see Exercise 4.

Similarly, in (4) *haʕicxšiƛʔiš* and *ta:ktaʔi* can be characterized as a verb and a noun, respectively. Notice that *haʕicxšiƛʔiš* takes the verbal inflection (the third-person indicative *mood* *=ʔi·š*) and functions as the main predicate, and that *ta:ktaʔi* takes nominal inflection (definite *=ʔi·*) and functions as an argument.

(4) *haʕicxšiƛʔiš* *taaktaʔi*
haʕicx-ši(ƛ)=ʔi·š *taakta=ʔi·*
sneeze-PFV=IND.3 doctor=DEF
'The doctor sneezed.'

However, while it is possible to classify Nuuchahnulth words into noun and verb on the basis of their morphosyntactic behavior in sentences, this classification cannot easily be extended to lexical roots. The difficulty can be illustrated in the following set of examples:

(5) *nunuukʔiš* *ɬuucmaʔi*
nunuuk=ʔ i·š *ɬuucma=ʔi·*
singing=IND.3 woman=DEF
'The woman is singing.'

(6) *ɬuucmaʔiš* *nunuukʔi*
ɬuucma=ʔi·š *nunuuk=ʔi·*
woman=IND.3 singing=DEF
'The one who is singing is a woman.'

Above we see that the same root can be put into different functions, either as a verb or as a noun. The root *nunuuk* 'singing' has a verbal inflection (third-person indicative *=ʔi·š*) and is functioning as the main predicate in (5), but it has a nominal inflection (definite *=ʔi·*) and is functioning as an argument in (6). The root *ɬuucma* 'woman,' on the other hand, shows the opposite characteristics in the respective examples. To view this from another angle, we could say that most Nuuchahnulth roots can be part of a verb or a noun. It is therefore not an obvious task in Nuuchahnulth to classify roots on the basis of the kinds of affixes they can take or the kinds of roles they can play within a clause.

Because of this difficulty, Nuuchahnulth is sometimes cited as a language without a word-class distinction. However, that characterization is rather misleading. First, the difficulty is

only related to the classification of lexical roots. As stated before, we can identify verbs and nouns with respect to words in a sentence. Second, we can see some behavioral classes even among Nuuchahnulth roots. In particular, there seems to be a relatively clear division between roots denoting entities and those expressing actions, events, and states. The entity-like roots are more closely associated with the noun: they occur as nouns frequently and freely, but their use as verbs is very restricted in terms of frequency and meaning. The opposite is true for roots expressing actions, events, and states: they can form a verb frequently and without much restriction, but they must be attached with a definite morpheme to be used as a noun.

Thus, the apparent issue of (the lack of) the word-class distinction in Nuuchahnulth has to do with the traditional conception of the word-class distinction that often fails to sort out root-level and word-level classifications.

5.2.4 Basic Constituent Order

In Nuuchahnulth sentences, the predicate is usually placed first, followed by the subject and/or the object. The subject is more likely to precede the object when a speaker produces a sentence out of context – for example, when translating a sentence from English – but the order between the two can easily be reversed when speakers are producing natural, continuous speech.

SIDEBAR LP5.5
See Textbox 6.10 for more on constituent ordering in the world's languages.

The initial placement of the predicate is fairly rigid. A nominal argument (either subject or object) can be placed before the predicate for special emphasis, but in such cases there is an intonational break separating the preposed argument from the rest of the sentence.

A noun phrase referring to the subject or object may be omitted when its identity is already known. In natural discourse (especially in conversation), one would rarely find a sentence with both the subject and the object overtly mentioned.

5.2.5 Word Order within NPs

A noun phrase is formed with a nominal head and its modifying elements. It is relatively rare to have a noun phrase with more than one modifying element in naturally occurring discourse. When modifiers do co-occur, they appear in a fixed order. To see this, however, one has to first understand another important aspect of Nuuchahnulth noun phrases.

When suffixes are semantically associated with a noun phrase, they are invariably attached to the first constituent of the phrase, regardless of the position of the head noun. This is illustrated in Examples (7)–(9) below: the lexical suffix *-iiɬ*. 'making' is attached to the first constituent of the phrase regardless of the position of the noun *c̓apac* 'canoe' in these examples.

(7) *c̓aapaciiɬ*
c̓apac-iiɬ
canoe-making
'He made a canoe.'

(8) *χuɬiiɬ* *c̓apac*
χuɬ-iiɬ *c̓apac*
nice-making canoe
'He made a nice canoe.'

(9) *ʔiiḥiił* *ƛuł* *čapac*
ʔi·ḥ-iił *ƛuł* *čapac*
greatly-making nice canoe
'He made a very nice canoe.'

The fact that the suffix *-iił* 'making' shifts its host in Examples (7)–(9) suggests that it is associated with the noun phrase as a whole rather than with any individual element within the phrase. This type of "migratory" attachment pattern is sometimes found with sentence-level inflectional elements such as mood and person morphemes, but it is uncommon to find such behavior in suffixes with rich lexical content.

Once this fact is understood, it can be seen that the order of noun-phrase elements is fixed: quantifier/numerals > property concepts > nominal. Examples (10) and (11) illustrate some complex noun phrases, which were elicited (i.e., speakers produced them as translations of English sentences). Lexical suffixes are attached to the first element in each case.

(10) *ʔayiips* *ʔaʔiiḥ* *muwač*
ʔaya-i·p=s *ʔaʔiiḥ* *muwač*
many-getting=1SG large deer
quantifier **property** **nominal**
'I got many big deer.'

(11) *ʔaƛciqisʔiš* *tupqumł* *čapac*
ʔaƛ-ciq-'is=ʔi·š *tup-qumł* *čapac*
two-being.on.the.shore-being.on.the.beach=IND.3 black-rounded canoe
number **property** **nominal**
'There are two black canoes on the beach.'

5.2.6 Complex Meanings Marked by Clause Combinations

Clause structure in Nuuchahnulth is comparatively simple. In other languages, a common grammatical means of introducing complexity into a clause is to use adpositions, which can introduce locational or temporal noun phrases, or relate additional participants to the main predicate. For example, in English a basic clause *John built the canoe* can be expanded with prepositional phrases: *John built the canoe with his friends on the beach*. Nuuchahnulth does not have any adpositions, so the expression of such an expanded event description involves the combination of clauses. In (12) below, the meaning expressed in English by a prepositional phrase, *with the sea lion*, is encoded in Nuuchahnulth as a clause *tukuuk ʔukʷink* 'being together with the sea lion' combined with the main clause *ɬaapsʔatu qawiqaaɬ* 'Qawiqaalth dove into the water.'

(12) *[ɬaapsʔatu* *qawiqaaɬ]* *[tukuuk* *ʔukʷink]*
ɬaps-ʔatu *qawiqaaɬ* *tukuuk* *ʔu-kʷink*
dive-sinking. into.water Qawiqaalth sea. lion 3SG-being. together.with
main clause **combined clause**
'Qawiqaalth dove into the water with the sea lion.'

Again, in (13), what would be expressed in English as a prepositional phrase, *for her grandchildren*, is expressed in Nuuchahnulth as a combined clause *ʔuuʔatup kʷakuucuk* 'doing it for her grandchildren.'

(13)

[šišaa]	*[ʔuuʔatup*	*kʷakuucuk]*
šiš-(y)a·	*ʔu-'atup*	*kʷakuuc=uk*
clean-PROG	3SG-doing.for	grandchild=POSS
main clause	**combined clause**	

'She would peel them for her grandchildren.'

SIDEBAR LP5.6
PROG progressive aspect

5.3 Formation of Negation and Questions

SIDEBAR LP5.7
See Section 6.4 for examples of syntactic constructions in English, and Section 6.5.4 for an explanation of complementation.

The formation of non-declarative sentences, i.e., negation and questions, involves two different syntactic constructions in English. Nuuchahnulth also has separate constructions for negation and question formation, but they are quite different from those in English.

5.3.1 Negation

In a Nuuchahnulth negative sentence, negation is expressed through complementation. A special negative verb serves as the verb of the matrix clause, and the negated content is expressed as a complement clause. Thus, in (14), the first verb *wik* 'not' expresses negativity and the complement clause *haʔukšiƛ* 'eat' expresses the action to be negated. Since English does not negate sentences this way, it is difficult to come up with a literal translation. It is something like 'it is not that he ate,' although this conveys a strong sense of speaker assertion (compared to 'he didn't eat') that is not part of the semantics of Nuuchahnulth.

(14)

[wiḵaƛ]	*[haʔukšiƛ]*
wik='aƛ	*haʔuk-ši(ƛ)*
NEG=EVENT	eat-PFV
negative verb	**complement clause**

'He did not eat.'

The relative order between the negative verb and its complement is fixed: the former always precedes the latter; the predicate-initial position provides evidence that the word indicating negation is indeed a verb. Example (15) provides further evidence in that it demonstrates the ability of the word indicating negation to take verbal morphology, specifically the past-tense marker.

(15)

[wiiẏimtwaʔiš]	*[wiiqḥap*	*maaṅuuʔisʔatḥ*	*qʷayaċiik]*
wiiẏa=imt=wa·ʔi·š	*wiiq-ḥap*	*maaṅuuʔisʔatḥ*	*qʷayaċiik*
never=PST=QUOT.3	unpleasant-acting.like	Manhousat	wolf
negative verb	**complement clause**		

'It was said that Manhousat people never did harm to wolves.'

TEXTBOX LP5.5 **POLAR VERSUS CONTENT QUESTIONS**

There are two types of questions in the world's languages: polar questions (discussed in Section 6.4), which can be answered with a simple "yes" or "no" response, and content questions (sometimes called wh-questions), which query a specific piece of information. Thus, in English the question "Did you finish the ice cream?" is a polar question and can be answered with a simple affirmative or negative response, while "When will you buy more?" is a content question, as it requests that the interlocutor supply a specific piece of information.

5.3.2 Question Formation

Polar questions (see Textbox LP5.5) are expressed in Nuuchahnulth with an interrogative clitic attached to the verb.

(16) *ʔuuqḥɬimtḥin*
ʔuuqḥɬi=imt=ḥin
tell.about=PST=Q.1PL
'Did we tell about it?'

(17) *mamuukḥ*
mamuuk=ḥ
work=Q.3
'Is he working?'

It is also very common, especially with the second-person subject, to express polar questions using only a rising intonation contour, without the interrogative marker.

(18) *hawˀiiqx̌k*
hawˀiiqx̌=k
hungry=2SG
'Are you hungry?'

(19) *ḥawˀiɬk.*
ḥawˀiɬ=k
wealthy/chief=2SG
'Are you wealthy?; Are you a chief?'

Content questions, on the other hand, can be expressed – like negation – with a complement construction where the question word functions as the verb of the matrix clause. The event or state with respect to which the question is asked is expressed either with a lexical suffix or with a complement clause. The main predicate built around the question word can carry the interrogative clitic, although the predicate without the clitic is also very common. There are thus a variety of possible strategies for this function, and they can combine to produce a range of related constructions, as illustrated in the following examples.

(20) question word+lexical suffix; without interrogative clitic

ʔaaqičiiɬk
ʔaqi-{č}iiɬ=k
what-make=2SG
'What you you making?'

(21) question word+lexical suffix; with interrogative clitic

ʔunistumtḥsuu
ʔuna-ista=umt=ḥsuu
that.much-persons.onboard=PST=Q.2PL
'How many of you were on the canoe?'

(22) with complement clause; without interrogative clitic

[ʔačaʕanitk]	*[quʔiiẏaṗat]*
ʔačaq='at=it=k	*qu-'i·ẏa·p='at*
who=PASS=PST=2SG	person-INC.CAUS=PASS
question word	**complement clause**

'Who raised you?'

(23) with complement clause; with interrogative clitic

ʔaqisḥ̬wɬ̓asʔaχ̓iṯḥ	*šiiχ̌uk*
ʔaqisḥ̬=it=ḥsuu	*šiiχ̌uk*
why=PST=Q.3	move
question word	**complement clause**

'Why did you move?'

5.3.3 Nuuchahnulth Morphology and Polysynthesis

In this section we will take a detailed look at the complex word formation in Nuuchahnulth. As mentioned above (see Examples 1 and 2), what sets Nuuchahnulth word formation apart from that in familiar languages like English are the facts that it allows (a) the packing of complex meanings within a word through the combination of many morphemes and (b) for a single word to contain all the information necessary to serve as an independent sentence. This type of word formation is known as polysynthesis.

SIDEBAR LP5.8
Polysynthesis is introduced in Section 4.8; see also the Language Profiles on South Conchucos Quechua (LP6) and Seneca (LP13).

Polysynthesis in Nuuchahnulth is based on the affixation of **lexical suffixes**. The lexical suffix is a cross-linguistically unusual type of affix in that it expresses a concrete lexical meaning rather than an abstract grammatical function, and in that the inventory is large. (There are between 400 and 500 suffixes of this type in Nuuchahnulth.) Despite their semantic richness, lexical suffixes are purely dependent elements morphologically: they must always be attached to some stem and can never stand alone to form a word.

The meanings expressed by lexical suffixes span across a wide range (see, e.g., Textbox LP5.6). The following is a sample list of lexical suffixes:

Actions/Events

-ḥw̓aɬ ‘using … ’
-ʼi·c ‘eating … ’
-n̓aaḥ ‘seeking … ’
-ʔatu ‘sinking into the water’

Entities

-ʔaq ‘animal hide’
-mapt ‘plant’
-qimɬ ‘round object’
-ʼaqsup ‘female from … ’

States

-yuʔaaɬ ‘being aware of … ’
-maḥsa ‘desiring to … ’
-ḥtin ‘being made of … ’
-ḥta ‘being apart’

Locations

-ʼis ‘being on the beach’
-ʼas ‘being on the ground’
-ʼa· ‘being on the rock’
-ʼiɬ ‘being in the house’

TEXTBOX LP5.6 **LEXICAL SUFFIXES FOR FEASTING**

Lexical suffixes express conventionalized actions and concepts that are highly entrenched in everyday life. Consequently, the inventory of lexical suffixes can tell us something about the everyday life of the people who have been using the language. For example, feasting and the gift-giving festival known as a *potlatch* are central rituals in Nuuchahnulth culture (and indeed in many indigenous communities of the Pacific Northwest Coast). It may at first look curious to the outsider to find suffixes like *-ʼinɬ* ‘giving feast of …, distributing … in feast,’ *-ʼimcu* ‘feasting, entertaining,’ or *-tuuɬa* ‘potlatch for,’ but this shows how important potlatch and feast-giving are in Nuuchahnulth culture and social life.

The semantic range of lexical suffixes overlaps with that of roots, but there are some notable differences between the two. Locative concepts are almost exclusively expressed by lexical suffixes. In contrast, nominal concepts (entities) are predominantly expressed by roots. Although there are lexical suffixes expressing nominal concepts, the meanings expressed are limited to conventionalized, generic notions.

In most cases there is no clear etymological link between a lexical suffix and a root. There are a few pairs of lexical suffixes and roots that do share a similar form and meaning, e.g., the verb root *wa·* ‘say’ and the lexical suffix *-wa·* ‘say,’ but they are very limited exceptions.

Lexical suffixes, because of their rich semantics, play a significant role in shaping the semantic and syntactic characteristics of the word. Particularly interesting are those that

become the semantic head of the word (i.e., convey the word's primary semantic content). In Example (24) a verbal lexical suffix *-(c)iił* 'make' is attached to a nominal root *c̓apac* 'canoe' to form a word 'to make a canoe.'

(24) *c̓aapaciił*
c̓apac-(č)iił
canoe-make
'make a canoe'

The nominal root is the head: it is an independent morpheme and it serves as the base of word formation. The lexical suffix, on the other hand, is a bound morpheme that needs to be attached to the base, thus making it dependent on the root. However, this dependency relationship seems to be reversed semantically. The verbal lexical suffix determines the basic meaning of the word, whereas the nominal root is supplementing the meaning expressed by the lexical suffix. Thus, this word formation is an interesting case of a mismatch between the morphological relationship and the semantic relationship. (25) is an additional example.

(25) *k̓iłatsinłʔaqχs*
k̓iłatq-'inł=ʔaqχ=s
hairseal-giving.a.feast.of=FUT=1SG
root lexical suffix
'I will give a feast of hair seal; I will serve hair seal at a feast.'

5.3.4 Functions of Polysynthetic Words in Discourse

Thanks to the unusually powerful word-formation mechanism involving lexical suffixes, a word in Nuuchahnulth can encode a meaning as rich as that of a multi-word English sentence. Thus, the same information can sometimes be encoded either morphologically or syntactically. In the following examples, the participant *child* is expressed as a root with a lexical suffix in one case (26) but as a separate independent word in another (27).

(26) *t̓aatn̓anakšiχʔaχquuk*
t̓aatn̓a-na·k-ši(χ)='aχ=quuk
child.PL-having-PFV=EVENT=COND.2SG
'when you have children'

(27) *ʔunaakʔaɬ* *t̓aatn̓a.*
ʔu-na·k=ʔa·ɬ *t̓aatn̓a*
3SG-having=PL child.PL
'They had children.'

This flexibility raises an interesting question: Why does the speaker choose one strategy of encoding over the other? The choice has to do with whether the speaker is referring to a particular person or entity. The compact expression generally expresses habitual, institutionalized activities rather than particular ones. For example, the predicate in (26) expresses the general activity of having children rather than a particular activity bound in time and

place (e.g., having a particular child). Thus, a nominal element combined with a lexical suffix within a complex word, like *ƛ̓aan̓a* 'children' in (26), is not **referential** in discourse (i.e., not used for introducing a referent into a discourse that will subsequently be discussed or "tracked" as an activated referent; see Textbox 9.3 for a description of referent tracking). In contrast, when the speaker refers to a particular entity (e.g., the children in (27)), the nominal and verbal elements are expressed as separate words. Observe the contrast between (a) and (b) in Example (28).

(28) **a.** *c̓̓aapaciiɬẇ̓iƛ̓as.*
c̓̓apac-iiɬ-ẇ̓iƛ̓as
canoe-making-about.to
'He is going to make a canoe.'

b.

6 months	*hiɬ*	*p̓̓ačiina*	*c̓̓apac*	*ʔusiik*
	hiɬ	*p̓̓aačiina*	*c̓̓apac*	*ʔu-siik*
six.months	be.there	pachina	canoe	3SG-completing

'For six months, I was at Pachina completing the canoe.'

Sentence (28a) was produced at the beginning of a narrative in which the speaker explained how canoes used to be built. Here the root *c̓̓apac* 'canoe' does not refer to a particular entity: the notion of *canoe* is part of a generic action of *canoe-making*. In (28b), on the other hand, the same root *c̓̓apac* is used referentially to make reference to a particular canoe that the speaker was requested to build, and it is expressed in a word separate from the verbal element.

A similar contrast is observed in (a) and (b) of example (29) (the parts of the translation in square brackets present information known from the broader discourse context):

(29) **a.**

ʕuy̓·iiċap̓at	*hitaaqχ̓iχ.*
ʕuy̓·i-'i·c='ap='at	*hita-'a·qχ̓i(χ)*
medicine-consuming=CAUS=PASS	get.there-being.in.the.woods

'They had me take medicine in the woods [SO that I could have sons].'

b.

sukʷiʔaχ	*ʕuy̓·aakʔi*
sukʷi(χ)='aχ	*ʕuy̓·i=ʔa·k=ʔi·*
take=EVENT	medicine=POSS=DEF

'He [Mink] took out his medicine [to create a lake].'

In (29a) *ʕuy̓i* 'medicine' is part of the general activity of *medicine-taking* and therefore does not refer to a particular medicine. In contrast, *ʕuy̓i* in (29b) does refer to a particular medicine owned by Mink, as indicated by the possessive and definite suffixes.

Lexical suffixation and compounding in languages like English show a great deal of functional similarity in this aspect, although these two processes are very different in structural terms. Compare the above examples with morphological complexes like *berry-picking* and *bird-watching* in relation to *pick the berry* and *watch the bird*. The compact expression is only possible when the nominal does not refer to a specific entity.

CHAPTER SUMMARY

Although highly endangered, Nuuchahnulth is a rich language with many interesting typological features. These include a large consonant inventory with extensive glottalization, an absence of a distinction between nouns and verbs for lexical roots, predicate-initial constituent order, and the use of clause combinations to express complex meanings.

Particularly striking is the polysynthetic word formation and the extensive inventory of lexical suffixes. Polysynthesis complicates our cross-linguistic understanding of the nature of words. Languages of this type show that the layout of the major domains of structural formation (i.e., word-level structure versus clause-level structure) can differ significantly across languages.

TEXTBOX LP5.7 **GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE**

Convention	Meaning	Convention	Meaning
1	first person	NEG	negative
2	second person	PASS	passive
3	third person	PFV	perfective
CAUS	causative	PL	plural
COND	conditional	POSS	possessive
DEF	definite	PROG	progressive
EVENT	event	PST	past tense
FUT	future tense	Q	interrogative
INC	inceptive aspect	QUOT	quotative
IND	indicative	SG	singular

SUGGESTIONS FOR FURTHER READING

Fortescue, **Michael**. 2007. "The typological position and theoretical status of polysynthesis." *Tidsskrift for Sprogforskning* **5**.1: 1–27.

This paper examines the notion of 'polysynthesis' through a careful survey of traits exhibited by different types of polysynthetic languages in the world.

Haspelmath, **Martin**. 2012. "How to compare major word-classes across the world's languages." In **Graf, T., D. Paperno**, **A. Szabolcsi**, and **J. Tellings (eds.)**, *Theories of everything: In honor of Ed Keenan*. Los Angeles: University of California, Los Angeles. 109–130.

This paper contains good discussion about issues and difficulties in defining word classes especially in a way that can be compared across languages.

Mithun, **Marianne**. 1999. *The languages of Native North America*. Cambridge University Press.

This book contains an overview and rich discussion of structural characteristics of the indigenous languages of North America.

Nakayama, **Toshihide**. 2001. *Nuu-chah-nulth (Nootka) morphosyntax*. Berkeley: University of California Press.

This book gives an overview of word and sentence formation in Nuuchahnulth.

Thompson, **Laurence C.**, and **M. Dale Kinkade**. 1990. "Languages." In **Sturtevant**, **W. C.** (ed.), *Handbook of North American Indians,* Vol. VII: *Northwest Coast*. Washington, DC: Government Printing Office. 30–51.

This article surveys languages of the Pacific Northwest Coast area of North America where Nuuchahnulth is located.

EXERCISES

1. Perfective aspect allomorphs

SIDEBAR LP5.9

Refer to Section 3.2.6 as needed to refresh your memory about allomorphy.

The perfective aspect suffix *-šiƛ* in Nuuchahnulth has three allomorphs, *-šiƛ ~ -čiƛ ~ -kʷiƛ*. This problem will focus on the allomorphs *-šiƛ and -*čiƛ. (This alternation is represented in the top line of the transcription.) Compare the phonological environments in which each occurs. Determine the distribution pattern of these two allomorphs and write a clear statement about the conditions under which each appears.

a. *ḥamipšiƛ*
ḥamip-šiƛ
recognize-PFV
'he recognized'

b. *tuukšiƛ*
tuuk-šiƛ
cover.with.sand-PFV
'he covered (it) up with sand'

c. *taačiƛ*
ta:-šiƛ
poke-PFV
'he poked (it)'

d. *ƛ̓itšiƛ*
ƛ̓it-šiƛ
split-PFV
'he split (it)'

e. *ɬ̓ičiƛ*
ɬ̓i-šiƛ
throw-PFV
'he threw (it)'

f. *yacšiƛ*
yac-šiƛ
step-PFV
'he stepped on'

g. *maḥšiƛ*
maḥ-šiƛ
collapse-PFV
'it collapsed'

h. *ƛ̓apxšiƛ*
ƛ̓apx-šiƛ
slam-PFV
'he slammed'

i. *qačiƛ*
qa-šiƛ
pierce-PFV
'he pierced'

2. Word analysis

Each of the following words is composed of two morphemes. Create a mini-glossary with a gloss for each morpheme.

a. *ẏ·ak-iiʔiƛ*
'looked into the house'

b. *kamatqʷ-iiʔiƛ*
'running into the house'

c. *kamatqʷ-wa·s*
'running out'

d. *ʕup-wa·s*
'(water) flowing out'

e. *mat-wa·s*
'flying out'

f. *tuxʷ-wa·s*
'jumping out'

g. *tuxʷ-ʕaʔatu*
'jumping down'

h. *ɬ̓i-ʕaʔatu*
'falling down'

i. *mat-ʕaʔatu*
'flying down'

j. *haatk-ʕaʔatu*
'rolling down'

k. *ɬ̓i-ʼi·ƛ*
'falling on the ground'

3. Vowel contraction

In Nuuchahnulth, when two vowels meet across a morpheme boundary, they contract into one. The quality of the resulting vowel is predictable. Using the following set of data, succinctly state in English prose the pattern that determines the quality of the contracted vowel. *Note*: You can ignore the length of the resulting vowel for this exercise.

a. *sučiiɬ*
sučа-i·ɬ
five-fathoms
'five fathoms'

b. *ʔukčiis*
ʔu-kči-a·s
3SG-be.with-in.chair 'sitting beside (someone) on the chair'

c. *huʔin*
huʔa-in
back-come
'come back'

d. *ńupuuɬ*
ńupu-i·ɬ
six-fathoms
'six fathoms'

e. *ʔukčumyiɬ*
ʔu-kči-umɬ-'iɬ
3SG.M-be.with-be.in.a.group-be.in.the.house 'being on the floor with him'

f. *ċaawumɬ*
ċawa-umɬ
one-be.in.a.group
'There is only one in a group.'

g. *ʔuyii*
ʔu-ayi·
3SG-give
'give it (to him)'

h. *ḥaʔuyi*
ḥaʔu-ayi·
exchange-give
'give in exchange'

i. *ʔayuʔaaɬ*
ʔaya-uʔaaɬ
many-perceive
'find many (of them)'

4. Variable-length vowels

Nuuchahnulth has so-called variable-length vowels that are realized as long vowels in some contexts and as short vowels in others. *Note*: variable-length vowels are indicated by a "middle dot," i.e., /V·/ where V stands for any vowel letter, in the morphemic (second) line of each example.

Compare the forms in the text (top) line and those in the morphemic (second) line to see whether the variable-length vowel is pronounced as long (as in (a)) or short (as in (b)). Formulate a statement that distinctly states the conditions under which a variable-length vowel will be realized as short and realized as long.

(*Hint*: Notice that the same morpheme [e.g., *-a·s* 'on a board/platform'] is sometimes pronounced with a long vowel and sometimes with a short vowel. What does this tell you about where to look for the conditions that trigger the rule?)

a. *kiɬaas*
kiɬ-a·s
carry.a.canoe-on.platform
'He is carrying a canoe on a board.'

b. *hatkʷisas*
hatkʷ-kʷis-a·s
roll-away.from-on.platform
'roll off of the platform'

c. *łučnaakšiƛ*
łuč-na·k-šiƛ
woman-have-PFV
'He got married.'

d. *ʕiɬčnaakšiƛ*
ʕiɬč-na·k-šiƛ
dog-have-PFV
'She had dogs.'

e. *ƛ̓uḥiičas*
ƛ̓uḥ-i·č-a·s
press.against-cover-on.platform
'slap on something on the table'

f. *ʔaƛaċasqi*
ʔaƛa-ċa·s-qi·
two-at.*the*.crown.of.the.head-on.the.head
'He had two (of them) at the crown of the head.'

g. *ʕaasiqnakšiƛ.*
ʕa·siq-na·k-šiƛ
plan-have-PFV
'He got a plan.'

h. *suqii*
su-qi·
hold-on.the.head
'He is holding it on the head.'

i. *ʔuʔiipas*
ʔu-ʔiip-a·s
3SG-give.to-on.platform
'He put it on the table.'

j. *ɬaatn̓anaƛ̓aƛ*
ɬaatn̓a-na·k='aƛ
children-have=EVENT
'She had a child.'

5. Change-inducing suffixes

Some of the suffixes in Nuuchahnulth cause various changes in the shape of the root. For each of the examples below, compare the underlying (second line) and combined (top line) shapes of each root and note any changes that have occurred (don't worry about changes in the suffixes themselves). Make a list of the suffixes that do instigate changes and those that do not. For those that do, state the phonological change that the root undergoes.

a. *maaḥ̓iqiiɬ*
maḥ̓iq-(č)iiɬ
house-make
'making a house'

b. *wiwiḵ̓ap*
wik-a·p
NEG-understand
'not understanding'

c. *ʔiiqšaḥap*
ʔiq-šaḥap
the.same-do
'doing the same thing'

d. *wiikiiɬ*
wik-(č)iiɬ
NEG-make
'barren; (woman) not producing a child'

e. *ʔaaqiḥ̓ik*
ʔaqi-ḥ̓i·=k
what-hold.over.fire=2SG
'what are you cooking?'

f. *ʔiʔiqḥwa*
ʔiqḥ-wa·
the.same-keep.saying
'keep saying the same thing'

g. *ṅiiƛ̓yakiiɬ*
ṅiƛ̓yak-(č)iiɬ
oar-make
'making an oar'

h. *ƛuɬp̓u:qs*
ƛuɬ- p̓u·qs
good-smell
'good smell'

i. *ʔaaqičiiɬk*
ʔaqi-(č)iiɬ=k
what-make=2SG
'what are you making?'

j. *wiḵ̓aqƛ*
wik-'aqƛ
NEG-worth
'cheap; worthless'

k. *wikuus*
wik-uus
NEG-at.home
'there is nobody at home'

l. *wiikšaḥap*
wik-šaḥap
NEG-do
'doing nothing'

m. *ƛuuɬšaḥap*
ƛuɬ-šaḥap
nice-do
'act nicely; doing nice things'

n. *ƛuɬsuuqƛ*
ƛuɬ-su·qƛ
good-have.emotion
'feeling good'

o. *wikʔaata*
wik-ʔa·ta
NEG-lack
'sufficient; not lacking anything'

p. *wiikmaʃuk*
wik-maʃuk
NEG-one.skilled.in
'a person without skills'

LANGUAGE PROFILE 6

South Conchucos Quechua

6.1 Introduction

The South Conchucos Quechua language is spoken in the Andes mountains of central Peru. The name *Quechua* derives from the native word **qitʂwa* meaning 'temperate zone,' which translates to an elevation ranging from 9,000 to 13,000 feet. South Conchucos Quechua villages are traditionally located on steep, rugged slopes at these lofty altitudes.

6.1.1 Genetic Affiliation

South Conchucos Quechua is a member of the Quechua language family. These languages, native to western South America, developed long before the Inca Empire was established (Torero 1964: 477). According to the *Ethnologue*, forty-four varieties of Quechua are currently spoken by over 9 million people throughout much of the Andean highlands and to a lesser extent in the Amazonian lowlands (Lewis et al. 2016).

Torero locates the Quechua homeland along the coast and mountains of central Peru. From a linguistic point of view, this region is heavily fragmented, with "no full mutual intelligibility between the different dialects" (Adelaar 2006: 121). Twenty modern varieties, including South Conchucos Quechua, are spoken in this "Central Quechua" region, which is roughly a fifth of the size of California or twice the size of Switzerland (see Figure LP6.2). The other shaded areas correspond to all other Quechuan varieties extending north and south of the original Central Quechua homeland. The distance between where Inga Quechua (Colombia) and Santiago del Estero Quechua (Argentina) are spoken is approximately 2,160 miles, which is nearly the distance from Los Angeles to Washington, DC.

6.1.2 Location and Size of Speech Community

South Conchucos Quechua is spoken by approximately 250,000 people in the eastern Ancash and western Huánuco regions of central Peru (see Figure LP6.3). This area is bounded on the west by the glacier-covered Cordillera Blanca, with many peaks towering over 20,000 feet. The South Conchucos Quechua language area extends northeastward across the Marañón River gorge. Some large communities have up to 3,000 residents, but the vast majority of people live in smaller settlements scattered across this remote Andean

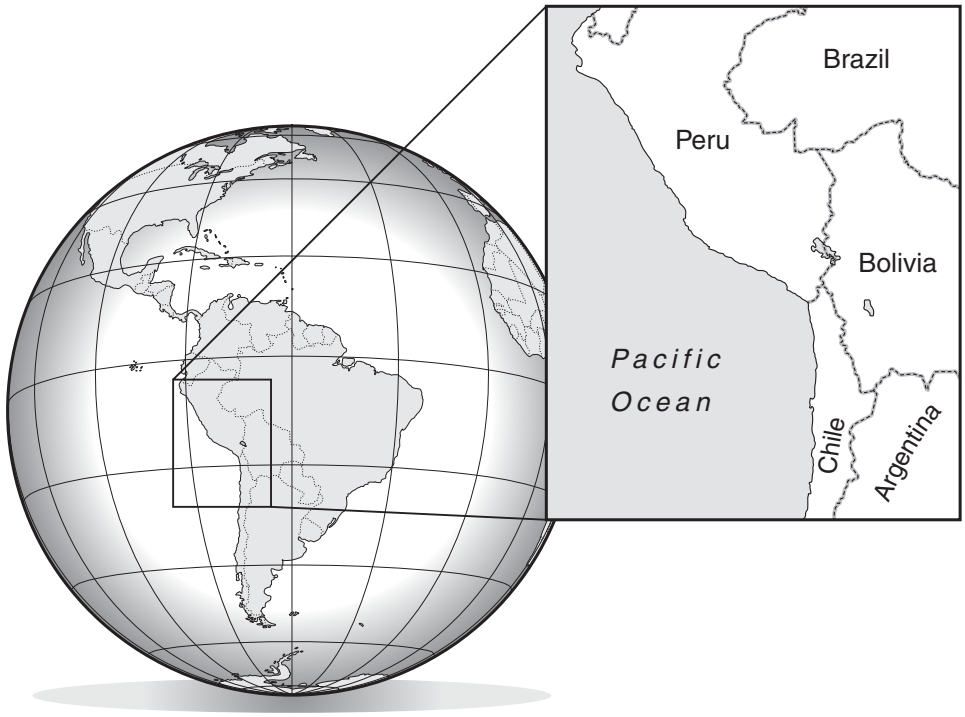


Figure LP6.1 Location of Peru

region. Major population centers include Huari, Chavín de Huantar, Llamellín, San Luis, and Huacaybamba.

6.1.3 Language Viability, Society, and Culture

Traditional Andean agricultural practices are the norm in the communities of South Conchucos. Small fields etched into rugged slopes produce potatoes (*papa*), corn (*hara*), wheat (*tri:gu*), beans (*tawri, a:ba*), and other crops. Families typically own one or more cows (*wa:ka*) and donkeys (*ashnu*), and raise a few pigs (*kuchi*), chickens (*wallpa*), and guinea pigs (*haka*), as well as sheep (*u:sha*) for wool. The community-based production of alpaca wool sold to the national government is a recent innovation.

SIDEBAR LP6.1
The online resources for this language profile include two glossed and translated texts, with audio files.

SIDEBAR LP6.2
A colon (:) is a transcription convention often used to represent lengthening of the preceding sound and thus can indicate a long vowel sound, as in the word *tri:gu* 'wheat.'

South Conchucos Quechua speakers are not shy about their language. Quechua is the language of everyday life for people of all ages, the language of understanding and connection. A small percentage of the population are monolingual Quechua speakers, who are generally older women and men, as well as preschool children. Most adults and school-age children

Figure LP6.2 Map: The Quechua language family (Hintz 2011: 12, adapted from Landerman 1991: 37)

can also communicate to varying degrees in the local variety of Spanish, but there is a definite preference for Quechua. Children play together in Quechua. School teachers often speak and joke around in Quechua. In fact, people almost always speak among themselves in Quechua, but switch to Spanish to accommodate outsiders.

Native-authored literature is another recent innovation. There are over one hundred titles published in South Conchucos Quechua, including books of traditional stories, songs, riddles, a health manual, literacy materials, a translation of the novel *Heidi*, and a translation of the New Testament. Thousands have learned to read in their native language through community-based literacy efforts.

6.2 Typological overview

6.2.1 Segmental Sound System

The native sound system of South Conchucos Quechua has seventeen consonants, three short vowels, and three long vowels. IPA symbols for these sound segment **phonemes** are shown in Table LP6.1. Among those listed in rows 1–3, only /ɢ/ is **voiced**. Spanish loans

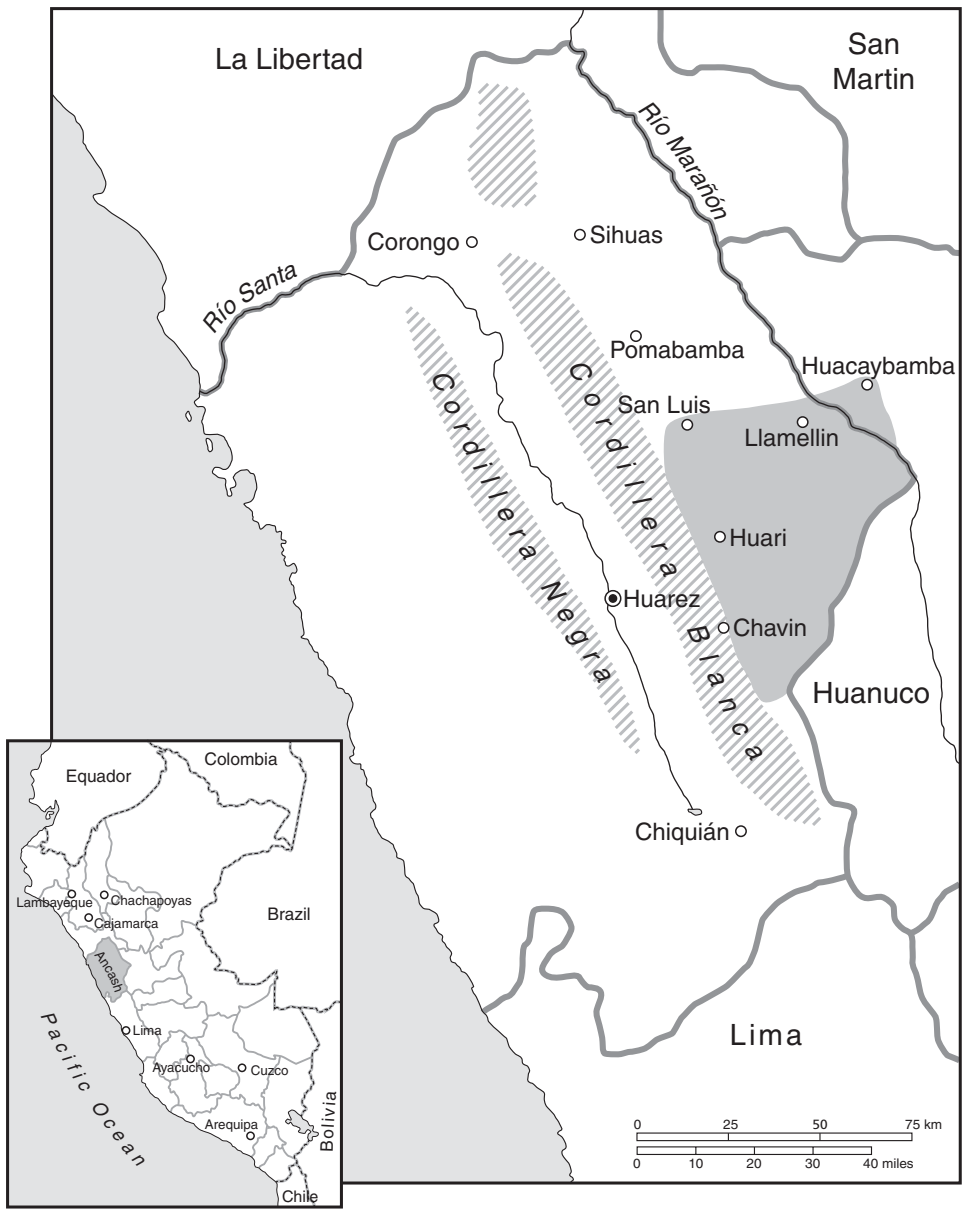


Figure LP6.3 Map: The South Conchucos Quechua language area

have introduced the consonants /b/, /d/, /g/, /f/, and trilled /r/, as well as the vowels /e/ and /o/ along with their lengthened counterparts /e:/ and /o:/. Some examples of loanwords from Quechua to English are given in Textbox LP6.1. Examples in this language profile use the following alphabetic symbols in place of the corresponding IPA symbols: q for ɢ, y for j, r for ɾ, ch for tʃ, sh for ʃ, and ll for ʎ.

TABLE LP6.1 Native phonemes of South Conchucos Quechua

Consonants

	Bilabial	Alveolar	Postalveolar/Palatal	Velar	Uvular	Glottal
Oral stops	p	t		k	ɢ	
Affricates		ts	tʃ			
Nasal stops	m	n	ñ			
Flap (tap)		ɾ				
Fricatives		s	ʃ			h
Central approximants	w		j			
Lateral approximants		l	ʎ			

Vowels

	Front	Central	Back
High	i i:		u u:
Mid			
Low		a a:	

TEXTBOX LP6.1 QUECHUA WORDS USED IN ENGLISH (TYPICALLY FROM QUECHUA TO SPANISH TO ENGLISH)

English	Quechua	
puma	*puma*	‘mountain lion, cougar’
jerky	*tʂarki*	‘dried meat strips’
llama	*llama*	‘domestic animal related to the camel’
condor	*kuntur*	‘large vulture’
quinine	*kina*	‘malaria treatment from cinchona tree bark’
quinoa	*kinwa*	‘edible grain high in protein’
guano	*wanu*	‘fertilizer from dried seabird dung’
pampa	*pampa*	‘grass-covered plain’
coca-cola	*kuka*	‘coca plant or leaves’

Figure LP6.4 Endangered Andean *puma*

6.2.2 Word Classes

Major word classes in South Conchucos Quechua include the following:

NOUN ROOTS:	*haka*	'guinea pig'
	papa	'potato'
PERSONAL PRONOUNS:	*noqa*	'I'
	qam	'you'
	pay	's/he'
	noqantsik	'we (inclusive), you and I'
DEMONSTRATIVE PRONOUNS:	*kay*	'this (near)'
	tsay	'that (distant)'
	taqay	'that (more distant)'
VERB ROOTS:	*apa-*	'take'
	aywa-	'go'
ADVERBS:	*alla:pa*	'very'
	ras	'fast'
PARTICLES:	*ma:*	'let's see'
	ama	'do not'

Words that describe attributes, such as *puka* 'red' and *hatun* 'large,' take the same suffixes and serve the same grammatical functions as nouns.

TEXTBOX LP6.2 **HAKA 'GUINEA PIG'**

A corner of the kitchen is ideal for raising *haka* 'guinea pig.' In the Andes mountains hotly spiced *haka* (Spanish *picante de cuy*) is a favorite dish prepared for special celebrations, such as birthdays and festivals.

Haka 'Guinea pig'

6.2.3 Word Formation

South Conchucos Quechua is a **polysynthetic** language, that is, words are formed by combining several **morphemes** together. Words typically consist of a single root plus a sequence of **suffixes** and **enclitics**. There are a total of 95 suffixes: 64 used in verbs and 31 used in nouns (or pronouns). In addition, 19 enclitics are common to both verbs and nouns. There are no **prefixes**.

This language is also **agglutinative**. In other words, most suffixes and enclitics express a single component of meaning and generally do not change form across morpheme boundaries (though final vowels may change). This agglutinative tendency makes South Conchucos Quechua words relatively easy to divide into individual morphemes. (A list of all the bound morphemes used in the examples, together with their glosses, can be found at the end of this language profile.)

SIDEBAR LP6.3
For a description of polysynthesis, see Section 4.8. For other examples of polysynthetic languages, see the Nuuchahnulth and Seneca Language Profiles.

SIDEBAR LP6.4
For a description of **clitics**, and an example of an enclitic in English, see the Manange Language Profile, Textbox LP3.5.

TEXTBOX LP6.3 **QUECHUA PUT THE "COCA" IN COCA-COLA**

The *kuka* (coca) plant is native to the highlands of western South America. Its pungent leaves are traditionally chewed with lime powder (calcium hydroxide) to increase the release of alkaloids. Coca serves as a stimulant to overcome fatigue, hunger, thirst, and altitude sickness. It is also used as an anesthetic. Coca has been a vital part of the religious cosmology of Andean people from the pre-Inca period through the present. Extract of coca leaves has been cited as an ingredient in the original Coca-Cola recipe.

Sun-dried coca leaves

Let's identify each morpheme in the two words given in (1).

(1) *haka-n-kuna-pa:* *apa-ra-mu-sha*
guinea.pig-3-PL-PURP take-BRIEF-TO-PST
'She brought (food) for her guinea pigs.'

The first word is the noun *hakankunapa:*, which means 'for her guinea pigs.' This word begins with the noun root *haka* 'guinea pig' followed by three noun suffixes. The first suffix *-n* marks third-person possessive 'her,' followed by *-kuna* 'noun plural' and *-pa*: 'purpose.'

The second word in (1) is the verb *aparamusha*, which means 'she brought it.' This word consists of the verb root *apa-* 'take' followed by three verbal suffixes. The first suffix *-ra* reports the brief duration of the event. The suffix *-mu* shifts the meaning from 'take (there)' to 'bring (here).' The suffix *-sha* indicates a past event. We will explore South Conchucos Quechua verb formation in greater detail in Section LP6.3 below.

6.2.4 Possession in Nouns

Four suffixes are used to indicate possession in nouns. First-person **possessive** is marked by the suffix *-:*, that is, the final vowel of the noun stem is lengthened (*haka* 'guinea pig' versus *haka:* 'my guinea pig'). Second-person possessive is marked by the suffix *-yki*. As we saw in (1), third-person possessive is marked by the suffix *-n*. South Conchucos Quechua has an additional possessive suffix, *-ntsik*, which marks first-person inclusive, meaning 'yours and mine.'

(2) Possessive suffixes

		papa	'potato'
-:	1st person	*papa-:*	'my potato'
-yki	2nd person	*papa-yki*	'your potato'
-n	3rd person	*papa-n*	'his/her potato'
-ntsik	1st-person inclusive	*papa-ntsik*	'our potato' (yours and mine)

STOP AND REFLECT LP6.1 **FUN WITH GUINEA PIGS**

Based on what you have learned so far, determine the South Conchucos Quechua forms for 'my guinea pigs', 'your guinea pig', and 'for our (yours and my) guinea pig'. Check your answers in Sidebar LP6.5.

6.2.5 Word Order within Clauses

A **main clause** consists of a verb, plus an optional **subject** noun phrase, an optional **object** noun phrase, and various other optional elements. In English the subject (S), verb (V), and object (O) most often occur in the order S-V-O, where the subject precedes the verb and the verb precedes the object. By contrast, the order of these elements in South Conchucos Quechua is relatively free. A study by Diane Hintz (2003) found that fewer than 7 percent of main clauses in connected speech have both subject and object noun phrases expressed. In those that do, no single order is significantly more frequent than others. Examples of the two most frequent orders, S-O-V (35 percent) and S-V-O (32 percent), are given in (3) and (4). Though S most frequently occurs in the clause-initial position, pragmatic factors also motivate S in the clause-final position.

(3) **S** **O** **V**
Maria=pis *shinqiru-ta=m* *rantiku-sh*
Maria=EVEN hot.drink-OBJ=AFFIRM sell-PST
'Maria also sold hot drinks.'

(4) **S** **V** **O**
noqa *wanu-tsi-:=mi* *tsay* *kuru-ta*
1SG die-CAUS-1=AFFIRM that worm-OBJ
'I (will) kill that worm.'

Although word order is variable in main clauses, **adverbial clauses** are almost always verb-final. The main clause in (5) is *Wachullash aywakusha* 'Lorenzo went up there.' The final three words (within brackets) constitute an adverbial clause.

TEXTBOX LP6.4 **WHERE DOES THE POTATO COME FROM?**

Potatoes are native to the highlands of South America where they have been consumed for more than 8,000 years. Spanish explorers brought the plant to Europe in the late sixteenth century. The International Potato Center, headquartered in Peru, seeks to reduce poverty and achieve sustainable food security in developing countries.

The English word *potato* derives from Spanish *patata*. According to the Spanish Royal Academy, *patata* derives from a combination of Quechua *papa* 'potato' and Taino *batata* 'sweet potato.'

Varieties of *papa* (potato)

(5)

S	V	O	V
Wachu-lla=sh	*aywa-ku-sha*	[*tsay chi:na-ta*	*apa-rku-r*]
Lorenzo-JUST=REPORT	go-MIDDLE-PST	that girl-OBJ	take-CONSENT-ADV.SS

'Lorenzo went there (they say), taking along that girl.'

The two-word object *tsay chi:nata* 'that girl' is followed by the verb *aparkur* 'taking along.' Two types of adverbial clauses in South Conchucos Quechua are described in Textbox LP6.5.

TEXTBOX LP6.5 **ADVERBIAL CLAUSE TYPES**

South Conchucos Quechua has two primary types of adverbial clauses, each marked by a different suffix. The adverbial suffix *-r* is illustrated in examples (5), (13), and (14), and in Exercise (5). It indicates that the subject of the adverbial clause is coreferential with the subject of the main clause (the main clause can either precede or follow the adverbial clause). It is glossed ADV.SS for 'same subject.' The adverbial suffix *-pti* is illustrated in (10) and in Exercise (1). It indicates that the subject of the adverbial clause is not coreferential with the subject of the main clause, so is glossed ADV.DS for 'different subject.' This type of system is called **switch reference**; see also the Manambu Language Profile, Section P 10.2.8.

6.2.6 Case and Grammatical Relations

The association between a noun (or pronoun) and a verb is referred to as a **grammatical relation**. Core grammatical relations in South Conchucos Quechua are subjects and objects. As seen above in (3)–(5), objects are marked by the case suffix *-ta* (e.g., *shinqirutam, kuruta, chi:nata*). Subjects, on the other hand, are marked by the absence of any case suffix (e.g., *Mariapis, noqa, Wachullash*).

SIDEBAR LP6.5
Answers to Stop and Reflect LP6.1:

'my guinea pigs' *haka-:-kuna*
'your guinea pig' *haka-yki*
'for our guinea pig' *haka-ntsik-pa:*

At least fifteen additional case suffixes mark non-core, or peripheral, grammatical relations, also known as **obliques**. For example, in (1), the case suffix *-pa:* marks 'purpose' in the word *haka-n-kuna-pa:* 'for her guinea pigs.' Other obliques include *-cho:/-chu* 'location,' *-man* 'toward,' *-pita* 'from,' *-no:/-nuy* 'like,' and *-yaq* 'until.'

6.2.7 Evidentials

SIDEBAR LP6.6
Evidentials are also found in Manange (Section LP3.2.2) and Tsez (Section LP7.3.1); they are noted as a linguistic feature of the Vaupés River Basin of Brazil and Colombia in Section 13.6.

South Conchucos Quechua has a small, yet very important, set of six word-final enclitics that report the speaker's source of information and the degree of certainty the speaker holds toward that information. These enclitics are known as **evidentials**. They can attach to almost any word, but their use is generally restricted to only one per sentence. The most frequent evidentials in everyday speech are *=mi*, *=chir*, and *=cha:*. The least frequent are *=chi*, *=shi*, and *=ran*.

We have seen examples of *=mi* (or *=m*) in the words *shinqirutam* in (3) and *wanutsi:mi* in (4). This enclitic means 'I affirm … ' Affirmative *=mi* reports information that the individual speaker has acquired personally and is willing to endorse. In contrast, the reportative enclitic *=shi* (or *=sh*), illustrated in *Wachullash* in (5), reports second-hand information that the speaker does not necessarily endorse. *=shi* adds the sense 'They say … ' The conjectural enclitic *=chi* reports information acquired via deduction, meaning 'I suppose … '

(6) *atska* *wa:ka=chi* *pe* *sha-ya:-mu-n=si*
many cow=CONJECTURE well come-PL-TO-3=EVEN
'Many cows also came along (I suppose).'

Evidential enclitics in this language also express contrasts along the interpersonal dimension. For example, individual knowledge reported by *=mi* contrasts with mutual knowledge reported by *=cha:*, which could be translated as 'We (inclusive) all know … '

(7) *tsay-pa=cha:* *qati-ya-ra-n* *mama-yki-kuna*
that-GEN=MUTUAL follow-PL-PST-3 mother-2-PL
'In that place your mothers [your ancestors] pastured animals (as we all know).'

6.3 Verb Formation

A total of sixty-four suffixes and nineteen enclitics are used in the formation of South Conchucos Quechua verbs. Normally, a verb root must have at least one suffix to mark the person of the subject. The actual number of verbal suffixes and enclitics tends to range from three to six in a given verb, though eight to ten is not uncommon.

A simplified view of South Conchucos Quechua verb structure is presented in Table LP6.2. The verb root is followed by a sequence of suffixes and enclitics. A set of six OPTIONAL suffix slots is followed by three OBLIGATORY suffix slots, and finally the ENCLITIC slots. The enclitics can attach to either verbs or nouns.

In Table LP6.2, the verb *shoqatsimaruykicha:* is divided into its individual morphemes. The verb root *shoqa-* 'comfort' is followed by one suffix or enclitic in each general position of the verb. The causative suffix *-tsi* fills one of the OPTIONAL slots. This is followed by the suffixes *-ma:* (allomorph *-ma*) 'first-person object,' *-ru* 'past tense,' and *-yki* 'second-person subject' in the three OBLIGATORY slots. The final verbal element, the evidential enclitic *=cha:* 'mutual knowledge,' fills an ENCLITIC slot. We will now examine some of these verb slots in more detail.

TABLE LP6.2 Verb structure

VERB ROOT	OPTIONAL VERB SLOTS (6)	OBLIGATORY VERB SLOTS (3)			ENCLITIC SLOTS
		OBJECT	TENSE-DEVERBAL	SUBJECT	
shoqa-	*-tsi*	*-ma*	*-ru*	*-yki*	*=cha:*
comfort	CAUS	1.OBJ	PST	2	MUTUAL
'You made me feel comforted.'					

6.3.1 Subject Slot

As shown in Table LP6.2, the OBLIGATORY slot set consists of the TENSE-DEVERBAL slot, preceded by the OBJECT and followed by the SUBJECT. The subject in present tense is specified by one of four suffixes. First-person subjects are marked by the suffix *-:*, which lengthens the final vowel of the verb stem. Second person is marked by the suffix *-nki* and third person by the suffix *-n*. The suffix *-ntsik* marks first-person inclusive, meaning 'you and I.'

(8) Subject suffixes in present tense

		rika-	'see'
-:	'1'	*rika-:*	'I see'
-nki	'2'	*rika-nki*	'you see'
-n	'3'	*rika-n*	's/he sees'
-ntsik	'1.INCL, first person inclusive'	*rika-ntsik*	'we see' (you and I)

The suffixes in (8) also mark the person of the subject in past tense, with the exception of second person, which is marked by *-yki* rather than *-nki* (*rika-nki* 'you see' versus *rika-ra-yki* 'you saw').

6.3.2 Tense-Deverbal Slot

The TENSE-DEVERBAL slot can be filled by any one of twenty-seven different suffixes. Nearly half of these indicate **tense**, or the location of an event in time. Present tense is marked by the absence of an overt suffix in the TENSE-DEVERBAL slot, as illustrated in (8) and (10). South Conchucos Quechua also has five past-tense suffixes: *-sha* in (1), (5), (11), and (14), *-ru* in (Table LP6.2) and (13), *-na:* 'narrative past,' *-ra* in (7), and *-q* in Exercise (4).

Why does South Conchucos Quechua have so many past-tense suffixes? We can answer this question by examining how each is used in connected speech. For example, either *-ru* or *-ra* can report a past event, whether it took place recently or many years ago. The contrast is that events marked by *-ru* are usually more recent than events marked by *-ra*. In other words, recent past *-ru* and remote past *-ra* specify relative degrees of pastness.

Surprisingly, recent past *-ru* is used only with first-person, second-person, and first-person inclusive referents. Recent past in third person is marked by the suffix *-sha* instead.

Habitual past *-q* in Exercise (4) reports a situation that is customarily repeated in the past. In contrast, the past-tense suffixes *-ra*, *-ru*, and *-sha* report past situations that are not ongoing, but bounded in the past.

The past-tense suffixes *-ru* and *-ra* are followed by a separate suffix that marks the subject. In contrast, each suffix in (9) marks both future tense and the person of the subject, rather than marking these with two separate suffixes. (Textbox LP6.6 gives an example sentence using the suffix *-shayki*.)

(9) Future-tense suffixes

		rika-	'see'
-sha:	'1.FUT'	*rika-sha:*	'I will see'
-nki	'2.FUT'	*rika-nki*	'you will see'
-nqa	'3.FUT'	*rika-nqa*	's/he will see'

-shun	'1.INCL.FUT'	*rika-shun*	'we will see' (you and I)
-shayki	'FUT1>2, first-person subject with second-person object'	*rika-shayki*	'I will see you'

TEXTBOX LP6.6 ONE SUFFIX, THREE COMPONENTS OF MEANING

The suffix *-shayki* conveys three components of meaning. It marks not only future tense and first-person subject, but also second-person object:

tsay-kaq-ta=ra:	*willa-yku-shayki=qa*
that-DEF-OBJ=YET	tell-OBLIGATE-FUT1>2=TOP
'I will tell you about that.'	

Some suffixes that fill the TENSE-DEVERBAL slot produce an adverbial clause and have a special function of specifying its subject. The adverbial suffix *-r*, illustrated in (5), indicates that the subject of the adverbial clause is the same as the subject of the main clause. In contrast, *-pti* indicates that the subjects of the two clauses are different. For example, the subject of the main clause in (10) is *mamantsik* 'our mother' and the subject of the adverbial clause is first person 'I.' Because the two subjects are different, the speaker uses the adverbial suffix *-pti* in the tense-deverbal slot of the verb *shakamupti:pis* (in brackets).

(10) *mama-ntsik* *waqa-n* *feyupa* [*sha-ka-mu-pti-:=pis*]
mother-1.INCL cry-3 much come-MIDDLE-TO-ADV.DS-1=EVEN
'Our mother cries a lot, even though I come home often.'

STOP AND REFLECT LP6.2 **SLEEPING IN SOUTH CONCHUCOS QUECHUA**

Based on what you have learned so far, determine the South Conchucos Quechua forms for 's/he recently slept,' 'I sleep,' 'you will sleep,' and 'we (inclusive) recently slept.' Check your answers in Sidebar LP6.9.

6.3.3 Optional Verb Slots

Twenty-eight additional suffixes may fill the six OPTIONAL slots close to the verb root. Speakers use these suffixes to express a variety of functions not available in the OBLIGATORY slots discussed above. We will now examine suffixes that adjust transitivity and express social functions.

SIDEBAR LP6.7
For examples of causative morphemes in other languages, see Chapter 4, and the Manambu Language Profile, Textbox LP10.5.

First, certain suffixes affect the **transitivity** of a verb by increasing or decreasing the number of arguments it controls. For example, the verb root *wanu-* 'die' normally takes only one argument: the subject. When the **causative** suffix *-tsi* is added, however, the resulting verb stem *wanu-tsi-* 'kill' takes two

arguments: a subject and an object. The transitivity has been changed from intransitive to transitive.

(11) *wanu-sha* 'she died'
wanu-tsi-sha 'he killed her' (caused her to die)

SIDEBAR LP6.8
Since both the causative and passive suffixes result in adjustments to the broader grammatical structure of the clause, we can say that South Conchucos Quechua has causative and passive **constructions** (see Chapter 6, Section 6.4).

The **passive** suffix *-ka:* (allomorph *-ka*) also changes the transitivity. The verb root *rura-* 'do' normally can take two arguments: a subject and an object. When the passive suffix *-ka* is added, the resulting verb stem controls only one argument: the subject. The transitivity has been changed from transitive to intransitive.

(12) *rura-n* 'he does it'
rura-ka-n 'it happens'

Other suffixes in the optional verbal slots systematically express social functions, such as **stance**. For example, in (13) the suffix *-rku* indicates both parties' willingness to stay together by mutual consent. The stances of the participants converge. By contrast, in (14) the suffix *-yku* (allomorph *-yka*) conveys the unwillingness of the children to be put to sleep by their mother. The stances of the participants diverge.

(13) *ta:ra-ya-ru-:* *ishke:* *tsakay* *punu-rku-r=yan*
stay-PL-PST-1 two night sleep-CONSENT-ADV.SS=DISTR
'We stayed together, sleeping there for two nights.'

(14) *rantiku-sha* *wamra-n-kuna-ta* *punu-yka-tsi-r*
sell-PST child-3-PL-OBJ sleep-OBLIGATE-CAUS-ADV.SS
'She sold (drinks) after putting her unwilling children to sleep.'

SIDEBAR LP6.9
Answers to Stop and Reflect LP6.2:

's/he recently slept'	*punu-sha*
'I sleep'	*punu-:*
'you will sleep'	*punu-nki*
'we (inclusive) recently slept'	*punu-ru-ntsik*

The South Conchucos Quechua language is beautiful and complex, a reflection of shared concepts distilled through generations of human experience. Language documentation makes these ideas accessible to others and helps motivate the speech community to increasingly value their language and to pass it on to future generations.

TEXTBOX LP6.7 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE AND THEIR CORRESPONDING MORPHEMES

Suffixes

1	*-:*	first person
1.INCL	*-ntsik*	first-person inclusive
1.OBJ	*-ma(:)*	first-person object
2	*-yki*	second-person possessive or second-person in past tense
2, FUT.2	*-nki*	second-person subject in present or future tense
3	*-n*	third person
ABL	*-pita*	case: ablative
ADV.DS	*-pti*	adverbializer, different subjects
ADV.SS	*-r*	adverbializer, same subjects
BRIEF	*-ri/-ra*	punctual aspect (brief duration)
CAUS	*-tsi*	causative
CONSENT	*-rku/-rka*	mutual consent, aligned stance, perfective aspect
DEF	*-kaq*	definite
FUT.1	*-sha:*	future tense, first-person subject
FUT.2	*-nki*	future tense, second-person subject
FUT.3	*-nqa*	future tense, third-person subject
FUT.1.INCL	*-shun*	future tense, first-person inclusive subject
FUT.1>2	*-shayki*	future tense, first-person subject, second-person object
GEN	*-pa*	case: genitive
JUST	*-lla*	delimitative, courtesy, just
MIDDLE	*-ku/-ka*	middle voice, reflexive
OBJ	*-ta*	case: direct or indirect object
OBLIGATE	*-yku/-yka*	obligation, non-aligned stance, perfective aspect
PASS	*-ka(:)*	passive
PST	*-ra*	past tense, general
PL.N	*-kuna*	plural noun
PL.V	*-ya(:)*	plural verb
PST	*-ru*	past tense, recent
PST	*-sh(a)*	past tense, recent, involving third person
PST.HABITUAL	*-q*	past habitual aspect
PURP	*-pa:*	case: purpose
TO	*-mu*	cislocative, translocative (directional affix)

Evidential enclitics

AFFIRM	*=m(i)*	evidential: affirmed individual knowledge
APPEAL	*=chir*	evidential: unaffirmed mutual knowledge
CONJECTURE	*=ch(i)*	evidential: unaffirmed individual knowledge
EPISODE.YET	*=ran*	evidential: episodic individual knowledge
MUTUAL	*=cha:*	evidential: affirmed mutual knowledge
REPORT	*=sh(i)*	evidential: reportative, nonpersonal knowledge

Other enclitics

DISTR	*=yan*	distributive
EVEN	*=pis/=si*	additive, even, too
TOP	*=qa*	topic
YET	*=ra:*	yet

SUGGESTIONS FOR FURTHER READING

Adelaar, **Willem F. H.**, with **Pieter Muysken**. 2004. *The languages of the Andes*. Cambridge University Press.

This book documents in a single volume the wide variety of languages and language families native to the Andes region of South America.

Bode, **Barbara**. 1989. *No bells to toll: Destruction and creation in the Andes*. New York: Scribner.

This book gives insight into the minds of Quechua and Spanish speakers in an Andean valley who tell their own stories in the aftermath of a devastating earthquake and massive avalanche.

Hintz, **Daniel J.** 2011. *Crossing aspectual frontiers: Emergence, evolution, and interwoven semantic domains in South Conchucos Quechua*. University of California Publications in Linguistics 146. Berkeley: University of California Press. (PDF available online at: www.escholarship.org/uc/item/6wb842zj.)

Based on naturally occurring speech in South Conchucos Quechua, the author describes the remarkable aspect system and its relation to tense, modality, and other semantic domains.

Hintz, **Daniel J.**, and **Diane M. Hintz**. 2017. "The evidential category of mutual knowledge in Quechua." In **Lau**, **M.** and **W. Adelaar** (eds.), *Lingua* [*Special Issue: Essays on evidentiality*] 186–187: 88–109. http://dx.doi.org/10.1016/j.lingua.2014.07.014.

This article shows how South Conchucos and Sihuas Quechua speakers use evidential markers to carefully distinguish individual knowledge from socially shared knowledge.

Spyri, **Johanna**. 2010. *Heidi*. Trans. **Reida Valenzuela**, **Edilberto Valenzuela**, and **Diane Hintz**. Huaraz, Peru: Instituto Lingüístico de Verano. (PDF and MP3 recordings available online at: www.peru.sil.org/es/resources/archives/2763.)

A translation of the classic Swiss novel *Heidi* into South Conchucos Quechua, with watercolors contextualized for the Andes by native artist Tobías Mendoza.

Weber, **David John**, and others. 1998. *Rimaycuna, Quechua de Huanuco: Diccionario del quechua del Huallaga con índices castellano e ingles*. Lima, Peru: Instituto Lingüístico de Verano. (PDF available online at www.peru.sil.org/es/resources/archives/30036.)

This trilingual dictionary (Huallaga Quechua – Spanish – English) is the most comprehensive available for any Quechuan language.

EXERCISES

1. Parsing
Divide the word *papantsikkunapa:* 'for our potatoes' into separate morphemes. How many suffixes does this word have? What does each suffix mean? Compare with the word *hakankunapa:* in (1).

2. Past habitual
Which two English words in the translation below convey the meaning signalled by the habitual past suffix *q*?

qocha-pita=qa	*pe*	*sha-ka-ya:-mu-q*	*kiki-n-kuna-lla*
lake-ABL=TOP	then	come-MIDDLE-PL-TO-PST	self-3.POSS-PL-JUST

'From the lake (the cows) used to come all by themselves.'

3. Adverbial

If the speaker in Example (10) above had used the adverbial suffix *-r* in place of *-pti*, as in (a), how would this change the meaning? Fill in the appropriate two English words below.

mama-ntsik	*waqa-n*	*feyupa*	[*sha-ka-mu-r=pis*]
mother-1.INCL	cry-3	much	come-MIDDLE-TO-ADV.SS=EVEN

'Our mother cries a lot, even though _____ _____ home often.'

4. "Peruvian death pepper"

South Conchucos Quechua speakers refer to the local variety of hot pepper as *utsu*. These aromatic peppers are also known as *gringu wanutsiy*, which means '(will) kill a gringo.' Garfield's colorful term is "Peruvian death pepper."

Carefully examine (a) and then answer the following questions.

a.

utsu-ta=qa	[*alla:pa*	*aya-pti-n=pis*]	*miku-ya-nki=ra:*
hot.pepper-OBJ=TOP	very	be.spicy-ADV.DS-3=EVEN	eat-PL-2-YET

'Even though they are very spicy, you still eat hot peppers'.

i. Identify each affricate and nasal consonant.
ii. How many long vowels are there?
iii. What is the word class of *alla:pa*?
iv. There is only one noun in ( ). Can you identify it?
v. The two-word adverbial clause *alla:pa ayaptinpis* (within brackets) is embedded within the main clause *utsutaqa mikuyankira:*. What is the translation of the adverbial clause? What is the translation of the main clause?
vi. What is the grammatical relation (subject, object, or oblique) that links *utsutaqa* to the main clause verb *mikuyankira:*? What case suffix indicates this?
vii. What is the order of these two main-clause elements?

Figure LP6.5 Garfield strip featuring the "Peruvian Death Pepper" GARFIELD © 2000 Paws, Inc. Reprinted with permission of UNIVERSAL UCLICK. All rights reserved.

5. Object-Tense-Subject

i. Divide each verb on the left into separate morphemes (verb root plus suffixes).

ii. List the form and meaning of each verb root and suffix.

iii. Fill in the blanks.

apan	's/he takes'
apa:	'I take'
aparan	's/he took'
apara:	'I took'
muruntsik	'we (inclusive) plant'
mururantsik	'we (inclusive) planted'
murunki	'you plant'
mururayki	'you planted'
_____	'I plant'
_____	'you take'
_____	'you took'

iv. Challenge: Identify the meaning of the verbal suffix *-ma(:)*. (You already know the meanings of the suffixes *-n*, *-nki*, and *-yki* and the past-tense suffix *-ra*.) Fill in the blanks.

willan	's/he tells'
willaman	's/he tells me'
willamanki	'you tell me'
apamaran	's/he took me'
apamarayki	'___ took me'
_____	'you told me'
qatiman	's/he follows ___'
qatimaq	's/he used to follow me'
qatimaran	'_____'

LANGUAGE PROFILE 7

Tsez

7.1 Introduction

Tsez, also known as Dido, is spoken in the North Caucasus, more specifically in the Republic of Daghestan (also spelled Dagestan), the southernmost constituent republic of the Russian Federation. Tsez is spoken by about 12,500 people, according to the 2010 census of the Russian Federation. Most speakers of Tsez live in their traditional territory in western Daghestan, against the main range of the Caucasus mountains and close to the frontier with the Republic of Georgia. ("Dido" is, incidentally, the Georgian name for the Tsez.) However, a substantial number, perhaps about 45 percent, have migrated to lowland areas of Daghestan. In the traditional territory, Tsez is the usual language of spoken communication and is acquired as a first language by all children. As such, the language is not currently endangered, although there are some recent changes that could jeopardize its status in the not too distant future: the frontier between Russia and Georgia has been increasingly militarized, and the traditional Tsez area is now home to a military presence whose members either are native speakers of Russian or use Russian as their lingua franca and who neither know nor can be expected to learn Tsez.

Tsez is one of five languages belonging to the Tsezic group of languages, which also includes Khwarshi, Hinuq (Ginukh), Bezhta, and Hunzib (Gunzib). The languages are about as distinct from one another as the Germanic languages, so that speakers of one Tsezic language can easily recognize individual words in another – the word for 'girl,' for instance, is *kid* in both Tzez and Bezhta, just as 'hand' is *hand* in both English and German. However, as with Germanic languages, speakers of one language have to take the trouble to learn another if they want to speak it fully and not just recognize individual words. The Tsezic group of languages in turn is part of a larger language family called Nakh-Daghestanian (also called East Caucasian or Northeast Caucasian), which includes most but not all of the indigenous languages of Daghestan. (For example, Kumyk, a major language of the Caspian seaboard, is a Turkic language.) Some Nakh-Daghestanian languages are also spoken in northern Azerbaijan as well as further to the west. These include Chechen and Ingush, which are spoken in the like-named republics of the Russian Federation, as well as Tsova Tush (also called Bats and Batsbi). The latter is an endangered language spoken by perhaps 3,000 speakers in Georgia and is undergoing rapid linguistic assimilation to Georgian.

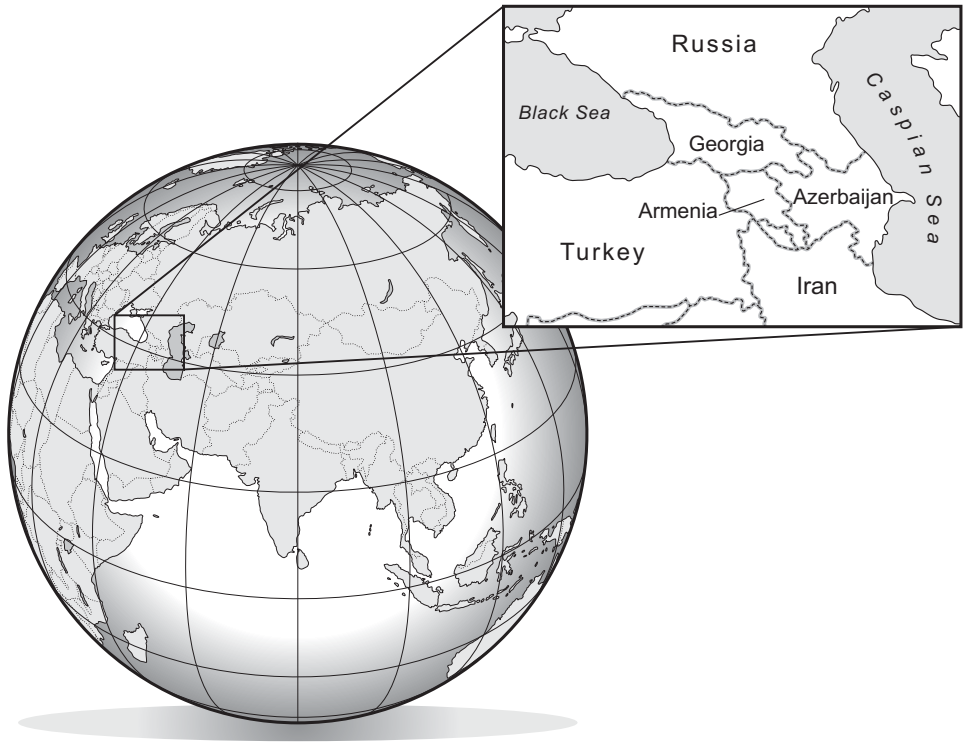


Figure LP7.1 Area of Russia bordering Georgia; the location of Daghestan

Figure LP7.2 Location of the Tsez-speaking area

SIDEBAR LP7.1
The online resources for this language profile include a Tsez vocabulary list with sound files, a short Tsez folktale about a hen and a rooster, transcribed, glossed, and translated, with audio recordings, and a brief bio and photo of the Tsez consultant whose voice is on the recordings.

The internal diversification of the Nakh-Daghestanian family is comparable to that of Indo-European, despite the much smaller area it covers and its much smaller number of languages and speakers.

The North Caucasus is an area of extreme linguistic diversification. The Nakh-Daghestanian family includes both large (by local standards) languages like Chechen, with well over a million speakers, and Avar, with over 700,000 speakers, as well as some smaller languages. Some of these smaller languages have even fewer speakers than Tsez (e.g., Hinuq is the language of a single village, with about 600 speakers). As a general rule, the larger languages are characterized by exogamic marriage practices, that is, members of these speech communities are encouraged not to marry close relatives, which over time has probably led to the assimilation of smaller speech communities and the development of larger ones. The smaller languages are characterized by endogamic marriage practices, that is, members of the speech community are encouraged to marry within a very restricted geographical area and kinship network, including, for instance, cousins. In general, endogamic practices characterize the more mountainous areas, but the small speech communities should not be seen as a direct result of the difficulties in population

Figure LP7.3 The author, Bernard Comrie, with Arsen Abdulaev, a native speaker of Tsez

SIDEBAR LP7.2
For an explanation of the term lingua franca, see Section 15.2.1.

movement caused by mountainous terrain – in New Guinea, for instance, it is precisely in the Highlands that the larger speech communities are found. Rather, endogamy is a response to the shortage of agricultural land in the mountains and the fear that marriage to outsiders might give the latter rights to this scarce land.

Tsez is basically an unwritten language. Avar, a distant relative within the Nakh-Daghestanian language family, is the traditional **lingua franca** of western Daghestan, including the area where the Tsezic languages are spoken. More recently, however, Russian has encroached on this role, not least because it is the language of instruction in local schools (and more recently of television), although Avar is still taught as a school subject. In general, those who grow up in the traditional Tsez-speaking area speak Tsez, Avar, and Russian, though younger people usually feel more at home with Russian as their primary non-native language, and older speakers with Avar. There is no standard Tsez language; each village has its own dialect. However, there is rarely any difficulty for inhabitants of one village to understand those of another, with the possible exception of the dialect of the village of Sagada (Tsez: Soǯ'o), the most divergent Tsez dialect. Tsez speakers speak the dialect of their home village, and there is no single prestigious variety that other speakers assimilate to. The dialectal diversification of the language can be seen as another effect of endogamy, strengthening relations within the village and setting each village apart from its neighbors.

As might be expected from the status of Avar as a lingua franca, Tsez has borrowed a lot of vocabulary from Avar, including many vocabulary items that ultimately come from Persian, Turkic languages, or Arabic. (The Tsez, like most populations of Daghestan and the North Caucasus more generally, are Muslims, in contrast to the Christian Georgians across the main range of the Caucasus.) Although the frontier with Georgia is now closed, there was regular contact across the main range of the Caucasus going back at least two millennia. Not surprisingly, Tsez also has some loanwords from Georgian, mainly words denoting concrete items that were also acquired initially from Georgia, such as certain foodstuffs, agricultural implements, and elements of house building and furnishing. Nowadays, Russian is the main source of loanwords referring to aspects of the modern world.

7.2 Phonology

Although phonetics and phonology is not the main thrust of this chapter, it will be necessary to explain some of the unusual properties of the Tsez phoneme inventory, especially as it relates to consonants, so that the examples can be appreciated not only morphologically and syntactically, but also phonetically and phonologically.

All Tsez dialects have five short vowels, indeed the usual set of five vowels that is the single most frequent vowel inventory across the languages of the world. Different dialects have differing numbers of long vowels, though the Asakh (Tsez: asaq) dialect of the village of Tesbari (Tsez: ceboru), on which this chapter is based, has one long vowel. (Orthographically, this is represented as [ā], rather than IPA [aː].) See Table LP7.1.

TABLE LP7.1 The vowel inventory of Tsez

	Front	Back	Front	Back
High	i	u		
Mid	e	o		
Low	a		ā	
	Short vowels		Long vowels	

TABLE LP7.2 The consonant inventory of Tsez

	Bilabial	Dental	Lateral	Palatal	Velar	Uvular		Pharyngeal	Glottal
						Plain	Pharyngealized		
Plain stop	p	t			k				
	p’	t’			k’	q’	q’ˤ		
	b	d			g				
Affricate		c	ƛ	č		q	qˤ		
		c’	ƛ’	č’					
Fricative		s	ɬ	š		x		ħ	h
		z		ž		ɣ	ɣˤ	ʕ	
Nasal	m	n							
Liquid		r	l						
Semivowel	w			y					

The consonant system, by contrast, is very rich (as in other languages of the region; see Textbox LP7.1). The symbols are in general those of the International Phonetic Alphabet, although [š, ž] are used to indicate the palato-alveolar fricatives [ʃ, ʒ], [y] is used rather than [j] for the palatal glide, and the symbols [x] and [ɣ] (rather than [χ] and [ʁ]) are used for the **uvular** fricatives. For the affricates, which are very frequent in Tsez, the IPA **digraphs** (two-character symbols) have been abandoned in favor of the symbols [c] for dental, [ƛ] for lateral (see below), and [č] for palatal. See Table LP7.2.

Like many languages spoken in the Caucasus region and belonging to different families (including Indo-European), Tsez has a three-way opposition among its plain stops. In addition to voiced [b], for instance, there are two voiceless correspondents, slightly aspirated [p] and **ejective** [p’]. The ejective is formed by closing the vocal cords, closing the lips, raising the larynx to increase pressure within the oral cavity, and then releasing the

SIDEBAR LP7.3
The IPA symbol [q] typically represents a voiceless uvular stop. In Tsez, it is phonetically the voiceless uvular affricate [qχ], hence its position in the consonant chart. Since there is no voiceless uvular stop in the language, the symbol *q* is used to represent this sound throughout this chapter.

SIDEBAR LP7.4
For more on ejectives, see Textbox 2.6 on ejective stops.

closure at the lips (and releasing the closure of the vocal cords at the same time or just after). The release of the compressed air creates the "popping" sound that is characteristic of ejective consonants. The vocal cord (glottal) closure is what is crucial to ejective sounds; this contrasts them with all other phonemes of the language, which use air directly from the lungs. There is only a two-way opposition among the affricates and uvulars, with no voiced counterparts. Despite the richness of their consonant system, speakers of Tsez may experience difficulties with the [dʒ] sound at the beginning of *John*, which is absent from their phoneme inventory (and also, incidentally, with the [f] at the beginning of *fish*, which Tsez also lacks). The **lateral affricate** ƛ consists of a [t] opening out into an [l], much as in English *bottle*. The uvulars are pronounced further back in the mouth than the velars, with the back of the tongue against the uvula. The **pharyngeals** involve compressing the larynx to give a hoarse sound. It should be noted that the uvulars also have pharyngealized counterparts, which are distinct phonemes, and which involve compressing the larynx at the same time as making the uvular sound. Indeed, in word-initial position some other consonants also have phonemically distinct pharyngealized counterparts. A rich set of consonant phonemes pronounced in the back of the mouth (uvulars, pharyngeals) is typical of languages of the North Caucasus, as well as a number of other Middle Eastern languages, including Arabic. Finally, most (though not all) consonants can also occur with phonemically distinct labialization, i.e., simultaneous lip rounding. To learn more about these sounds, see Stop and Reflect LP7.1.

STOP AND REFLECT LP7.1 **TRY SOME TSEZ SOUNDS**

Tsez vocabulary list with sound files

A list of Tsez vocabulary is provided on the website, together with associated sound files. Listen to the words and try repeating them, being as accurate as you can in pronunciation.

SIDEBAR LP7.5
See Section 13.6 for the discussion of **linguistic areas** and other examples of linguistic areas.

7.3 Clause Structure

In order to explain the basic structure of clauses in Tsez, I will use some illustrative sentences taken from a folktale, "The Hen and the Rooster," collected by Isa Abdullaev. In this story the rooster cheats on the hen by visiting a frog, after which the hen gets her revenge by beating up the frog. Eventually, the hen and rooster are reconciled, although the long-term fate of the frog remains, alas, unknown. Since sentences in Tsez narratives have a tendency to be rather long, incorporating several clauses (a point to which I return below), some material (in particular, dependent clauses) has been omitted from the sentences as they appear in the original story. A list of glosses is provided in Textbox LP7.2.

"Hen and Rooster" sound files

"Hen and Rooster" glossed text

7.3.1 Intransitive Verbs

Consider the first example (1):

(1) *hudāyziko* *mamalay* *b-ik'i-n* *ɬoħro-de-r.*
on.third.day rooster.ABS III.SG-go-PST.UNW frog-APUD-LAT
'On the third day the rooster went to the frog.'

TEXTBOX LP7.2 **GLOSSES**

These terms, their meanings, and uses will be presented below.

Term	Meaning	Gloss	Term	Meaning	Gloss
adessive	location near	AD	super	location above, on top of	SUPER
possessive	possession	POSS	Latin *apud*	location beside	APUD
lative	motion to	LAT	witnessed	directly witnessed event	WIT
ablative	motion away from	ABL			
sub	location under	SUB	unwitnessed	event not witnessed	UNW

TEXTBOX LP7.1 **EVIDENCE OF A LINGUISTIC AREA**

You might notice that the consonant inventory of Tsez shares a number of features with that of Kabardian, another language of the Caucasus. For example, both languages have a series of ejective stops, many velar and uvular stops and fricatives, and a voiceless pharyngeal fricative. These features, together with others, are found in many languages of the region and suggest that the Caucasus is a linguistic area.

The core of this clause is *mamalay bik'in* 'the rooster went'; indeed, this could be a well-formed clause and sentence in isolation. The verb *-ik'i-* 'go' is an intransitive verb, like its English counterpart, and requires only a single argument, the one that goes. In Tsez, the noun phrase referring to this argument, *mamalay* 'rooster,' is in its **citation form**, that is, the form that would be given if one were to ask a speaker of Tsez: "What is the word for *rooster* in your language?" For reasons that will become clear below, I will call this form of a noun the **absolutive** case, abbreviated ABS. So a Tsez intransitive verb takes a single argument in the absolutive case.

The word *ɬoħroder* 'to the frog' is not an obligatory constituent of the clause, but nonetheless it paves the way for a discussion of one of the most fascinating aspects of Tsez morphology. The absolutive case of this word is *ɬoħro*; so in order to express the idea 'the frog went,' a Tsez speaker would say *ɬoħro bik'in*, as one would predict from the preceding

discussion. But in Example (1), the word for 'frog' is in a different case. In fact, the word *łoħroder* includes two case suffixes in succession, *-de*, which I have glossed as APUD, and *-r*, which I have glossed as **lative** (abbreviated LAT). *Apud* is a Latin preposition meaning 'beside, at the house of, in the presence of,' and is used as a convenient gloss for a Tsez case suffix that expresses location beside an entity, especially an animate (including human) entity. The expression *łoħro-de* on its own is well-formed in Tsez and simply means 'beside the frog,' referring to a static location near the frog. Other case suffixes can express different kinds of location in Tsez, as in *łoħro-ƛ'* 'frog-SUPER,' i.e., 'on the frog,' or *łoħro-ƛ* 'frog-SUB,' i.e., 'under the frog,' where I again use Latinate glosses for convenience (Latin SUPER 'above, on top of'; SUB 'under'). Note that the suffix for SUPER has an ejective lateral affricate (ƛ'), while that for SUB has a plain lateral affricate (ƛ).

SIDEBAR LP7.6
To review the notion of **case**, see Textbox 5.2.

The addition of lative *-r* expresses motion to(ward), so *łoħro-de-r* 'frog-APUD-LAT' means 'to beside the frog.' In English we would probably be content with just 'to the frog,' but Tsez requires greater explicitness. We can now form words meaning 'onto the frog' and 'to under the frog' by adding the lative, although some vowel insertion is needed in Tsez to avoid consonant clusters not tolerated by the language: *łoħro-ƛ'o-r* 'frog-SUPER-LAT'; *łoħro-ƛ-er* 'frog-SUB-LAT.' In addition to the lative suffix indicating motion to(ward), Tsez also has an ablative suffix *-āy*, indicating motion (away) from. We can now form *łoħro-d-āy* 'frog-APUD-ABL,' i.e., 'away from beside the frog' (though again English would probably be content with just 'from the frog'); *łoħro-ƛ'-āy* 'frog-SUPER-ABL,' i.e., 'from on the frog' (more idiomatically in English, 'off the frog'); and *łoħro-ƛ-āy* 'frog-SUB-ABL,' i.e., 'from under the frog' (which in this case is also idiomatic English).

Stringing cases together in this way to express a combination of a specific location type (beside, on, under) and location versus motion (at, to, from) is very unusual among the languages of the world, although it happens to be typical of Nakh-Daghestanian languages. These languages are often said to have huge case inventories, with scores of cases, but this is rather misleading: instead, the languages have a rather restricted number of cases and a general rule for combining these cases, thus giving rise to a large number of case combinations. Note that English can sometimes combine prepositions in this way (e.g., 'from under'), although this is relatively rare in languages with prepositions (or postpositions), and as we saw above with literal and idiomatic English translations, not all of the logically expected combinations are possible or idiomatic in English, in contrast to Tsez.

Let us now turn to the verb in Example (1). The suffix *-n* (with a variant *-no* after a consonant) on the verb is a tense suffix, expressing the so-called past unwitnessed, abbreviated PST.UNW. The "past" part of this is unsurprising, since Tsez, like English, has a set of past-tense forms that are used not only for real events that happened in the past but also conventionally in stories that are told as if they had happened in the past. But what about "unwitnessed"? It turns out that Tsez has two past tenses, past witnessed (PST.WIT) and past unwitnessed, distinguished according to whether or not the speaker witnessed the event in question or not. In Example (1), as is typical for a traditional tale, the speaker, in this case the narrator, did not witness the events in question, so the past unwitnessed is used. If, however,

the same sentence were to occur not in a traditional tale but as a report on a strange incident I witnessed in the yard, then I would say (2), using the past witnessed suffix *-s*.

(2) *mamalay* *b-ik'i-s* *łoħro-de-r*
rooster.ABS III.SG-go-PST.WIT frog-APUD-LAT
'The rooster went to the frog.'

SIDEBAR LP7.7
Evidentiality is also described in Section 13.2.2 and in the South Conchucos Quechua Language Profile, Section LP6.2.7.

The grammatical category that indicates the speaker's source of the information expressed in a sentence is called **evidentiality**. Tsez has a rather restricted evidential system: evidentiality is distinguished only with past time reference – the present-tense verb form *bik'ix* 'goes,' with the present-tense suffix *-x*, contains no information as to whether or not the speaker is witnessing the event – and there is only a binary opposition between witnessed and unwitnessed. Many other languages of the world have a richer set of oppositions, distinguishing, for instance, between information obtained from a visual versus an auditory source. See Stop and Reflect LP7.2.

STOP AND REFLECT LP7.2 **ANALYZE TSEZ EVIDENTIALS IN USE**
"Hen and Rooster" folktale with sound file
On the website there is a glossed and translated Tsez folktale. Highlight the witnessed evidentials (glossed WIT) in one color and the unwitnessed evidentials (glossed UNW) in another. Their distribution in the folktale follows a predictable pattern. What is it? Bonus question: The one exception to the pattern is in Line (12). Can you explain why the rooster's utterance uses the unwitnessed evidential?

Finally, what about the prefix *b-* on the verb with its mysterious gloss 'III'? In English, regular verbs agree with their subjects in person and number in the present tense, with a distinction between the third-person singular form (*he/she/it sings*), and the form used for all other person-number combinations (*I/we/you/they sing*). In Tsez, verbs do not agree in person, but they do agree in number, and also in gender. The gloss III.SG in (1) indicates that the verb is agreeing with a noun of gender III and in the singular. Incidentally, only verbs beginning with a vowel can show gender–number agreement, while verbs beginning with a consonant simply show no agreement, so 'the rooster crowed' shows up simply as *mamalay q'oq'oǎi-n* 'rooster.ABS crow-PST.UNW.'

Tsez has a system of four genders, each of which triggers a distinct consonant prefix on vowel-initial verbs in the singular; in the plural, there is a distinct prefix for gender I, while the other three genders merge into a single corresponding prefix. The forms of the prefixes are shown in Table LP7.3. These are, incidentally, the only prefixes in the language.

A relatively large number of genders is typical for Nakh-Daghestanian languages, with three to five being common and larger numbers rarer but clearly attested. For languages with such large numbers of genders, there is a tradition of using the term "noun class" rather than gender, but there is really no principled basis for this distinction. Just as an

TABLE LP7.3 Tsez gender prefixes

	I	II	III	IV
SG	Ø-	y-	b-	r-
PL	b-	r-	r-	r-

adjective in Spanish has to agree in gender (and number) with its noun (masculine *-o* in *hombre delgado* 'thin man,' but feminine *-a* in *mujer delgada* 'thin woman'), in Tsez a vowel-initial verb must agree in gender and number.

There is little in the form of a Tsez noun to tell what gender it belongs to (unlike Spanish, for instance, where nearly all nouns ending in *-o* are masculine), although there are some semantic correlates to the various genders. This is clearest with gender I, which includes all and only nouns denoting male humans (and assimilated supernatural beings). Gender II includes all nouns denoting female humans, but also a fair number of inanimate nouns. Gender III includes all nouns denoting animals, but also a large number of nouns denoting inanimates. Gender IV contains only inanimates, including abstract nouns. Thus, for nouns denoting humans and animals, gender is predictable, but inanimate nouns can belong to any of genders II, III, and IV. The precise factors determining gender assignment remain to be worked out, and there may be a large element of purely conventional assignment, but semantic analogy and formal analogy (e.g., initial or final consonants that are similar to the singular gender prefix) both seem to play a role. Given this information about Tsez gender–number prefixes on verbs, *mamalay b-ik'i-n* 'the rooster went' could be changed to: *uži ik'i-n* 'the boy went,' *kid y-ik'in* 'the girl went,' *uži-bi b-ik'i-n* 'the boys went,' or *mamalay-bi r-ik'i-n* 'the roosters went,' where *-bi* is the absolutive plural suffix. It should be noted that the absence of a prefix on a vowel-initial verb specifically indicates gender I singular and is in no sense a neutral form.

SIDEBAR LP7.8
For a description of a different system of gender classes, see the Manambu Language Profile, Section LP10.2.3.

Before leaving gender, we may note one difference between English and Tsez with regard to the conventions for gender of personified animals. In English, the tendency is to treat personified animals as humans, and to refer to them as *he* and *she*. In Tsez, personified animals remain animals, and therefore take gender III agreement. This is absolutely consistent through all such tales I have encountered, even in an example like "The Hen and the Rooster" where the participants have such gender-stereotyped roles (e.g., errant husband, betrayed wife, "the other woman").

7.3.2 Transitive Verbs

Let us now consider a transitive verb, that is, one having an agent or agent-like argument and a patient or patient-like argument, as in (3). The English translation of (3) contains a verb *break* that can be both transitive (as here) and intransitive (*The leg broke*), but Tsez has no verbs of this kind, and the verb *-ecur-* is unequivocally transitive, requiring two arguments. (The Tsez equivalent to English intransitive 'break' is the related verb *-ecu-*.)

(3) *onoč-ā* *y-ecur-no* *k'onču.*
hen-ERG II.SG-break-PST.UNW leg.ABS
'The hen broke [the frog's] leg.'

Let us first consider the case-marking in (3). In English, most noun phrases appearing as core arguments of intransitive or transitive verbs show no case-marking, but some personal pronouns do. As can be seen in Examples (4) and (5), in English the single argument of an intransitive verb (abbreviated as S), and the agent-like argument of a transitive verb (abbreviated A) are in the so-called **nominative** (NOM) case, while the patient-like argument of a transitive verb (abbreviated P) is in the so-called **accusative** (ACC) case.

(4) *He* *went.*
S
NOM

(5) *He* *hit* *me.*
A P
NOM ACC

Tsez has a different system, which holds for nearly all noun phrases in the language. Compare examples (6) and (7) below to (4) and (5) above. In a transitive clause, it is the P that appears in the same case as the S of an intransitive clause, while the A appears in a different case. Conventionally, the case used for S and P is called the absolutive (ABS), while the case used for A is called the **ergative** (ERG).

(6) *mamalay* *b-ik'i-s*
rooster.ABS III.SG-go-PST.WIT
S
ABS
'The rooster went.'

(7) *onoč-ā* *y-ecur-no* *k'onču*
hen-ERG II.SG-break-PST.UNW leg.ABS
A P
ERG ABS
'The hen broke the leg.'

In (7), the citation form of the word 'leg' is *k'onču*, and as with all Tsez nouns this is the form used as absolutive. The citation form and absolutive for 'hen' is *onoču*. The ergative suffix in Tsez is *-ā*. As A of its clause in (7), the word for 'hen' must appear in the ergative, i.e., as *onoč-ā*. (The final vowel of the stem is dropped before the ergative suffix to avoid vowel hiatus.) The case-marking system of Tsez is thus an ergative-absolutive system, in contrast to the nominative-accusative system found (albeit only with some personal pronouns) in English. **Ergative-absolutive** case-marking is widespread among the indigenous languages of the Caucasus.

SIDEBAR LP7.9
For other examples of languages with ergative case-marking, see the Manange Language Profile (LP3) and the Bardi Language Profile, especially Textbox LP8.3.

But what about verb agreement in (7)? The word for 'hen,' like all animal nouns, belongs to gender III. The word for 'leg' belongs to gender II. Clearly, in (7) the verb agrees with 'leg,' i.e., with the P of its clause, not the A. More generally, Tsez verbs agree with their absolutive argument, i.e., like case-marking, verb agreement operates on an ergative-absolutive basis. In English, by contrast, verb agreement, just like case-marking of pronouns, operates on a nominative-accusative basis, so that in *The dogs chase the cat* or *The cat chases the dog*, the verb agrees with the A, just as it agrees with the S of an intransitive verb.

CHAPTER SUMMARY

The scope of this profile has enabled us to examine only a few of the linguistic features of Tsez, concentrating on those that can be introduced in a concise manner without presupposing other information about the language's structure. These have included the remarkable consonant inventory, numerous case-markers that indicate location and direction, an evidential distinction, four gender classes, and ergative-absolutive case-marking. Many relevant features, such as word order, have gone untreated. (For the record, depending on the specific discourse contexts, any rearrangements of the words in the Tsez sentences cited would be possible.) But I hope to have shown how one can gain at least some insight into cross-linguistic diversity by examining a language with a very different typological profile from those which are familiar to us.

TEXTBOX LP7.3 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE

Convention	Meaning
ABL	ablative
ABS	absolutive
ACC	accusative
AD	adessive
APUD	location beside
ERG	ergative
I/II/III/IV	gender classes
LAT	lative
NOM	nominative
POSS	possessive
PST	past
SG	singular
SUB	location under
SUPER	location above; on top of
UNW	unwitnessed
WIT	witnessed

SUGGESTIONS FOR FURTHER READING

Alekseev, **M. E.**, and **R. N. Radžabov**. 2004. "Tsez." In **Job**, **Michael** (ed.), *Indigenous languages of the Caucasus*, Vol. III, Part 1. Ann Arbor: Caravan Books.

This is the only published general account of Tsez in English.

Comrie, **Bernard**. 2008. "Linguistic diversity in the Caucasus." *Annual Review of Anthropology* **37**: 131–148.

This source is valuable for more general information on linguistic diversity in the Caucasus.

Khalilov, **Madzhid**. 2015. "Tsez (Mokok dialect) dictionary." In **Key**, **Mary Ritchie** and **Bernard Comrie** (eds.), *The intercontinental dictionary series*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at: http://ids.clld.org/contributions/162, accessed on 2017–09-11.)

This compilation provides a substantial list of Tsez lexical items with English translations, arranged by semantic field.

EXERCISES

1. Tsez phonology

Analyze the list of Tsez vocabulary provided on the website. How many minimal pairs can you find? How many near-minimal pairs? Provide a list of each.

2. Verb morphology

In this language profile, we noted that Tsez verbs can change their form by adding both prefixes and suffixes. The only prefixes are those indicating agreement in gender. Suffixes include those indicating tense, in particular the past witnessed and past unwitnessed tenses that were introduced in the profile.
Below, you are given examples of intransitive clauses with various verbs and subjects, in both of the past tenses. You will notice that there is some variation across different verbs. For instance, some verbs in the past witnessed end in *-si*, while others end in *-s*; likewise, the past unwitnessed shows variation between *-no* and *-n*. Also, some verbs agree with the subject, as noted in the language profile, while other verbs do not.

a. What determines whether a verb undergoes agreement, like *ik'is/yik'is/bik'is*, or fails to undergo agreement, like *gugis*?

i.
a. *uži č'ariɬsi.* 'The boy woke up.'
uži č'ariɬno.
b. *kid č'ariɬsi.* 'The girl woke up.'
kid č'ariɬno.
c. *ɬoħro č'ariɬsi.* 'The frog woke up.'
ɬoħro č'ariɬno.

ii.
a. *uži exus.* 'The boy died.'
uži exun.
b. *kid yexus.* 'The girl died.'
kid yexun.
c. *ɬoħro bexus.* 'The frog died.'
ɬoħro bexun.

iii.
a. *uži gugis.* 'The boy disappeared.'
uži gugin.
b. *kid gugis.* 'The girl disappeared.'
kid gugin.

c. *ɬoɦro gugis.* 'The frog disappeared.'
ɬoɦro gugin.

iv. a. *uži ik'is.* 'The boy went.'
uži ik'in.
b. *kid yik'is.* 'The girl went.'
kid yik'in.
c. *ɬoɦro bik'is.* 'The frog went.'
ɬoɦro bik'in.

v. a. *uži izis.* 'The boy got up.'
uži izin.
b. *kid yizis.* 'The girl got up.'
kid yizin.
c. *ɬoɦro bizis.* 'The frog got up.'
ɬoɦro bizin.

vi. a. *uži kecsi.* 'The boy slept.'
uži kecno.
b. *kid kecsi.* 'The girl slept.'
kid kecno.
c. *ɬoɦro kecsi.* 'The frog slept.'
ɬoɦro kecno.

vii. a. *uži ƛexsi.* 'The boy stayed.'
uži ƛexno.
b. *kid ƛexsi.* 'The girl stayed.'
kid ƛexno.
c. *ɬoɦro ƛexsi.* 'The frog stayed.'
ɬoɦro ƛexno.

viii. a. *uži oqsi.* 'The boy became.'
uži oqno.
b. *kid yoqsi.* 'The girl became.'
kid yoqno.
c. *ɬoɦro boqsi.* 'The frog became.'
ɬoɦro boqno.

b. What is the relevant factor governing the choice between *-si* versus *-s* for the past witnessed? What governs the choice between *-no* versus *-n* for the past unwitnessed?

c. Some verbs show dialect variation, with different dialects of Tsez preferring one or other of the alternative forms given below. Under what circumstances is this variation permitted?

ix. a. *uži aysi/ays.* 'The boy came.'
uži ayno/ayn.
b. *kid yaysi/yays.* 'The girl came.'
kid yayno/yayn.
c. *ɬoɦro baysi/bays.* 'The frog came.'
ɬoɦro bayno/bayn.

x. a. *uži zowsi/zows.* 'The boy was.'
uži zowno/zown.
b. *kid zowsi/zows.* 'The girl was.'
kid zowno/zown.
c. *ɬoɦro zowsi/zows.* 'The frog was.'
ɬoɦro zowno/zown.

3. Noun morphology

In this language profile, an introduction was given to the interesting system of Tsez cases expressing location (see Textbox LP7.2). In addition to the location types discussed in the profile, two more are introduced here, namely location *near* and location *at*. The latter is also used in the expression of possession. For this reason it is glossed POSS 'possessive.' When used by itself, the simple possessive form of a noun indicates that the noun is in someone's possession (thus the meaning is similar to that of the verb 'have'). When the possessive is combined with the lative suffix, it indicates movement into someone's possession (as with the verb 'give'). When the possessive is combined with the ablative, it indicates movement out of someone's possession (as with the verb 'take away').
The examples in Table LP7.4 give the various case combinations possible for two nouns, *besuro* 'fish' and *halmaɣ* 'friend.'

TABLE LP7.4 Complex case inflections for two Tsez nouns (*besuro* 'fish' and *halmaɣ* 'friend')

	SUPER	AD	APUD	POSS
	besuroƛ'	*besurox*	*besurode*	*besuroq*
+ABL	*besuroƛ'āɣ*	*besuroxāɣ*	*besurodāɣ*	*besuroqāɣ*
+LAT	*besuroƛ'or*	*besuroxor*	*besuroder*	*besuroqor*
	halmaɣƛ'o	*halmaɣxo*	*halmaɣde*	*halmaɣqo*
+ABL	*halmaɣƛ'āɣ*	*halmaɣxāɣ*	*halmaɣdāɣ*	*halmaɣqāɣ*
+LAT	*halmaɣƛ'or*	*halmaɣxor*	*halmaɣder*	*halmaɣqor*

The system is very logical: one combines a suffix for a type of location from the horizontal axis with a suffix for location or motion on the vertical axis.

i. Divide the suffixes from the stems. Do you observe variation in the stems or in the suffixes?
ii. Begin the morphological analysis by focusing on the forms with the single suffix only (i.e., the first and fourth row). List the forms of the SUPER, AD, APUD, and POSS suffixes. You will notice that three of these suffixes each have two allomorphs. The allomorphs with the final vowel are found only on stems that end with consonants, such as *halmaɣ*. Suggest a motivation for the additional vowel on just consonant-final stems, i.e., why should this be? (*Hint*: Try pronouncing the forms with and without the vowel.)
iii. Next address the ablative suffix. What is its form? Why do we not find the *-o* allomorphs of the SUPER, AD, APUD, and POSS suffixes co-occurring with the ablative case-marker? For example, why do we find *halmaɣqāɣ*, rather than **halmaɣqoāɣ*? Also, consider the APUD-ABL forms *besurodāɣ* and *halmaɣdāɣ*. State in prose the phonetic process that has occurred, and then write a rule.
iv. Now consider the lative forms. What is the form of the lative suffix? Here we find the *-o* allomorphs of the suffixes reappearing (as you saw in b). Why should this be?
v. Another set of forms, those with the sub ('under') suffix, follows:

	SUB	
	besuroƛ	*halmaɣeƛ*
+ ABL	*besuroƛāɣ*	*halmaɣƛāɣ*
+ LAT	*besuroƛer*	*halmaɣƛer*

You will notice the vowel /e/ occurring in *halmaɣeƛ*, but in none of the other forms. Is it best to analyze this /e/ as part of the stem, part of the suffix, or as a vowel inserted by rule? Explain the reasoning for your answer. What about the /e/ in the lative forms? Write a single rule that applies in both cases and discuss its phonetic motivation.

vi. Two further Tsez nouns are *ziru* 'fox' and the man's name *idris* 'Idris.' Using everything you have learned about the phonology so far, determine the correct Tsez forms for each of the following. (The English versions are sometimes unidiomatic.)

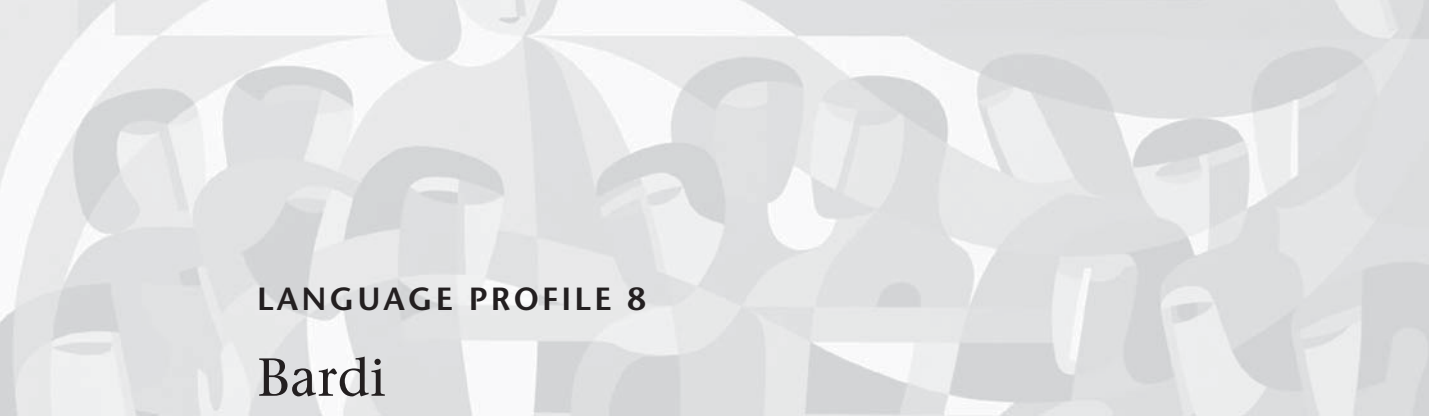
a.	'from under the fox'	SUB-ABL
b.	'from near Idris'	AD-ABL
c.	'on the fox'	SUPER
d.	'by Idris'	APUD
e.	'to by the fox'	APUD-LAT
f.	'to under Idris'	SUB-LAT
g.	'from by the fox'	APUD-ABL
h.	'under Idris'	SUB
i.	'to on the fox'	SUPER-LAT
j.	'near Idris'	AD

4. Pronoun morphology and agreement

Nearly all nouns and most pronouns in Tsez distinguish an absolutive case and an ergative case, as in the examples in the profile. However, first- and second-person singular pronouns are exceptions, since they have an invariable form, *di* (first-person singular) and *mi* (second-person singular), used for all of S, A, and P. Below, you are given some examples of intransitive and transitive clauses with first- and second-person singular pronoun arguments.

a.	*di ik'is.*	'I went (man speaking).'
b.	*di yik'is.*	'I went (woman speaking).'
c.	*di bik'is*	'I went (frog speaking, e.g., in a story).'
d.	*mi ik'is.*	'You went (speaking to man).'
e.	*mi yik'is.*	'You went (speaking to woman).'
f.	*mi bik'is*	'You went (speaking to animal).'
g.	*di mi egirsi*	'I sent you (woman speaking to man).'
h.	*di mi egirsi*	'I sent you (man speaking to man).'
i.	*di mi yegirsi*	'I sent you (woman speaking to woman).'
j.	*di mi yegirsi*	'I sent you (man speaking to woman).'
k.	*di mi begirsi*	'I sent you (woman speaking to animal).'
l.	*di mi begirsi*	'I sent you (man speaking to animal).'

The focus of this problem is on verb agreement. State which argument(s) the verb agrees with in (i) intransitive and (ii) transitive clauses. Is the agreement pattern the same as, or different from, that for full noun phrases?



LANGUAGE PROFILE 8

Bardi

8.1 Introduction

Bardi is one of Australia's 320 or so Indigenous languages. The name of the language is pronounced [ˈbɐːɖi] (see Sidebar LP8.2). Bardi is one of several dialects of a language that is also (confusingly!) called Bardi. Other dialects include Jawi [ɟaːwɪ] (which begins with a voiced palatal stop) and Bard (or Baard) [bɐːɖ]. Bardi is also an **ethnonym** (the name of the people of the area).

SIDEBAR LP8.1
The online resources for this language profile include sound files for all examples and information about members of the Bardi community who are working to support their language and culture.

Most Bardi people live in the northwest of Western Australia, in an area called the Kimberley region. The main Bardi communities are One Arm Point and Lombadina. Bardi people also live in towns such as Broome and Derby, and in outstations (outposts from the communities). Bardi people are sea people; Bardi and Jawi traditional territories included not only the tip of the Dampier peninsula but also the neighboring islands. The Bardi are one of many groups that inhabited Australia prior to contact with Europeans. See Textbox LP8.1 for a related note.

SIDEBAR LP8.2
Transcription note
The symbol [ɖ] represents a voiced retroflex stop. In Bardi, this is pronounced with the tip of the tongue making contact just behind the alveolar ridge. In some languages retroflection is made with the underside of the tongue, but in Bardi the contact is with the tongue tip.

The number of Bardi speakers is quite small. It is not certain exactly how many speakers there are. As of 2018, only about five people speak the language fluently, but many more can understand it and some can speak it a bit. There are about one thousand Bardi people in total.

Although only the oldest people in Bardi communities speak Bardi fluently, some young Bardi children are interested in their language and culture, and there is a language program at One Arm Point school. While the Bardi language is in a fragile state, Bardi people are taking action to make sure their language continues and that their culture is strong.

Bardi is a member of the Nyulnyulan language family. This family has about eight languages in it. They are all spoken in the Western Kimberley region of Western Australia. Nyulnyulan is one of twenty-eight language families that are indigenous to the Australian mainland and the Torres Strait.

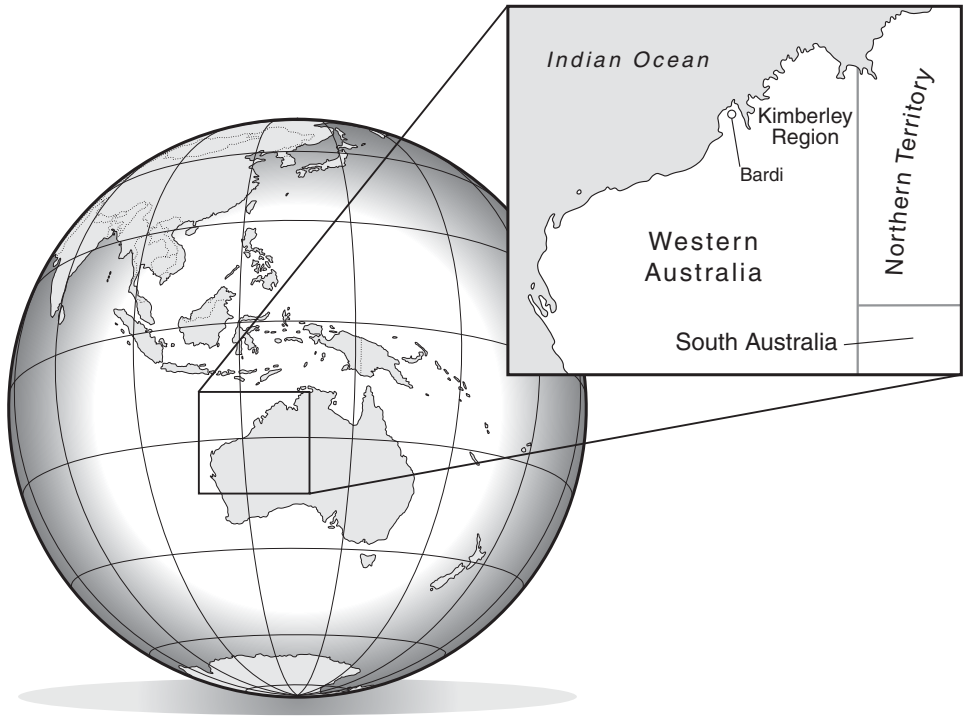


Figure LP8.1 Map of the region where Bardi is spoken

TEXTBOX LP8.1 **WHAT SHOULD WE CALL THE FIRST PEOPLES OF AUSTRALIA?**

There are several terms used to describe Australia's First Peoples. The term "native" is offensive in Australia, and "First Nation" is not used. The most widely used terms are "Aboriginal" and "Torres Strait Islander" or "Indigenous." However, some people don't like the term "Indigenous," because they feel it has been imposed on them by Europeans, and that it serves to remove Aboriginal people from public discourse.

8.2 Basic Typological Overview

8.2.1 Phonetics and Phonology

The Bardi phonemic inventory has seventeen consonants and seven vowels. As in roughly half of Australian languages, Bardi has five places of articulation for stops and nasals. These include a set of **retroflex** consonants, as well bilabial, dental, palatal, and velar ones. Bardi also has a distinction between two types of r-sounds, a feature which is common in Australian languages. For example, *ara* (with an approximant, somewhat like English [ɹ]) means 'other,' but *arra* (with a trill [r]), means 'no' or 'don't.' There are also three different laterals: retroflex /ɭ/, palatal /ʎ/, and alveolar /l/. There is no phonemic voicing contrast in consonants. Bardi distinguishes between long and short vowels.

8.2.2 Argument Marking on the Verb

Bardi has extensive morphological marking of grammatical relations, found in both verb agreement and case-marking. Within the verb, the subject, object (if there is one), oblique argument (e.g., benefactive), and possessor are all indexed morphologically. The subject argument is indicated by a prefix, while other NPs (as well as some types of adjuncts) are indicated by **clitics**, which follow the verb root and tense marking. Example (1) has a third-person prefix *i-* which indexes the subject argument *Jibaji*.

SIDEBAR LP8.3
For more on clitics, see the Manange Language Profile, Textbox LP3.5.

Sound file for (1)

(1) *Jibaji* *aarl-on* ***i****-na-ng-gala-na-na*
Jibaji fish-LOC 3-TR-PST-wander-CONT.REM.PST
'Jibaji was fishing.'

This example also shows that tense can be marked in two places in the Bardi verb. Here it is marked both by the prefix *ng-*, which indicates past tense, and again by the suffix *-na*, which indicates that the action of the verb occurred a while ago, hence in the remote past rather than the recent or immediate past. The other suffix *-na* marks the action as continuous. This is a type of **aspect**, a grammatical category independent of tense that indicates, for example, whether an event is continuous, completed, or habitual. Since Example (1) has both the past and the continuous, the verb translates into English as 'was fishing.' Also of note here is the prefix *na-*, which explicitly marks the verb root as being transitive (we'll come back to this below).

SIDEBAR LP8.4
For this discussion of argument marking on the verb, it might be helpful to review Section 6.3, on arguments, transitivity, and grammatical relations.

SIDEBAR LP8.5
For more on aspect, see the Manange Language Profile, Textbox LP3.8.

Example (2) illustrates a clitic on the verb that indicates that the indirect object is first-person plural (i.e., 'us').

Sound file for (2)

(2) *Way* *i-n-nya-na=****jard*** *oola* *janjali* *nyalab.*
come.toward 3-TR-catch-REM.PST=1PL.IO rain cyclone this.way
'A cyclone came toward us.' (Bessie Ejai: janjal.wav)

This example contains two other interesting features of Bardi. First, it contains a **complex predicate**, two or more words that act as a single predicate of a single clause, with one set of arguments. Each word in a complex predicate contributes to the overall meaning. In (2) the sequence *way innyanajard* is a complex predicate constructed of the preverb *way* and the verb *innya-najard*; these structures will be discussed in more detail below. Secondly, this clause illustrates a type of classification that is quite common in Australia. A general noun (in this case, *oola* '(fresh) water, rain') is juxtaposed with a more specific item (*janjali* 'cyclone').

The verb in Example (3) carries both a prefix *nga-*, indicating a first-person singular subject, and the clitic *=rri*, which marks the second-person singular object.

(3) *Ngay-**nim*** *loorrboo* ***nga**-n-k-i-ya=rri.*
1SG-ERG ignore 1SG-TR-FUT-do-FUT=2SG.P
'I won't listen to you.'

Sound file for (3)

This is also a good example of double future-tense marking; the verb *ngankiyarri* has both a future-tense prefix *k-* and a future-tense suffix *-(y)a*. Just as in Example (1), this verb has a prefix (here *n-*) that marks it as being transitive.

Finally, Example (4) shows oblique agreement in addition to the marking of subject and direct object. The verb has the third-person-singular subject marker *i-*, the object marker *=irr* (which is coreferential with *aarli* 'fish'), and the oblique clitic *=jin*, which could indicate either a possessor argument (i.e., his fish), or a beneficiary (i.e., cooked a fish for him).

(4) *Ginyinggon* *i-na-marra-na-n=jin=irr* *aarli.*
then 3-TR-cook-CONT-REM.PST=3SG.OBL=3PL.P fish
'Then he cooked his fish/then he cooked the fish for him.'

Sound file for (4)

The examples in (1)–(4) give you a lot of information about how Bardi works. We can see that the marking of grammatical relations on the verb is a salient element of Bardi morphology. We have also seen that Bardi grammar has extensive marking of tense and aspect, as well as complex predicates.

8.2.3 Case-Marking

Another important feature of Bardi is case-marking. It has quite a few different cases, including ergative (illustrated in (3) above) and absolutive on core arguments (these will be discussed more fully below), but also locative (roughly 'at'), allative ('to'), ablative ('from'), semblative ('like'), comitative ('with'), and a few others. Many of these cases provide information about the location of an item, whether someone is going with someone else or using something as an instrument, or whether something looks like something else. Some of these grammatical cases are illustrated in the following examples. See Stop and Reflect 8.1

STOP AND REFLECT LP.8.1 **COMPARE CASE SYSTEMS ACROSS LANGUAGES**

In addition to Bardi, three other languages described in the Language Profiles have extensive systems of cases that mark location and direction: Finnish (LP4.3), Tsez (LP7.3), and Manambu (LP10.3.2) Choose one of these systems and compare it to Bardi. What cases do they have in common? How do they differ? Examine the system of a third language. Are there cases that are unique to each?

In (5), Bessie Ejai is describing how an animal was made in the shape of a house. She uses the semblative case to describe how something is similar to something else.

Sound file for (5) **(5)**

I-nga-rr-a-m *awoojoo-**marr*** *ni-mara* *ngirray-**marr***
3-PST-PL-TR-make house-SEMBL 3SG-chest hut-SEMBL

moorrooloo-ngarr *ni-many*
little-INTENSIFIER 3SG-throat

'They made the chest-part like a house, like a hut, and there's a little opening [a 'throat'].'

Sentence (6) has an example of the comitative case, which indicates a person or thing that accompanies someone or something else.

Sound file for (6) **(6)**

I-ng-arr-ala-n *aeroplane* *arr* *i-n-joo-na-na*
3-PST-PL-see-REM.PST plane come 3-TR-do-CONT-REM.PST

nyalab *goonkoordoo-**nyarr*** *gala.*
this.way smoke-COM COMPL

'They saw the plane coming toward them with smoke [coming from the engines].'

Example (7) has a locative case; here indicating that one thing is on another. This case can also be used for other spatial relationships (e.g., 'at,' 'in'; see Textbox LP8.2), combined with a spatial adverb (e.g., 'under,' 'above'), or used for certain types of motion.

Sound file for (7) **(7)**

Mooloo *boor* *i-n-jal=jin* *ara-nim* *oorany*
louse.PL look 3-TR-look=3SG.OBL other-ERG woman

ara *oorany* *n-alm-onon.*
other woman 3SG-head-LOC

'One woman was looking for lice on another woman's head.'

TEXTBOX LP8.2 **DESCRIBING SPACE**

Bardi case-marking can be combined with spatial adverbs to allow speakers to make more precise descriptions of space. For example, in (7) one could also say *garndi nalmonon* 'on top of the woman's head,' using *garndi* 'on top' in addition to the case-marking on *nalmonon*.

Sound file for (8) **(8)**

Joo-nim *jooroorr* *a-ni-wi=jirri.*
2SG-ERG sand 2.IMP-TR-poke=3PL.OBL

'You poke the sand.'

SIDEBAR LP8.6
For other examples of languages with ergative case-marking, see the Manange and Tsez Language Profiles (LP3 and LP7, respectively).

Examples (8) and (9) illustrate one of the cases that is used on core arguments: the ergative. (For further discussion of ergative **alignment**, see Textbox LP8.3.) In Bardi, ergative case-marking is consistently found on subject arguments of transitive clauses. In (8), an example appears on the second-person pronoun, the subject of the transitive verb *aniwijirri* 'you poke it,' while in (9) it is found on the noun phrase *aamba* 'man,' the subject of *injalajarrmoordoo* 'he is looking at us.'

(9) Sound file for (9)

Aamba-nim *i-n-jala=jarrmoordoo.*
man-ERG 3-TR-look.at=1PL.P
'A man's looking at us!'

The ergative case-marker can be also found in Examples (3) and (7) above, as well as in (10).

(10) Sound file for (10)

Ginyinggi-nim *baawa* *boor* *i-n-jala=jin* *bordog-on* *arrijin.*
3SG-ERG child look 3-TR-look=3SG.IO tree-LOC nothing
'This child was looking for his on the tree, but he didn't find it.'

You might notice something unusual in (10) concerning the placement of the case-marker. Many languages have case-marking that goes on every item in a noun phrase; examples are Russian and Latin. Other languages have case-marking which goes only on the final item in the phrase; Japanese and Turkish are languages like this. Bardi is different: in Bardi, the case-marker goes on only the first item in the phrase.

8.2.4 Constituent Order

In English and many other languages, as you've seen, the order of constituents is fixed in such a way as to indicate grammatical relations. Since English is an SVO language, with the subject argument consistently preceding the verb, which precedes the object, sentences like *The dog bit Dorothy* and *Dorothy bit the dog* have critically different meanings. Bardi constituent order is not fixed in this way; the order of constituents in a sentence is much more free than it is in more familiar languages (in fact, Bardi can also omit arguments much more than English can, so it is quite common to find Bardi sentences which only have verbs in them, and no nouns, pronouns, or adjectives). This does not mean that there is no information provided by the order of words in Bardi. The order of constituents in Bardi is used to structure information for the hearer. For example, the first item in the clause is the grammatical focus; it is the most important piece of information in the clause. Here "important" means something like 'what the speaker most wants the hearer to focus on' For example, answers to content questions appear in the first position in the clause. Similarly, the choice between using a full noun phrase or omitting it provides a way for the speaker and hearer to keep track of the participants in the discourse. (See Stop and Reflect 8.3.) Constituent order will be the focus of more extensive discussion below.

STOP AND REFLECT 8.2 **COMPARE TO ENGLISH**

Imagine a situation where your roommate ate the leftover pizza that you were going to have for lunch. You run into a friend on the way to class. Which would you be more likely to say:

a. *My roommate ate all my pizza!*

b. *All my pizza's been eaten by my roommate!*

Consider your answer in light of the discussion of focus and Bardi constituent order. What structure does English use for this discourse function?

TEXTBOX LP8.3 ERGATIVE-ABSOLUTIVE VERSUS NOMINATIVE-ACCUSATIVE ALIGNMENT

Grammatical phenomena such as agreement and case-marking can group arguments in different ways. Sometimes the single core argument of an intransitive verb (abbreviated as S) is treated in the same way as the more agentive core argument of a transitive or ditransitive verb (abbreviated as A), thus defining the subject grammatical relation. Bardi verb agreement is of this type. In the examples below, the verb takes the third-person prefix *i-* in agreement with the S argument in (a) and with the A argument in (b). An entirely different marker is used for the non-agentive core argument (abbreviated as P) in example (b).

a. *Boonyja* *aarli* ***i****-ng-arr-jimbi-na.*
all fish 3-PST-PL-die-REM.PST
S
'All the fish died.'

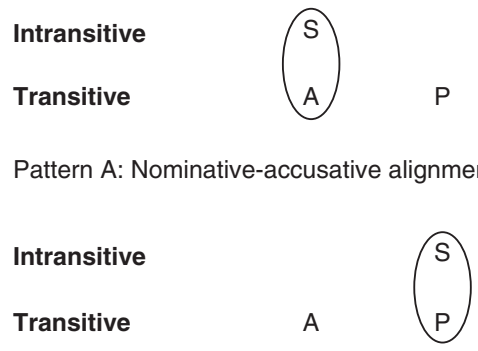
b. *Aamba-nim* ***i****-n-jala=jarrmoordoo.*
man-ERG 3-TR-look.at=1PL.P
A P
'A man's looking at us!'

However, case-marking in Bardi groups arguments in a different way. The A argument is singled out with a special marker (*-nim*, called the **ergative**), while both S and P arguments receive no marking. An unmarked S can be seen in example (a); an unmarked P can be seen in (c):

c. *Joo-****nim*** *jooroorr* *a-ni-wi=jirri.*
2SG-ERG sand 2.LMP-TR-poke-3PL.OBL
A P
'You poke the sand for them.'

When grammatical phenomena group S and P in this way, the category is called **absolutive**, which is a type of grammatical relation.

These different grammatical relations are called **alignment patterns** because the single intransitive argument sometimes aligns grammatically with the more-agentive transitive argument, and sometimes with the less-agentive transitive argument. These patterns are illustrated in the figure below.



Alignment patterns

8.2.5 Word Classes

Bardi has nouns and verbs, just like all other languages. There are both distributional and morphological reasons for distinguishing between nouns and verbs in this language. Nouns in Bardi can appear as the subjects of transitive sentences (where they take ergative case-marking and verbal agreement). That is, nouns can be arguments of verbs, but verbs can't be arguments of verbs. Nouns can be replaced by pronouns, such as *ginyinggi* 'he, she, it' or *irr* 'they'; however, no other word class can replace a verb. Bardi nouns take case-marking, while verbs take a lot of other, different morphology. Verbs are marked for tense and aspect, for the person and number of their subject (and object, if present), and for transitivity. Examples of nouns in Bardi include *oorany* 'woman,' *aarli* 'fish,' *liyan* 'heart, spirit,' *mayi* 'food,' and many others. Nouns form an open word class. Examples of verbs in Bardi include *-joogooloo-* 'break,' *-ni-* 'be, sit,' and *-booloo-* 'come.' Verbs in Bardi are not an open word class. There are about 250 of them in the language, but they are a closed set. Bardi

does not borrow inflecting verbs, and there are no word-formation processes that create new inflecting verbs out of other material.

Although Bardi verbs are a closed class, there is another word class, preverbs, which combine with verbs to provide verbal meanings (see Textbox LP8.4). Preverbs are an open word class in Bardi. They never appear on their own in a sentence; preverbs can be identified by the fact that they occur immediately before the (inflecting) verb, and they are the only type of word that can appear between the negative marker *arra* and the inflecting verb.

(11) Sound file for (11)

Arra	*booroo*	*oo-la-la-n-in*	*mara~mara.*
NEG	look	3.IRR-IRR-see-CONT-REM.PST	far

'He didn't look around very far.'

(11') **Booroo arra oo-la-la-n-in mara~mara.*

TEXTBOX LP8.4 **BORROWED VERBS AND BARDI PREVERBS**

Preverbs are the mechanism by which Bardi borrows verbs. A verb borrowed from English, Kriol, or another language becomes a preverb and occurs with an additional inflecting verb that carries the agreement, tense, aspect, and mood information. Here are some examples (the inflecting verb is given in its root form):

wajim -ma-	'wash'
loojim -joo-	'die' (from *lose'im*)
gadim -ma-	'cut'

All of these verbs have *-im* on the end of the loaned preverb. This is the Kriol transitivity marker; it attaches to all transitive verbs.

SIDEBAR LP8.7
For more on loanwords and processes of **borrowing**, see Section 13.2.

Bardi also has a class of adjectives. However, it is not a very clearly defined class, as Bardi adjectives share many properties with Bardi nouns, much more so than in languages like English. For example, like nouns, Bardi adjectives can be heads of noun phrases. Adjectives also have some behaviors that are not shared with nouns. Adjectives can be used as preverbs, where they have a systematic relationship with their inflecting verb. This is a very productive pattern for adjectives but does not occur with nouns. For example, consider the adjective *boordiji* 'big' in the following sentences:

(12) Sound file for (12)

Boordiji	*i-ni-n.*
big	3-sit-CONT

'it's big'

Boordiji	*i-n-ma-n.*
big	3-TR-make-CONT

'he/she/it made it big'

Boordiji	*i-n-joo-n.*
big	3-TR-do/say-CONT

'it got big'

These adjectives are functioning as preverbs. Evidence for this is that the adjective can occur between the negative marker *arra* and the verb:

(13) Sound file for (13)

Arra	*boordiji*	*oo-l-i-n.*
NEG	big	3-IRR-do/say-CONT

'it is not big'

Nouns cannot occur in these constructions; the sentence **arra iila oolin* – with *iila* 'dog' in the position of a preverb – is ungrammatical and cannot express the meaning 'it's not a dog.' Remember from the previous example that the order of elements in a negative verb phrase is *arra* + preverb + verb; the ungrammaticality of sentences like **arra iila oolin* is good evidence that nouns can't productively derive preverbs, but adjectives can. Thus, nouns and adjectives can be distinguished by their behavior in Bardi. Another property that distinguishes adjectives from nouns is that adjectives, but not nouns, can be modified by *giija* 'very'; so that you can say *boordiji giija* 'very big,' but not **iila giija* 'very dog.'

Bardi has only four numbers: 'one,' 'two,' 'three,' and 'four' (*arinyji, gooyarra, irrjar, and gooyarragooyarra*). For the most part, numbers behave like adjectives in their syntax, with a few exceptions: numbers take derivational morphology that other adjectives can't. For example, 'three' is *irrjar* and you can use a 'times' suffix, *-nan*, to say *irrjar-nan* 'three times,' but not **loogal-nan* 'bad times.'

(14) Sound file for (14)

Irrjar-nan	*i-n-jaybi-gal=jarrngay*	*"jan*	*i-n-joo-gal*	*jan*	*baawa?"*
three-times	3-TR-ask-REC.PST=1SG.P	where	3-TR-do-REC.PST	1SG.POSS	child

'Three times he asked, "where's my child?"'

Bardi has two conjunctions: *agal* 'and' and *gorror* 'or.' It doesn't have adpositions or articles. The functions of English prepositions, like *to, at*, and *beside*, are split between Bardi case-markers and adverbs. Bardi does not have a morpheme like the English article *the*, which indicates when a noun phrase is **definite** (identifiable). Instead, Bardi speakers use demonstratives like *jarri* 'this' and the presence or absence of a full noun to give information about the definiteness of the noun phrase. For example, if a noun is omitted in discourse, then it is usually identifiable, and known to the speaker and hearer. The first time something is mentioned, it is represented with a noun phrase, but in subsequent mentions, noun phrases are typically omitted and the argument is represented only by agreement marking.

SIDEBAR LP8.8
For more on **identifiability**, see Section 9.8.1. Also see Section 14.8.3 for more insight on why core arguments may sometimes be omitted from a clause.

Bardi has a class of personal pronouns with three singular and five non-singular members (see Textbox LP8.5 for discussion of the non-singular categories). The full set of personal pronouns is given in Table LP8.1.

Bardi pronouns have different behaviors from those in languages such as English. For example, the third-person pronouns can be used to modify nouns; in this use, they

function a bit like demonstratives, as in *ginyinggi aamba* 'that man' or *ginyinggi-nim baawa* 'that child' (in ergative form). They are not frequently used, since the functions of pronouns like English *he* and *you* are mostly taken up by Bardi verbal agreement marking, as seen in examples like (11) and (14).

TEXTBOX LP8.5 **CATEGORIES OF NON-SINGULAR PRONOUNS**

Table LP8.1 illustrates the fact that Bardi has more plural pronouns than singular pronouns. These extra forms are found in the first-person category, that is, references that include the speaker. There is a special first-person **dual** form, which refers to the speaker and hearer both (you (sg.) and I). The first-person-plural forms distinguish between references that include the hearer ('we all including you'), and references that exclude the hearer ('we but not you'). Such **inclusive** and **exclusive** distinctions are found in the pronoun systems in many languages.

Bardi has a number system that is described in the literature as an "Ilocano" or "minimal/augment" system. In languages with such systems, there is only one dual pronoun (the first-person dual inclusive *ayoo* in Bardi). There are no other dual pronouns; the first-person dual exclusive is signaled by *arroodoo*, which also marks plural exclusive.

TABLE LP8.1 Bardi pronouns

Person	Singular		Non-singular	
1st	*ngayoo*	'I'	*ayoo*	'we two (me and you)'
			arroodoo	'we all but not you'
			arridil	'we all including you'
2nd	*joo*	'you (singular)'	*goorr*	'you (plural)'
3rd	*ginyinggi*	'he, she, it'	*irr*	'they'

8.2.6 Constituency

One of the key diagnostics for word classes in many languages is the use and positioning of words in different types of phrases. For example, in English only prepositions can function as heads of prepositional phrases, and auxiliary verbs must precede verbs in a verb phrase. We also saw in Chapter 4 that constituency and morphological structure together provide the main evidence for different types of word classes. In the previous section, most of the evidence presented for Bardi word classes was morphological (e.g., verbs take agreement morphology while nouns take case-marking), although there was also some evidence regarding syntactic structure (e.g., preverbs occur between the negative particle and the verb, while nouns do not). Constituent order plays a somewhat limited role for identifying word classes in Bardi. This is because constituent order in this language is quite a bit more flexible than in some other more familiar languages, and this makes the use of constituent structure as a diagnostic for word classes a bit more subtle.

As an example, consider the following English sentence:

(15) *I ate two fish yesterday.*

One piece of evidence that *two* and *fish* are in the same phrasal constituent (here the object noun phrase) is that they cannot be separated by other elements of the sentence:

(16) **I two ate fish yesterday.*
**Two I ate fish yesterday.*

Here are two Bardi sentences, both equivalent in meaning to (15):

(17) Sound file for (17)

a. *Nga-n-arli-gal* *gooyarra* *aarli* *bardi.*
1SG-TR-eat-REC.PST two fish yesterday

b. *Gooyarra* *nga-n-arli-gal* *aarli* *bardi.*
two 1SG-TR-eat-REC.PST fish Yesterday

Both orderings are perfectly acceptable and used by speakers. In Bardi, it is grammatical to split numerals from their associated nouns; the two sentences (one with the numeral separate, the other with it adjacent) highlight different aspects of the situation. Example (17a) is the usual – or unmarked – way of expressing this situation, while (17b) implies that the number was different than expected, i.e., 'It was two!' (e.g., as opposed to three).

Does this mean that Bardi "has no grammar" or "has no evidence for phrasal constituency?" No, although it does mean we need to look beyond the obvious diagnostics for phrasal constituency and find Bardi-specific evidence that words combine into phrases.

The first piece of evidence for a noun-phrase constituent is that case-markers are suffixed to the first word of the noun phrase (as noted above; see, e.g., Example (10)). This tells us that nothing to the left of that word belongs in the phrase.

Second, nouns (and noun phrases, by implication) in Bardi have dependents, just as English noun phrases do. There are possessors, adjectives, and relative clauses. They obey the same restriction that the case-marker goes on the first word of the phrase.

(18) Sound file for (18)

[Ngay-<u>nim</u> *jan* *gooloo* *jina-rr* *irrmoorra]*
1SG-ERG 1SG.POSS father 3SG.POSS-3PL.POSSEE paternal.aunt

baanigarr *gorna* *balab* *i-ngi-rr-i-na-na.*
when good there 3-PST-PL-do-CONT-REM.PST
'My father's aunties were really happy about it then [that my father got back safely].'

In this sentence, the subject is the complex noun phrase *ngaynim jan gooloo jinarr irrmoorra* 'my father's aunties.' The ergative marker *-nim* goes on the first word of the phrase, the first-person singular pronoun *ngay*. (A standard way of marking possession in Bardi is to denote the possessor by a noun or pronoun followed by a possessive pronoun. So the complex noun phrase in (18) would be more literally translated as 'I my father his aunties.' The third-person possessive pronoun *jinarr* cross-references the person and number of both the possessor and the possessed.)

SIDEBAR LP8.9
GLOSSING NOTE
In designating a relationship of possession, POSS refers to the possessor, while POSSEE refers to the entity that is possessed.

A third type of evidence for a noun-phrase constituent is that we can replace a noun phrase with a pronoun. So in the previous example, we can replace *ngaynim jan gooloo jinarr irrmoorra* 'my father's aunties' with *irrnim* 3PL-ERG 'they (ergative).'

Noun-phrase elements don't have an absolutely fixed order, but they do have a set of strong tendencies. For example, noun heads tend to be final in their phrases. So, adjectives, possessors, locational phrases, and quality phrases (e.g., *the man with a beard*) all usually precede the noun.

8.2.7 Constituent Order in Discourse

Throughout this book, languages have been commonly described as having a dominant constituent order, such as SVO, SOV, VSO. Bardi word order is not easily described in this way. Consider Table LP8.2, which shows the numbers and percentages of different constituent orders occurring in two Bardi narratives.

There are many things to note from Table LP8.2. The first is that almost half the clauses in the Bardi narratives contain no free noun-phrase arguments at all (as indicated by the V-only examples in the last row before the totals), and only three clauses contained both a noun-phrase subject and a noun-phrase object (two VSO and one OVS). Second, there is a preference for the nominal argument to follow the verb, independently of whether it is an S-argument or an O-argument. Third, almost 10 percent of the clauses contain more than one verb with a common argument (VOV, VSV), or contain a discontinuous argument (OVO, SVS).

From the range of orders found in Bardi, one can conclude that Bardi constituent order does not signal the grammatical relations of the arguments. The following sentences describe the same event, but note that the constituent order varies.

(19) Sound file for (19)

[*Mooloo*]	*boor*	*i-n-jal=jin*	[*ara-nim*	*oorany*]
louse.PL	look	3-TR-look=3SG.OBL	other-ERG	woman
[*ara*	*oorany*]	*nalm-onon.*		
other	woman	3SG-head-LOC		

'One woman was looking for lice on another woman's head.'

(20) Sound file for (20)

[*Mooloo*]	*boor*	*i-n-jal=jin*	[*ara*	*oorany*]
louse.PL	look	3-TR-look=3SG.OBL	other	woman
[*ara-nim*	*oorany*]	*nalm-onon.*		
other-ERG	woman	3SG-head-LOC		

'One woman was looking for lice on another woman's head.'

So, if word order doesn't tell us anything about grammatical relations between arguments and verbs, how do we get that information? It is communicated by a combination of three things: case-marking, verb agreement, and real-world knowledge. You've already seen a few examples of verb agreement in action, where subjects have person and number morphemes, and objects have person/number clitics. You've also seen some examples of ergative case-marking, e.g., (8), (9), and elsewhere.

TABLE LP8.2 Constituent orders occurring in two Bardi narratives (Bowern 2008)

Order	Number	Percentage
SVO	0	0%
SOV	0	0%
OVS	1	0.6%
OSV	0	0%
VOS	0	0%
VSO	2	1.2%
SV	13	7.6%
VS	22	12.9%
OV	10	5.8%
VO	26	15.2%
OVO	10	5.8%
VOV	4	2.3%
SVS	1	0.6%
VSV	1	0.6%
V	81	47.4%
Total:	171	100%

CHAPTER SUMMARY

This language profile has explored a number of typological features of Bardi, such as the presence of retroflex consonants, an extensive system of local cases, a class of adjectives that is similar to nouns, and a distinct lexical class of preverbs. Bardi also exhibits an interesting pattern whereby we find subject marking on the verb, but ergative-absolutive alignment of case-markers on noun phrases. We've also seen that there is evidence for word classes and constituency in Bardi, although the tests are a little more complex than in languages with rigid constituent order. Constituent order does not provide information about the grammatical roles of arguments in the clause. It does, however, provide us with discourse information about the relative prominence and importance of participants in the sentence.

TEXTBOX LP8.6 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE

Convention	Meaning	Convention	Meaning
1	first person	LOC	locative
2	second person	NEG	negation
3	third person	OBL	oblique
COM	comitative	P	patient
COMPL	completive	PL	plural
CONT	continuous	POSS	possessive
COP	copula	POSSEE	possessed
ERG	ergative	PST	past tense
FUT	future tense	REC.PST	recent past
IMP	imperative	REM.PST	remote past
INTENSIFIER	intensifier	SEMBL	semblative
IO	indirect object	SG	singular
IRR	irrealis	TR	transitive

SUGGESTIONS FOR FURTHER READING

Aklif, **Gedda**. 1999. *Ardiyooloon Bardi Ngaank: One Arm Point Bardi dictionary*. Halls Creek: Kimberley Language Resource Centre.

The first and only published dictionary of Bardi, with an English–Bardi finder list and maps of Bardi country.

Bowern, **Claire**. 2012. *A grammar of Bardi*. Berlin: Mouton.

A reference grammar of Bardi that contains extensive information about Bardi phonology, morphology, and syntax.

McGregor, **William**. 2004. *The languages of the Kimberley*. London: Routledge.

This book gives a summary of languages of the Northwest of Australia. It is designed for students who are unfamiliar with Australian languages.

EXERCISES

1. Consider again the discussion of Bardi preverbs. In what ways are they similar to auxiliary verbs and in what ways are they different? Do you agree with the author that preverbs are not auxiliaries? You may want to review the discussion of auxiliary verbs in Chapter 5, Section 5.3, in formulating your answer.

2. Examine the following Bardi words (in IPA), along with their English translations:

ŋijambalə	'my foot'	*ŋimiŋgar*	'my shadow'
nijambalə	'his foot'	*nimiŋgar*	'his shadow'
irɟambalə	'their feet'	*irmiŋgar*	'their shadow'
gurɟambalə	'your feet'	*gurmiŋgar*	'your shadow'

a. What are the root morphemes in these words?
b. Which morpheme means 'my'?
c. Do any of the morphemes alternate? If so, which one(s), and what is the environment for alternation?
d. If *ɟəlaŋgun* means 'elbow,' how would you say 'his elbow'?

3. Put the ergative case on the correct Bardi word. In each of the following Bardi sentences, one of the words is missing the ergative case. Use the interlinear glosses and the free translations to figure out which word should be marked.

a. *Liinygoorr* *i-n-arli-gal* *jan* *iila.*
crocodile 3SG-TR-eat-REC.PST 1SG.POSS dog
'A crocodile ate my dog.'

b. *Gaanyji* *i-n-arli-gal* *jan* *iila.*
bone 3SG-TR-eat-REC.PST 1SG.POSS dog
'My dog ate a bone.'

c. *Jiidi-nyarr* *aamba* *nyoongoorl* *oorany* *i-n-jala-na.*
beard-COM man old woman 3SG-TR-see-REM.PST
'The old woman saw a man with a beard.'

4. Causal ergatives
The suffix *-nim*, in addition to marking ergative case, also appears in special sentences to mark an argument that is a semantic cause. It is attached to the noun that denotes the cause, as in:

Aalga-nim *nga-nga-marra.*
sun-ERG 1SG-PST-burn
'I am burnt.' (lit. I burnt because of the sun.)

Note that the verb does not agree with this argument, but instead agrees with the semantic patient. A set of verbs in Bardi use this frame (ergative-marked CAUSE; patient as a subject of the verb). Here are two more examples:

a. *Iiga-nim* *alig* *nga-n-da-n.*
sickness-ERG hurt 1SG-TR-do-CONT
'I'm sick.'

b. *Banyjoordoo-nim* *boonyja* *aarli* *i-nga-rr-jimbi-na.*
fish.poison-ERG all fish 3-PST-PL-die-REM.PST
'All the fish died from the fish poison.'

Is it best to analyze these examples as transitive or intransitive? Provide an analysis that:

i. specifies whether these clauses are intransitive or transitive;
ii. specifies arguments as either core or oblique;
iii. explains the agreement and case-marking facts.

LANGUAGE PROFILE 9

Lowland Chontal

9.1 Ethnographic Profile

Oaxaca Chontal (wah-HA-kah chone-TAL) is a small, genetically unclassified language family of southern Mexico. There are two surviving varieties: Highland Chontal, in the Sierra Madre del Sur mountains, and Lowland Chontal, along the Pacific coast. A third sister language died out in the past century. These are the mother tongues of the Chontalpa, a region in the Mexican state of Oaxaca.

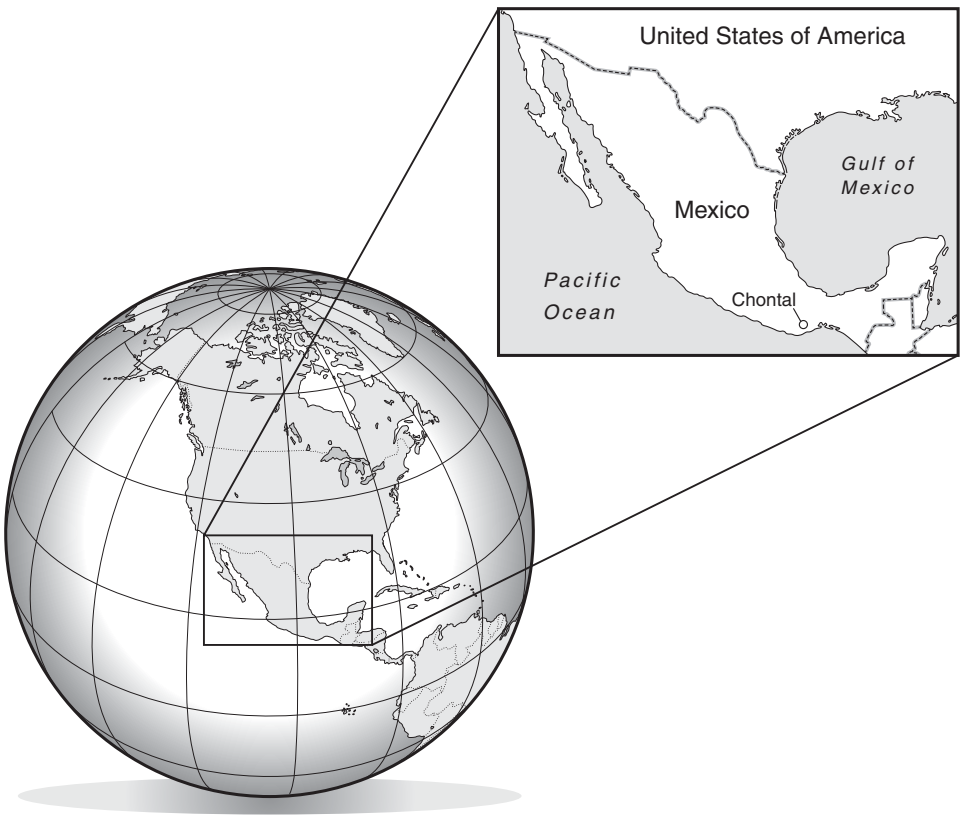


Figure LP9.1 Region where Chontal is spoken

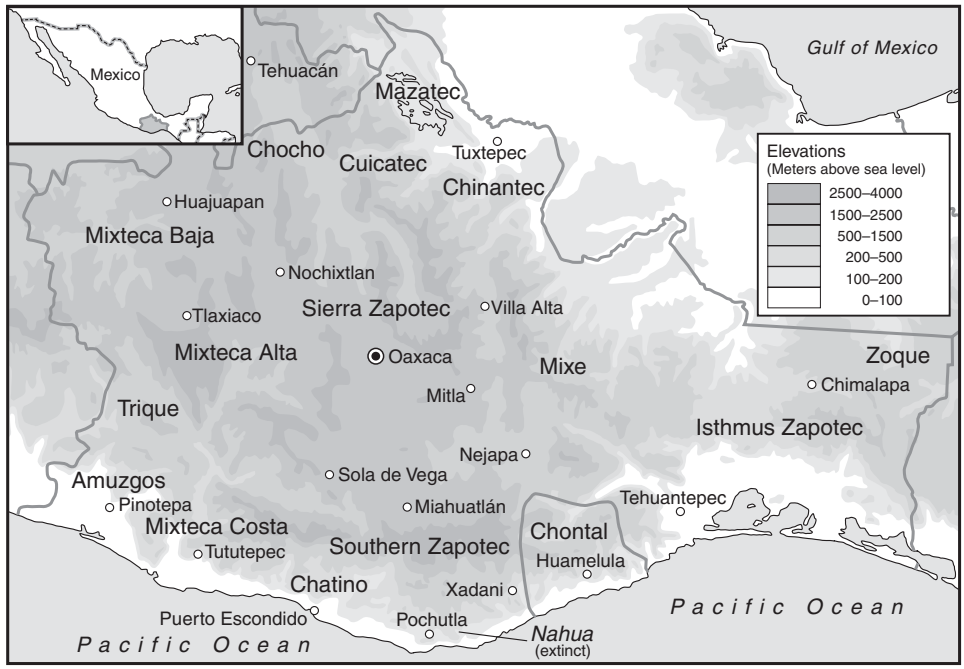


Figure LP9.2 Map of ethnolinguistic families in Oaxaca, Mexico (P. Kroefges)

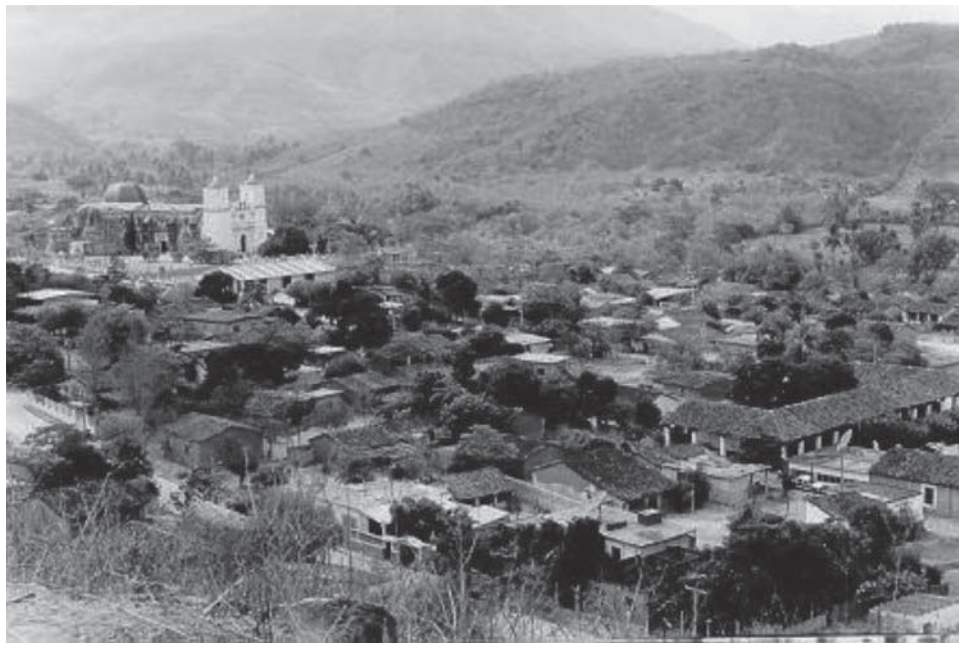


Figure LP9.3 View from a hilltop of San Pedro Huamelula, Oaxaca, Mexico

TEXTBOX LP9.1 **WHAT'S IN A NAME?**

The ethnic designation "Chontal" derives from a word in the Nahuatl language, *chontalli* 'stranger,' used by the Aztecs to refer to any unfamiliar ethnic group in ancient Meso-America. As a result, there are or were a number of groups, speaking unrelated languages, all called Chontal. Within Mexico, these are distinguished by naming the state where the people live today. Chontal of Tabasco is a Mayan language still spoken in Tabasco, while Chontal of Guerrero is no longer spoken by ethnic Chontal people in Guerrero. Although there are "Chontal people" in all three states, we have no reason to think they were once a single community.

In the Chontalpa of Oaxaca, people refer to themselves as Chontales and call their language *latyaygi*, 'the word.'

In Spanish, many people refer to the language as *el dialecto*, 'the dialect,' a term which can carry a pejorative sense. At first, many people I met in Mexico responded with patient amusement to my insistent corrections that Chontal is a language and not a dialect. I unintentionally convinced even the most skeptical by sending people postcards from the United States written in Chontal. Friends reported that this simple act was greeted with amazement and the realization that Chontal is a real language.

SIDEBAR LP9.1
The online resources for this language profile include a module with an introduction to the "Faces and Places" of the Chontal region and people, a module on glottalized sounds, with audio files, and a video of a midwife telling a story about the first time she delivered a baby, with a bio of the speaker, and with Chontal transcription and English translation.

No one knows exactly where Chontal speakers came from. (Textbox LP9.1, which discusses the language name, explains in part why this is so.) Our best estimates indicate they arrived in Oaxaca sometime between 300 and 1000 AD. Recent figures from the National Commission for the Development of Indigenous Communities (CNDPI) indicate there are some 2,700 speakers of Oaxaca Chontal in the region.

The language described in this profile is Lowland Chontal. It is a highly endangered language, with perhaps a hundred fluent first-language speakers who are quite elderly, and a much larger number of semi-speakers, aged fifty and above. No children learn Chontal as a first language and very few have access to any type of bilingual education. The highland and lowland varieties of Chontal are not mutually intelligible. There is relatively little contact between speakers of the two varieties, due in part to social prejudice and in part to the fact that the two groups are no longer major markets for each other.

9.2 Typological Profile

9.2.1 Morphological Type

Chontal is a predominantly **synthetic** language in that derivational and inflectional morphemes bind to roots to form single words. The morphology is **agglutinative**, and most words are easily analyzable into recognizable morphemes, which include roots, affixes, and **clitics**. Nominal morphology is mostly prefixing, and verbal morphology is mostly suffixing.

SIDEBAR LP9.2
To refresh your memory of the terms synthetic and agglutinative, see Section 4.8 or the Glossary (at the back of the book or online).

For example, the noun phrase 'my little burro' in (1) is a single word in Chontal, with four prefixes before the noun root: a

determiner, analogous to 'a' or 'the' in English, a possessive prefix, a linker morpheme, and a diminutive.

(1) *l-ay-ñe-'wa-buru*
DET-1SG.POSS-LINKER-DIM-burro
'My little burro.'

The only obligatory affix on a Chontal verb is an inflectional suffix that describes the verb action in such terms as perfective (complete), imperfective (incomplete), durative (ongoing or habitual), or imperative (as a command). There are ten categories of verbal inflection in Chontal. Suffixes have different shapes for singular versus plural subject, and the durative suffix takes different forms according to the verb root. With the stem *sago-*'eat,' the suffixes for a singular subject are *-pa* 'perfective,' '*ma* 'imperfective,' and *-duy* 'durative,' as in (2).

(2)	*sago-* 'eat'	*sagopa*	'ate'	completed action
		sago'ma	'eats'	incomplete action
		sagoduy	'eating'	ongoing or habitual action

There are fourteen optional derivational suffixes that occur between the verb root and the inflectional morphology. These include suffixes that signal the presence or absence of certain participants and suffixes that describe qualities of the verb action, such as repeated, distributed, or intensive. The clause 'we heard it again' can be expressed as a single word in Chontal, as in (3).

(3) *tay-ko-kom-pa=yang*
hear-APPL-ITR-PFV=1PL.A
'We heard it again.'

SIDEBAR LP9.3
For more on clitics, see the Manange Language Profile, Textbox LP3.5.

The applicative suffix indexes the 'it' that we heard; the iterative suffix indicates that the hearing was repeated, and the perfective suffix tells us the hearing was completed. The final linguistic element in (3), marking the subject person 'we,' is a clitic. There are many clitics in Chontal; these attach to nouns, verbs, and very often to other clitics. Morpheme boundaries for clitics are marked with an equal sign rather than a hyphen.

9.2.2 Syntactic Type

Chontal is a verb-initial language with variable constituent order. Most sentences in conversation and narrative begin with the verb. If subjects (S) and objects (O) are mentioned, these follow the verb, and usually the subject precedes the object. Example (4) has two clauses, in VSO and VS order.

(4)	**V**	**S**	**O**	**V**	**S**
	'oy'mi-'me'	*sayang*	*lam-buru'*	*may-gom-'me'*	*sayang*
	pack-IPFV.PL	1PL.A	DET.PL-burro	go-ITR-IPFV.PL	1PL.A

'We would pack the burros and get on the road again.'

However, VSO and VS word orders are not obligatory. Any subject or object can precede the verb if a speaker wants to highlight a certain participant. See how the speaker plays with the focus in the excerpt in (5). The deer and the child are introduced in (a), then the child is highlighted and the deer is not mentioned in (b), and the conclusion of the action is described using the basic VS word order in (c).

(5) **a.**

		S		V	
ñulyi	*el*	*venado*	*joypa*	*ñulye-pa*	*pero*
one	DET	deer	already	run-PFV.SG	but

S	V
l-a-'wa	*jolaf'-a*
DET-NOM-child	sitting.above-STAT.SG

'A deer ran with the child on its head (sitting above).'

b.

O			V
l-a-'wa-mulyi	*joypa*	*chasa*	*tye-'e-pa*
DET-NOM-DIM-boy	already	now	fall-CAUS-PFV.SG

'Now it (the deer) dropped the little boy.'

c.

	V	S
joypa	*tye-pa*	*l-a-'wa-mulyi*
already	fall-PFV.SG	DET-NOM-DIM-boy

'And the little boy fell.'

A final important feature of Chontal morphosyntax is the case-marking system. In this language, subjects and objects are marked according to semantics of **agentivity**. To be "agentive" is to act with control and intention; to be "non-agentive" is to experience something beyond your control or intention. The relevant semantic case roles are those of AGENT and PATIENT, and in every clause, core participants are marked as agentive (A) or patientive (P), according to the perceived level of control or intention of the participant over the event encoded by the verb.

SIDEBAR LP9.4
For the discussion of **semantic case roles**, like AGENT and PATIENT, see Section 6.3.5.

This is easiest to illustrate with transitive and ditransitive clauses that involve multiple participants. In (6) and (7), note how the person markers change in the two clauses, as I (A) eat you (P), or you (A) give me (P) some bread.

(6) *iya'* *te-'m-o'*
1SG.A eat-IPFV-2SG.P
'I'm going to eat you.'

(7) *jl-pay-pa=yma'* *l-ay-'i*
1SG.P-give-PFV=2SG.A DET-1SG.POSS-bread
'You gave me bread.'

We see the same types of differences with plural first- and second-person participants in (8) and (9). We (A) see you (P), and you (A) say something to us (P).

(8) *sim-p-olwa'* *sa=yang*
see-PFV-2PL.P DM=1PL.A
'We saw you.'

(9) *mi-p-onga'* *sa=ymang*
tell-PFV-1PL.P DM=2PL.A
'You told us.'

The semantic differences are fairly transparent in multi-participant events, as one can judge the relative agentivity of each participant with respect to the others. In each clause above, one participant (the grammatical subject) was more agentive, marked as A, and another participant (the grammatical direct or indirect object) was less agentive, and marked as P. The complete paradigm of agent–patient morphology is shown in Table LP9.1, with allomorphs in parentheses. Markers in the A column can occur as independent pronouns or as clitics, and these clitics can attach to verbs or to other clitics. Markers in the P column are strictly verbal affixes.

The lack of person markers for third persons, represented by zeroes in Table LP9.1, has certain consequences. Look back at the excerpt in Example (5), and notice that none of the verbs carries person-marking morphology. When all the participants are third-person singular, the distinction between agents and patients is not expressed. We say the agent–patient distinction is **neutralized** for this grammatical person/number. The distinction is not neutralized for third-person plural, as shown in (10), with two clauses about burros. The verb in (a) shows only that the subject is plural, seen in the infix *-jl-* and the plural form of the imperfective suffix *-'me'*, while the verb in (b) explicitly indicates that the subject is both third-person plural and non-agentive, with the suffix *-ilya'*.

(10) **a.** *tyijpe* *sa* *ñaño-jl-'me'* *lam-buru*
DIST DM PASS-PL-IPFV.PL DET.PL-burro
'There the burros would pass through,'

b. *pero* *paychu-g-ilya'* *chasa* *lam-buru*
but BE.AFRAID-DUR-3PL.P now DET.PL-burro
'but now they were afraid.'

TABLE LP9.1 Agent–patient morphology in Chontal

Person	A	P
1SG	*iya' (=ya')*	*jl-*
2SG	*ima (=yma')*	*-o'*
3SG	Ø	Ø
1PL	*iyank' (=yang)*	*-onga' (-inga')*
2PL	*imank' (=ymang)*	*-olwa' (-ilwa')*
3PL	Ø	*-ola' (-ilya')*

Notice something unusual about Example (10): both clauses are intransitive, with just one participant, yet the verbal person-marking morphology is different. This is a key feature of the agentive system in Chontal: the single participant of an intransitive clause will be marked as an agent or a patient according to the perceived level of control or intention of the participant over the event encoded by the verb. In Examples (11)–(14), all the events in (a) are controlled by the participants, while all the events in (b) are not.

(11) **a.** *kas-pa=ya'*
stand-PFV=1SG.A
'I stood up.'

b. *jl-ma-'ma*
1SG.P-die-IPFV.SG
'I will die.'

(12) **a.** *may-pa=yma'*
go-PFV=2SG.A
'You went.'

b. *te-p-o'*
fall-PFV-2SG.P
'You fell'

(13) **a.** *sago-pa=yang*
eat-PFV=1PL.A
'We ate.'

b. *paychu-p-onga'*
be.afraid-PFV-1PL.P
'We were afraid, we became afraid.'

(14) **a.** *soy-pa=ymang*
dance-PFV=2 PL.A
'You danced.'

b. *'i-'m-olwa'* *alegre*
become-IPFV-2PL.P happy
'You will be happy.'

STOP AND REFLECT LP9.1 **AGENTIVE AND NON-AGENTIVE PREDICATES**

Look at the following list of intransitive predicates. For each one, decide how you would classify its subject: as agentive or non-agentive. Is it always clear or are there ambiguous cases? What semantic classes do the predicates fall into?

walk, dream, slip, fall asleep, shave, stand, collapse, fly, cough, go to bed, vomit, sweat, be tired, awaken, be hot, be sad, swim, grow, dress, be grateful, be careful, jump, turn around, sneeze, trip, tremble, bloom

9.2.3 Phonological Type

The sound system of Chontal is composed of five vowels and thirty-three consonants. The vowel inventory is quite simple, with five distinct phonemes *a, e, i, o, u*. **Vowel length** is not phonemic, but it occurs in certain words, especially in **penultimate** stressed syllables. These longer sounds are written with two vowels. There is one diphthong /ai/, written {ay}.

The consonant inventory is more complex, characterized by series of plain and glottalized segments. In the practical orthography used here, the apostrophe represents both a glottal stop and **glottalization**: *k', ts', ch', f', s', x', jl'* are glottalized obstruents, and *'m, 'n, 'ñ, 'l, 'w* are glottalized sonorants. The letter *j* represents both velar and glottal voiceless fricatives (i.e., [x] and [h] in the IPA), following a common orthographic practice from Spanish, and the letter *x* represents a postalveolar voiceless fricative. Dialectal variants of the lateral fricative segments *jl, jl'* are written *tl, tl'*. Another prominent feature of Chontal phonology is palatalization; see Textbox LP9.2.

Module on Plain and Glottalized Consonants with sound files

Figure LP9.4 Women on their way to a town dance

TEXTBOX LP9.2 **PALATALIZATION**

Most speakers of Lowland Chontal palatalize alveolar segments before or after a high or front vowel /i, u/ or the palatal approximant /y/. See Example (a), with possessed forms of the body part *anepo'* 'back,' and notice how the vowel of the possessive prefix determines the shape of the determiner and the first consonant of the root.

a. *l-o-nepo'*
DET-2SG.POSS-back
'your back'

ly-i-ñepo'
DET-3SG.POSS-back
'his/her back'

l-ay-ñepo'
DET-1SG.POSS-back
'my back'

Furthermore, when a verb root begins with an alveolar consonant, that initial alveolar is palatalized in third-person inflections, singular and plural. This process creates alternations *l~ly, n~ñ, s~x, ts~ch*, and *t~ty*, as in (b).

b. *toj'me-duy=ya'*
speak-DUR.SG=1SG.A
'I'm speaking'

tyoj'me-duy
speak-DUR.SG
'he/she is speaking'

The result is rampant palatalization, which is mostly predictable, although it should be noted that some speakers seem to palatalize alveolars in all words, regardless of phonetic environment.

9.3 Compound-Stem Predicates

Chontal has a special complex verb construction called a compound-stem predicate. These compound stems have one inflectional suffix and one set of core participants, and they can predicate single- and multi-participant events.

All compound-stem predicates encode change: change of location, change of position, or change of state. When we talk about change, we talk about figures and grounds, terms adapted from psychology. A **figure** is an entity that changes with respect to a **ground**, a reference point or reference situation. In linguistics, the semantic case roles corresponding to figures include *actor, patient, experiencer*, and *theme*. The semantic roles corresponding to a ground include *source* and *goal*.

Compound stems consist of two types of verbal elements, each making an individual contribution to the meaning of the construction. The basic template is as follows; VE stands for "verbal element":

VE1 – VE2 – (DERIVATION) – INFLECTION

Each type of element will be introduced separately, and then we will look at some examples of elements in combination, as compound stems. The initial verbal element, here called **VE1**, specifies one of the following:

- Something about the figure
  - its size, shape, type, position, or configuration
- Something about the type of goal
- Something about the change event itself
  - the process or cause that leads to change, or
  - the shape of the path taken by the figure in motion

These VE1 verbal elements fall into four semantic classes.

I. A "classificatory" VE1 identifies the shape, size, or identity of the figure as:

ch'u-	'grain (especially corn)'	*k'e-*	'liquid (especially water)'
le-	'animate' or 'long and thin'	*pe-*	'small'
soy-	'shallow plate'	*wa-*	'container'

The last morpheme in this list, *wa-* 'container,' can refer to the figure, such as a glass or a plate that is moved, or it can also refer to the goal, as 'into a container.'

II. A "dispositional" VE1 identifies the posture, spatial disposition, or configuration of the figure with respect to the ground, as, for example:

jojl/jol/jola-	'sit, sitting'	*kas-*	'stand, standing'
ñaj-	'lie, lying'	*kuch'-*	'huddle, huddled over'
ño-	'cross, crosswise'	*k'o-*	'mouth (mouth-ward)'
spe-	'spread, scattered'	*sk'ing-*	'items in a circle'

III. A "means" VE1 describes something about the manner of how the change takes place. This is a large category that includes:

cho-	'spill'	*te-*	'fall'	*sk'wi-*	'stab'
fa-	'plant'	*fuj-*	'blow'	*jas-*	'split, slice, tear'
jlay-	'bend, break'	*jli-*	'slide, slip'	*jlo-*	'scoot'
kej-	'cut, chop'	*k'wa-*	'insert'	*pes-*	'force'

IV. A "trajectory" VE1 depicts the specific shape of the path taken by the figure in motion:

'oy- 'flat arc' *s'wi-* 'arc back' *spa-* 'high arc'
ki- 'straight, horizontal' *go-* 'back and forth'

The second element, the **VE2**, specifies:

- the direction of motion;
- the endpoint of motion or position in space;
- the end-state of a change of state, as "apart, in two pieces."

-f'	'up'	*-ay*	'across'
-ayj	'down'	*-ñi*	'across'
-'mi	'in'	*-f'i*	'upon'
-gi, -ki	'out'	*-may*	'down in'
-k'oy	'inside'	*-way, -we*	'down on'

There are approximately a hundred VE1 elements and about a dozen VE2 elements. Not all combinations of VE1 and VE2 are allowed: there are about 175 compound-stem predicates attested in the current corpus. Speakers must learn that some meanings can combine but others cannot. For example, one can combine *jway-* 'jump' and *-ñi* 'across' into the compound stem *jwayñi-* 'jump across,' but we cannot make similar constructions to express 'run across,' 'swim across,' or 'dance across.' Without written records of the language, we have few clues as to the **diachronic** processes that produced compound stems. For now, we have to assume that these constructions reflect meaningful combinations that have been used more frequently and have somehow been more useful to speakers over time. Some of this "usefulness" is suggested in the description of compound-stem predicates exemplified in the sections below.

SIDEBAR LP9.5
For the definition of **diachrony**, see Section 12.2.1 or the Glossary (at the back of this book or online).

9.3.1 Means Predicates: Manner of Motion, Manner of Change

Details of how a change happens can be provided with a "means" construction, based on a means VE1. Examples (15) and (16) both talk about ways to put seed into the earth, with the same figure (the seeds), and the same goal (the earth). The difference between the two is the manner of moving the seeds. In (15), the farmer will broadcast (i.e., loosely throw) the seeds into the field, and the verb begins with *faj-* 'plant, sow.'

(15)

faj -'mi -'ma	*sa*	*layñega*
plant-in-IPFV.SG	DM	cornfield
VE1 VE2		

'He will sow the cornfield.'

In contrast, in (16), the motion is more controlled, as a few kernels of corn are carefully dropped into the prepared ground.

(16) *tye'-'mi-'ma* *sa* *fane* *la'wa-kosak'*
drop-in-IPFV.SG DM three little-corn
VE1 VE2
'He will trickle in three corn kernels (into the furrow).'

These 'planting' examples demonstrate different manners of motion. A means VE1 can also distinguish a particular type of state change, including the different qualities of the result of a stage change. The next three examples all describe ways to separate an object into more than one piece. The VE1 *jas-* 'tear, split' is used when the figure is cloth or paper.

(17) *jas-ñi-pa=yma'* *el* *je'e*
tear-across-PFV.SG=2SG.A DET paper
'You ripped the paper apart.'

The VE1 *ski-* means to 'split or divide something cleanly in two,' whether a piece of kindling or a crowd of people or, as in (18), a piece of fruit.

(18) *ski-ñi-pa=yma'* *el* *mangu*
split-across-PFV.SG=2SG.A DET mango
'You split the mango in two.'

And the VE1 *pay-* 'break, shatter' is used when the figure is hard or brittle and therefore likely to break into more than one piece.

(19) *pay-ni-pa=yma'* *la'i* *pedazo* *pedazo* *pedazo*
break-across-PFV.SG=2SG.A bread piece piece piece
'You broke apart the bread into pieces.'

STOP AND REFLECT LP9.2 **SEPARATING OBJECTS INTO PIECES**

Look at the structure of the English translations in Examples (17) through (19), then think of other situations where things are broken apart and how you would phrase them in English. In what part of the lexicon and the clause are such meanings expressed? How about in other languages that you are familiar with?

9.3.2 Classificatory Predicates: Referent Introduction and Tracking

Compound verbs can do more than just create new verbs with more detailed meaning. They can also be used in discourse to clarify the identity of **referents**. For example, in (20), the VE1 classificatory element indexes the size of the figure (the bag), clarifying that the speaker is referring to the small backpack, as opposed to another bag.

(20) *tyinchi* *maa=yma'* *p-ayj-pa* *l-o-bolsa*
why NEG=2SG.A small-down-PFV.SG DET-2SG.POSS-bag
'Why don't you take off your backpack?'

In (21), the VE1 classificatory element identifies the figure as a grain, likely corn or rice.

(21) *ch'uj-'mi-'ma=yma'* *ten* *sa=yma'* *majkoda*
grain-in-IPFV=2SG.A what DM=2SG.A cook
'You put in whatever grain you want to cook.'

In Example (22), from conversation, the VE1 classificatory element indicates to the addressee which item in the shared context should be picked up.

(22) *wa-f'-jla'* *jay*
container-up-IMP.SG female.friend
'Pick that up, girlfriend (a plate, a glass, a bowl, a basket).'

SIDEBAR LP9.6
For a discussion of **referent tracking** in discourse, see Textbox 9.3.

Argument omission or **ellipsis** is very common in Chontal, and the use of classificatory compound-stem predicates is a useful strategy for introducing referents, tracking referents in discourse, and maintaining a background participant in the discourse frame without using a noun phrase.

9.3.3 Dispositional Predicates: Spatial Precision and Referent Tracking

Dispositional predicates, with dispositional VE1s, can give rich detail about the spatial configuration of the figure after a change of position, as, for example, 'mouthward upon' (23) or 'sitting down in' (24).

(23) *k'o-ma-f'i-yuy* *iya'* *l-i-tapadera* *l-ay-k'ejwa'*
mouth-x-up.on-DUR.SG 1SG.A DET-3SG.POSS-lid DET-1SG.POSS-well
'I put/am putting a lid on my well.'

(24) *jojl-may-pa* *lapixu'* *maj-lixpantalek-'ej*
sitting-down.in-PFV.SG pot LOC-forked.branch-tree
'The pot was sitting in the crotch of the tree.'

SIDEBAR LP9.7
See Section 14.8.3 for more insight on the type of discourse context in which ellipsis occurs.

Other dispositional VE1s depict a more abstract arrangement of the figure. The element *sk'ing-* 'items in a circle' describes the placement of multiple figures into a circle, such as when dealing cards or doling out food, drink, or money. In (25), the speaker related how workers would come in from the fields and sit down around big bowls of food for the midday meal.

(25) *xago-'me'* *lakujlwe'*, *xk'ing-we-'me'* *lamats'*
eat-IPFV.PL man.PL items.in.circle-down.on-IPFV.PL earth
'The men are going to eat, so they sit in a circle on the ground.'

In addition, dispositional predicates play a minor role in referent tracking. Example (26) illustrates this function. There is no noun phrase that mentions the figure argument, the body of the deceased. Instead, the dispositional element *ñaj-* 'lying' tracks the figure as 'a lying thing' that is moved from the small mat used during a visitation into a casket for burial.

(26) *tyijpe* *sa* *ñaj-f'-'mi-pa'* *jaape* *li-kaja*
DIST DM lying-up-in-PFV.PL where 3SG.POSS-coffin
'There they picked him up and put him in his coffin.'

Figure LP9.5 Scene from a Chontal sugar cane parade

Example (26) also demonstrates that some compound stems combine two VE2 elements to depict an elaborated trajectory of motion, here, 'up' and then 'in.'

9.3.4 Trajectory Predicates: Elaborated Path of Motion

Only a few compound-stem predicates in my corpus depict an elaborated path of motion by stacking VE2 elements as a series of endpoints, as in (26). More commonly, a trajectory VE1 is used to describe different shapes of the trajectory of movement.

In (27), a figure is placed on top of a ground by moving it in a flat arc: here, a person places a saddle on the back of a burro.

(27) *'oy-f'i-'ma* *sa=ya'* *l-ay-buru*
flat.arc-up.on-IPFV.SG DM=1SG.A DET-1SG.POSS-burro
'I will saddle my burro.'

In (28), chili seedlings (the figure) are removed from a bucket, moving in a different type of arc up over the edge of the bucket, to be planted in a field.

(28) *xpa-gi-'ma* *sage=l* *kasi* *para* *sa* *fa-'ma*
high.arc-out-IPFV DM=DET chili to DM plant-IPFV
'He would transplant the chili to plant it.'

And finally, the trajectory element *ki-* depicts a path that projects in a straight line, as in (29).

(29) *joypa* *sa=yma'* *ki-ñi-pa* *el* *puente* *de* *Piña*
already DM=2SG.A straight-across-PFV DET bridge GEN Piña
'Now you've crossed the Piña bridge.'

This overview of compound-stem predicates in Lowland Chontal gives a taste of the complex meanings they convey. The same types of verb are found in Highland Chontal, although these have not been described. Intriguingly, the compound stem may provide a window into the prehistory of the Chontal people. This construction is not found in southern Mexico outside the Oaxaca Chontal family but is well attested in languages that are or were spoken in present-day Oregon, California, Arizona, and northwestern Mexico. A thorough comparison of compound stems in all of these languages may help us understand any areal or genetic connections between the languages and among the people who spoke them.

CHAPTER SUMMARY

This language profile has highlighted a number of interesting typological features of Lowland Chontal of Oaxaca, including extensive glottalization and palatalization, a synthetic, agglutinative morphology, flexibility in the ordering of syntactic constituents, and agent–patient participant marking. In addition, it has shown that compound-stem predicates in this marvelous language provide rich resources for encoding change, giving precise detail of spatial disposition, physical qualities of the figure, and the manner of change. The endangered status of the language and the difficulties of revitalization mean that the scope and nuance of the grammar of change in Chontal may disappear with the last fluent speakers. Documentation of endangered languages is vital to our understanding of the diversity of the human mind and the record of human history.

TEXTBOX LP9.3 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE

Convention	Meaning	Convention	Meaning
1	first person	IPFV	imperfective
2	second person	ITR	iterative
3	third person	LINKER	linking affix
A	agent	LOC	locative
APPL	applicative	NEG	negation
CAUS	causative	NOM	nominal
DET	determiner	P	patient of transitive
DIM	diminutive	PFV	perfective
DIST	distal	PL	plural
DLOC	dislocative	POSS	possessive
DM	discourse marker	SG	singular
DUR	durative	STAT	stative
IMP	imperative		

SUGGESTIONS FOR FURTHER READING

González, **Alicia Maria**. 2002. *The edge of enchantment: Sovereignty and ceremony in Huatulco, México*. washington, DC: National Museum of the American Indian, Smithsonian Institution. Distributed by Fulcrum Publishing.

A beautifully photographed ethnographic study with a somewhat dated social perspective.

Levinson, **Stephen C.**, and **David P. Wilkins**, (eds.). 2006. *Grammars of space: Explorations in cognitive diversity*. Cambridge University Press.

A cross-linguistic study of the incredible diversity in the semantic and formal resources languages use to encode spatial relationships and spatial change.

Mithun, **Marianne**. 1991. "Active/agentive case marking and its motivations." *Language* **67**.3: 510–546.

A study of active/agentive systems and how they develop.

Mithun, **Marianne**. 2007. "Grammar, contact and time." *Journal of Language Contact-THEMA* **1**: 144–167.

A cross-linguistic study that includes languages of the California linguistic area with compound-stem predicates comparable to those in Oaxaca Chontal.

O'Connor, **Loretta M.** 2007. *Motion, transfer, and transformation: The grammar of change in Lowland Chontal*. Amsterdam and Philadelphia: John Benjamins.

A grammar of Lowland Chontal that expands greatly on the agentive system and the many verbal constructions used to express change of location, position, and state in this language.

O'Connor, **Loretta M.** 2013. *Latyaygi–English–Español: A trilingual dictionary of Lowland Chontal of Oaxaca*. Interactive version on CD inside the back cover. LINCOM Europa.

The first and only published dictionary of Lowland Chontal of Oaxaca, with introductions, grammatical sketches, glossaries, definitions, and all text examples in English and Spanish.

EXERCISES

1. Agent–patient systems, sometimes called agentive or active–static systems, are found in languages all over the world. This grammatical system represents a type of "semantic alignment" because core participants are marked according to a semantic motivation.

Agentive languages and active–static languages differ with respect to what motivates the different types of marking. Agentive languages like Chontal tend to respond to semantic features of agentivity, understood as control, volition, or intention, while active–static languages tend to use one set of markers for events (active) and one set for states (static).

What these grammatical systems have in common is that, formally, they treat the single argument of intransitive verbs (S) sometimes like the subject of transitive verbs (A) and sometimes like the object (O) of transitive verbs. Therefore, we say that agentive and active systems treat some S arguments like A arguments and other S arguments like O arguments. (These are sometimes referred to informally as "Split-S" systems.)

A speaker of an agentive language like Chontal answers several questions in each description of change (e.g., Did the participant cause the change? Did he or she control it, or did it happen involuntarily? Was the change a surprise?). Some languages permit both types of marking on individual verbs, to encode differences such as *drinking* versus *getting drunk* and *falling asleep* versus *fainting*.

Consider each of the following pairs of sentences. In each case, the (a) member of the pair is in agentive form, while the (b) member of the pair is in patientive form. What is the likely difference in meaning or implication between each pair? Give an example of situations in which a speaker might use each one. Explain your reasoning.

1. **a.** *xuxkixpa=yma'*
be.late=2SG.A
'You took a long time, you're arriving late.'

b. *xuxkixp-o'*
be.late-2SG.P
'You took a long time, you're arriving late.'

2. **a.** *xyoo-day'* *'ñi*
laugh-DUR.PL(A) nothing.more
'They just laugh.'

b. *xyoo-go-p-ola'*
laugh-APPL-PFV-3PL.P
'They burst out laughing.'

3. **a.** *tyay-kay'* *la'way'*
understand-DUR.PL(A) children
'The children understand.'

b. *joypa* *tya-lay-t-olwa'*
already understand-PL-DLOC-2PL.P
'Now you understand.'

4. **a.** *iyang=sa* *styulye-pa'*
1PL.A=DM get.angry-PFV.PL
'We got angry.'

b. *iyang=sa* *paychuj-p-onga'*
1PL.A=DM be.afraid-PFV-1PL.P
'We got scared.'

(Note that a different lexical verb is used here. Explain why the S of *styulye-pa'* takes the agentive form, while that of *paychuj-p-onga'* takes the patientive form.)

5. **a.** *jak'-pa=ya'*
disappear-PFV.SG=1SG.A
'I disappeared.'

b. *jak'-p-ola'* *la'way'*
disappear-PFV-3PL.P children
'The children disappeared.'

2. Each of the following stems is composed of two parts: one initial verbal element (VE1) and one secondary verbal element (VE2). Identify the two verbal elements in each stem, noting that there are some allomorphs. Create a mini-glossary with a gloss for each VE1 or VE2 element, and indicate which of the four classes (i.e., classificatory, dispositional, means, or trajectory) each VE1 falls into.

a. *k'ejway-* 'form a puddle'
b. *k'ejmay-* 'be left over, like soup in the bottom of the pan'
c. *k'ejk'oy-* 'form a blister'
d. *k'ef'i-* 'water the flowers'
e. *k'aygi-* 'draw water from a well'
f. *k'ej'mi-* 'pour liquid'
g. *lef'-* 'pick up a child or a rifle'
h. *layj-* 'help an old lady out of a car'
I *legi-* 'pull a branch from the fire'
j. *leñi-* 'receive people in your home'
k. *pef'-* 'pick up a ball, rock, spoon, or envelope'
l *payj-* 'take off your backpack'
m. *pef'i-* 'set an egg on the shelf'
n. *pej'mi-* 'jump into the water (usually refers to a child)'

o. *pek'oy-* 'stick your hand between the rocks'
p. *peñi-* 'send a letter in the mail'
q. *pay-* 'give someone a loaf of bread'
r. *spaf'-* 'whip, spank'
s. *spaf'i-* 'pull apart the outer leaves on an ear of corn (without removing them)'
t. *spagi-* 'transplant tomato plants from your bucket into the field'
u. *spak'oy-* 'lock the door with a wedged branch'
v. *spañi-* 'shuck corn completely'

LANGUAGE PROFILE 10

Manambu

10.1 Introduction

The island of New Guinea is probably the most linguistically diverse and complex area in the world, with over 1,000 languages spoken in an area of 900,000 square kilometers. About 300 to 400 languages belong to the Austronesian language family. Other, non-Austronesian, languages are called "Papuan" (Foley 1986: 1; Aikhenvald and Stebbins 2007). This rough denomination covers over sixty linguistic families and a fair number of linguistic isolates spoken in the area. Within New Guinea itself, the Sepik River basin (which includes East Sepik and West Sepik, or Sandaun, provinces), with its 200 languages, is the most linguistically

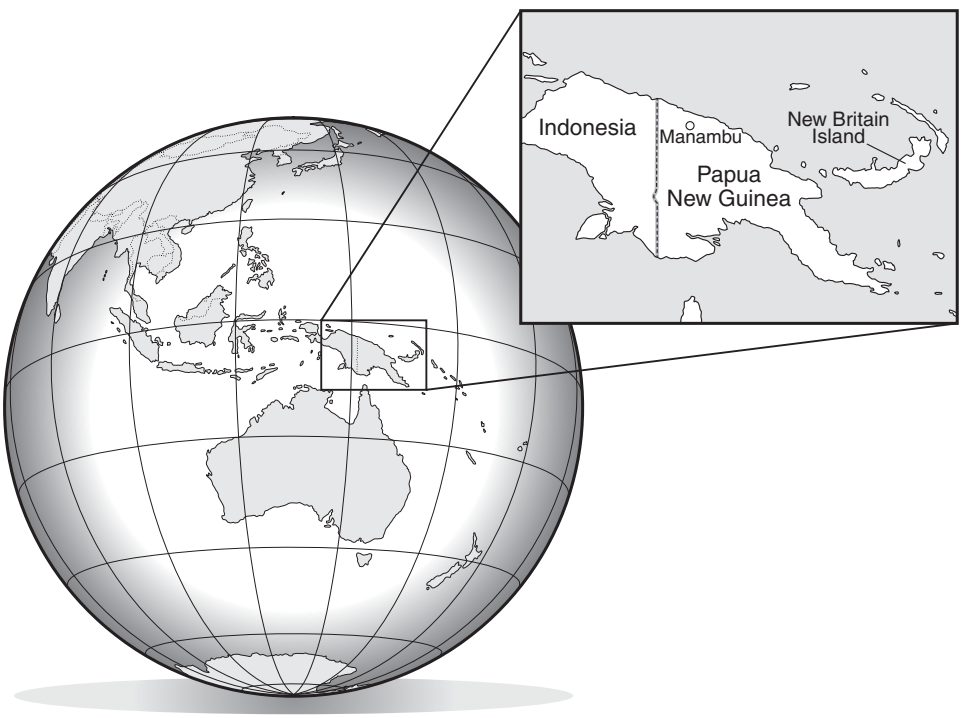


Figure LP10.1 Location of Manambu speakers in New Guinea

SIDEBAR LP10.1
The online resources for this language profile include a glossed and translated Manambu text, with audio files and photos of the speaker, and a short speaker biography

diverse. Of the several language families of the Sepik (including the Lower Sepik, Ramu, Sepik Hill, Kwoma-Nukuma, and Tama families), the Ndu family is the largest in terms of both the number of speakers and the territory over which it extends, from the Sepik River itself northwards to the coast (Roscoe 1994).

Manambu is a member of the Ndu language family. About 2,500 people speak Manambu in four villages in the East Sepik Province (Ambunti district) along the Sepik River: Avatip, renowned as the most traditional village and a sort of Manambu "metropolis"; Malu, the place where the first contact with Europeans took place early in the twentieth century; Yambon, or Yuanab; and Yawabak (see Figure LP10.2). Not more than 200–400 Manambu speakers live in scattered expatriate communities in major cities of Papua New Guinea, including Port Moresby, Wewak, Lae, Madang, Kokopo, and Mount Hagen. Because of the complex language contact situation, the Manambu language is considered to be endangered (see Textbox LP10.1).

TEXTBOX LP10.1 **HOW VITAL IS MANAMBU?**

Just like many other indigenous languages in Papua New Guinea, Manambu has hardly any monolingual speakers. Most children acquire Tok Pisin, the local **lingua franca**, as their first language, using it in their day-to-day communication. School education is conducted in Papua New Guinea English. The Manambu language can therefore be considered endangered.

Both Tok Pisin and Manambu are used at home and also in some rituals which are still performed, albeit in a reduced form (compared to what was documented earlier). Tok Pisin is dominant in village meetings, parent–teacher meetings at school, and in church (where Manambu is also used, but to a limited extent). That is, Tok Pisin and Manambu are in a partially **diglossic** situation. The necessity for proficiency in Tok Pisin is enhanced by the number of outsiders living in the villages, mostly as a result of mixed marriages.

However, the prospects for Manambu's survival may not be that dismal. The role models of returning urban Manambu – and the power and enduring value of cultural knowledge conceived as the knowledge of important words and totemic and personal names – are what may ensure that the language lives on. Tok Pisin and Papua New Guinea English are there to stay, as languages of the outside power and authority conceptualized as attributes of the "white man's" world. But neither of these intruders appears to shatter the position of Manambu as the language of spiritual and symbolic power, which, in this Sepik culture, is most valued. Manambu remains an emblematic language for the people it "belongs" to, and the traditional owners are determined to pass it on.

SIDEBAR LP10.2
For an introduction to multilingualism and diglossia, see Section 11.2.3.

In terms of its grammatical structure, Manambu is one of the most complex languages in the Ndu family. The relative complexity of Manambu can be partially accounted for by language contact. The Manambu incorporated into their community members of neighboring tribes whom they had conquered as a result of inter-tribal warfare (Harrison 1993; Aikhenvald 2009). These outsiders spoke different languages and as they learned Manambu they did so imperfectly, bringing in features of their own native speech. Some of these features eventually spread through the entire Manambu community, creating a **substrate** effect.

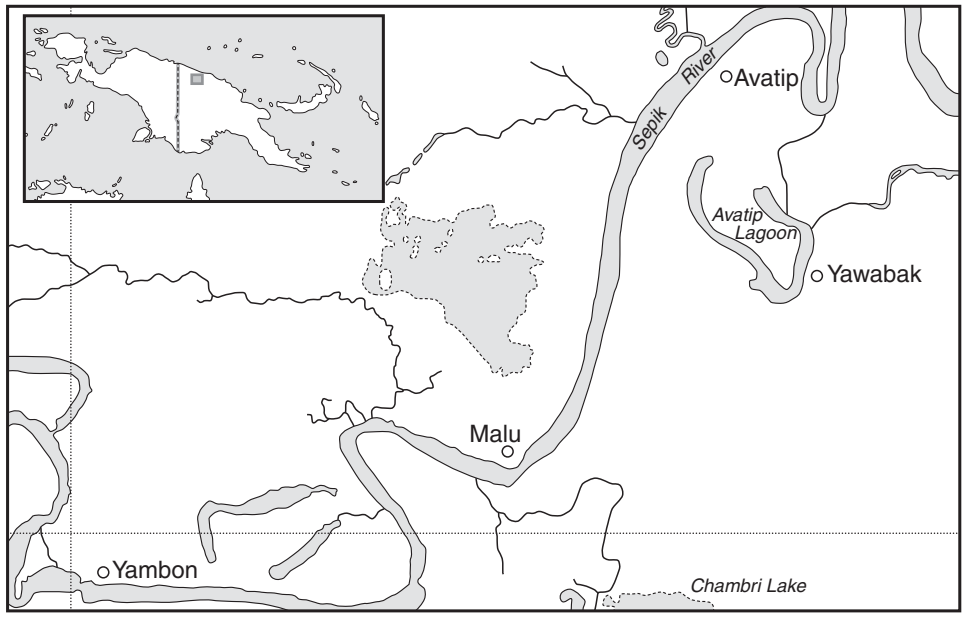


Figure LP10.2 The Manambu-speaking villages Yawabak, Avatip, Malu, and Yuanab (Yambon)

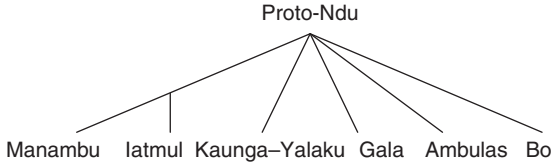


Figure LP10.3 The Ndu language family

SIDEBAR LP10.3
See Sections 13.4 and 13.5 for a discussion of substrate language influence.

We now turn to a few salient features of the language. First we present a brief snapshot of Manambu's linguistic type and some typological features. We then discuss one of the key issues in Manambu grammar: the marking of grammatical relations on verbs and on nouns.

SIDEBAR LP10.4
The orthography for Manambu follows the IPA except for the transcription of palato-alveolar and palatal consonants. As in many orthographic systems, the letter *j* indicates the postalveolar affricate, *y* indicates the palatal glide, and *ñ* indicates the palatal nasal. These are shown in Table LP10.1.

10.2 The Linguistic Features of Manambu

10.2.1 Phonology

Manambu has twenty-one consonants and nine vowels, more than any other language of the Ndu family. These are shown in Tables LP10.1 and LP10.2. An interesting Ndu phonological feature is discussed in Textbox LP10.2.

Stress is contrastive: it may distinguish words with different meanings. Minimal pairs are *ákəs*, a particle indicating habitual negation, and *akə́s* 'catch!', *gərñə́r* 'to tail' and *gəñə́r* 'later.'

TABLE LP10.1 Consonants in Manambu

	Bilabial	Labiodental	Dental	Alveolar	Palato-alveolar	Palatal	Velar	Glottal
Voiceless non-labialized stops	p		t				k	
Voiceless labialized stops	p^w						k^w	
Voiced non-labialized stops	b		d				g	
Voiced labialized stops	b^w						g^w	
Voiced fricative		v						
Voiceless fricatives				s				h
Voiced affricate					j [dʒ]			
Lateral			l					
Trilled rhotic			r					
Nasals	m		n			ñ [ɲ]		
Glides	w					y [j]		

TABLE LP10.2 Vowels in Manambu

	Short vowels			Long vowels		
	Front	Central	Back	Front	Central	Back
High	i		u	i:		u:
Middle		ə				
Low	æ	a		æ:		a:

TEXTBOX LP10.2 **PRENASALIZED STOPS**

Manambu shares an interesting phonological feature with many Papuan and Austronesian languages of this area: voiced stops and the voiced affricate are prenasalized in syllable-initial position. So, the word for 'man' /du/, is pronounced as [^{n}du]. Incidentally, this root is shared by all the Ndu languages and is the name given to the whole family.

10.2.2 Morphology

As discussed in Chapter 4, languages can be classified based on their degrees of fusion and degrees of synthesis. Manambu can be described as **synthetic**, that is, allowing many

morphemes per word. The language is also **agglutinating**, so it is relatively easy to determine the boundaries between morphemes, although there is some fusion. Most grammatical morphemes are suffixes. There are just two prefixes: the valency-increasing *kay-*, which will be discussed below, and the second-person imperative *a-*.

10.2.3 Word Classes: Nouns

The major word classes in Manambu, nouns and verbs, are both open classes. The two are clearly distinguished, as they have different grammatical categories and different inflectional possibilities.

TEXTBOX LP10.3 **CLASSIFICATORY FATHERS**

Each Manambu person has more than one man whom they address as *asa:y* 'father.' One uses this term for a biological father, and also for one's father's brothers – that is, 'paternal uncles.' These are called "classificatory fathers." A child belongs to the same clan as their classificatory father. A son would learn traditional lore and family history from one of his fathers and listen to their advice. In addition, names – which are considered a prized possession among the Manambu – are inherited from one's classificatory fathers.

SIDEBAR LP10.5

In Example (1), you will notice that the associative non-singular and the dual marker in Manambu are homonyms. This is accidental; they are not etymologically related, as each has a different Proto-Ndu etymology (see Aikhenvald 2008: 594–595).

Beginning with nouns, nominal categories include two genders (masculine and feminine), three numbers (singular, **dual**, and plural), nine case forms, and a number of derivations.

Number is usually realized through agreement on modifiers and on the verb. For example, consider the noun phrase *kə-di ya:p* (PROX.DEM-PL rope) 'these ropes,' which is taken from Example (7) below. The proximal demonstrative stem *kə* 'this' takes a plural suffix reflecting the plurality of the head noun. (Similarly, the demonstrative *these* is plural in English.) Number marking is found on only some nouns. Kinship terms, including the word for 'child' *ñau*, and a handful of nouns from other semantic groups (such as *kudi* 'mouth'), are marked for number, e.g., *asa:y* 'father,' *asay-vəti* (father-DU) 'two classificatory fathers' (see Textbox LP10.3), *asay-ugw* (father-PL) 'many classificatory fathers.' The noun *ñan* 'child' has a semi-suppletive form *ñədi* for the dual number, and a plural *ñan-ugw* 'children.'

A special type of plural can be marked on personal names. This is referred to as an **associative plural**. It refers to a group of two or more people associated with the person who is named. Thus, *Tanina-bər* (Tanina-ASSOC.NSG) may mean 'Tanina and one other person,' or two altogether, in which case this form requires dual agreement on modifiers and on the verb. In Example (1), agreeing elements are underlined.

(1) *a-bər* *Tanina-bər* *wakuna-bər*
DIST.DEM-DU Tanina-ASSOC.NSG go.out-3DU
'Those two, Tanina and one other person, are going out'

SIDEBAR LP10.6
To review the terms **proximal** and **distal** for demonstratives, see Section 5.8 or the Glossary.

The same form *Tanina-bər* can refer to Tanina and more than one person, i.e., more than two altogether. In such cases, plural agreement markers appear on the modifiers – such as the plural **distal** demonstrative *a-di* in Example (2) – and on the verb:

(2) *a-di* *Tanina-bər* *wakuna-di*
DIST.DEM-PL Tanina-ASSOC.NSG go.out-3PL
'Those several/many, Tanina and other people, are going out'

SIDEBAR LP10.7
To read about a language with a system of four **genders**, see the Tsez Language Profile, Section LP7.3.1.

Gender is marked in independent pronouns and in pronominal suffixes on the verb. But it is only distinguished for the second- and third-person singular categories; the distinction is **neutralized** (not made) in the non-singular numbers – the dual and the plural. Each noun is assigned masculine or feminine gender. In the noun phrase, modifiers (including demonstratives, interrogatives, possession markers, and three of the adjectives) agree with the gender of the head noun; there is gender agreement in the verb as well.

For the majority of nouns, gender is not expressed on the noun itself, that is, one cannot determine the gender of a noun simply by looking at its form (as is true with much of the vocabulary of Romance languages). The only exception is personal names – a highly salient subgroup of nouns in Manambu that are also considered tantamount to monetary valuables, those whose ownership is disputed in name debates (see Textbox LP10.4). Most personal names have masculine and feminine counterparts, which are distinguished morphologically; for example, the male name *Kiginəbək* has a female counterpart *Kiginəbəkə-bər*. Some male personal names contain the morpheme *du* 'man,' e.g., *Kawi-du*, while some female personal names contain *ta:kw* 'woman,' e.g., *Ñamamayra-ta:kw*.

Nouns are assigned genders according to the sex of a human referent, and to the shape and size of a referent of any other semantic group. That is, men are assigned to the masculine, and women to the feminine gender. A large dog or a large house is treated as masculine, and a small dog or a small house as feminine. Many speakers are aware of the correlation between gender assignment and size: *a-də wuua-də wi* (DIST.DEM-SG.M 1SG-SG.M house) 'that (masculine) house of mine' – referring to a big house I own – may be translated as 'that big man-type house of mine.' Conversely, *a-Ø wuua-Ø wi* (DIST.DEM-SG.F 1SG-SG.F house) 'that (feminine) house of mine' – referring to a small house I own – may well be translated as 'that small woman-type house of mine.' Round objects, such as *ab* 'head,' *gwas* 'turtle,' or *ya:l* 'belly,' are normally feminine. But a belly of an unusually large size can be referred to with the masculine form of a modifier.

TEXTBOX LP10.4 **THE VALUE OF NAMES**

Manambu culture differs dramatically from those of Western societies. For example, the Manambu people place particular importance on ownership of personal names, and totemic names belonging to the major clan groups and their subclans. Possessing multiple names is viewed as a major asset. Ritual debates concerning name ownership are, traditionally, the main political forum and the center of village life. For a detailed ethnographic study of the Manambu, see Harrison (1990, 1993). For another cultural note related to counting, see Textbox LP10.6.

A ritual name debate

Assigning a gender to a mass noun depends on the amount of the referent: money can be referred to as masculine when talking about a large sum; a small sum is referred to with feminine gender. A not-too-dark night is feminine; if a night is completely dark, it becomes masculine. The word *ka:m* 'hunger' is treated as masculine if one is very hungry, and as feminine if one just wants a snack. A further important function of gender is to distinguish polysemous nouns. For instance, *ma:m* 'older sibling' can refer either to an elder brother or to an elder sister; gender is instrumental for disambiguating the reference.

By semantic extension, an unusually big or bossy woman can be treated as masculine, and a squat fattish man as feminine. The word *ab* 'head' typically requires feminine agreement, because of its round shape. But if one is suffering from a severe headache, one can say 'my-masculine head is hurting' – this is because the head then feels unusually big and heavy.

10.2.4 Word Classes: Verbs

Some Manambu verbs are either strictly intransitive or strictly transitive. Strictly intransitive verbs include motion verbs, e.g., *yi-* 'go,' *ya-* 'come,' *gəp-* 'run,' and a few others, such as *parki-* 'be torn.' A few verbs can be used only transitively, e.g., *yi-* 'say, speak' and *kur-* 'do, make, get.' There are few ditransitive verbs, e.g., *kwatiya-* 'give to a non-third person,' *kui-* 'give to third person,' and derivations based on this. However, over 80 percent of verbs in Manambu are **ambitransitive**: they can be used either transitively or intransitively, in a similar way to English *eat*: in its transitive use, it requires an object (e.g., *I have eaten dinner*); in its intransitive use, no object appears (e.g., *I have eaten already*).

Ambitransitive verbs in Manambu include ingestive verbs *kə-* 'consume (food, drink, smoke)' and *jə-* 'chew,' and verbs of cognition *wukə-* 'hear, obey, understand' and *laku-* 'know, understand.' The verb *rali(na)-* 'untie, be untied' is among the few ambitransitive verbs of the type similar to English *break*, as in *I have broken a glass* and *A glass broke*. This represents one of two types of ambitransitive verbs, where the subject of the intransitive clause (*glass* in *a glass broke*) corresponds to the object of the transitive clause (I *have broken a glass*). We will call this type of ambitransitive S.of.I=O.of.T. The other type of ambitransitive verb is exemplified by English *eat*. Here the subject of the intransitive clause (*I ate*.) corresponds to the subject of the transitive (*I ate a sandwich*). This type will be referred to as S.of.I=S.of.T. Moving back to Manambu *rali(na)*, Examples (3) and (4) illustrate that this is the S.of.I=O.of.T type.

(3) Intransitive

[*wun-a*	*kwa:r*]$_{SUBJ}$	*(ka:p)*	*ralina*
POSS.1SG.F	grass.skirt	(by.itself)	untie.3SG.F.NPST

'My grass skirt comes/has come untied (by itself)'

(4) Transitive

[*wuna-ø*	*kwa:r*]$_{OBJ}$	*ralina-wun*
1SG.SG.F	grass.skirt	untie-1SG.F.NPST

'I untied/have untied my grass skirt'

The prefix *kay-* derives a transitive verb from an intransitive verb. The intransitive verb *pərki(na)-* 'be torn' is shown in Example (5).

(5) Intransitive

[*wuna-ø*	*ku-su-wapwi*]$_{S}$
1SG-SG.F	put-UP-clothes
bəta:y	*pərkina*
already	tear(INTR).3SG.F.NPST

'My clothing (lit. 'clothing to put on/wear') is already torn'

In Example (6), the verb 'be torn' is transitivized.

(6) Causativized transitive

[*kə*	*kuprapə*	*ñan*]$_A$	[*wuna-ø*	*ku-su-wapwi*]$_O$	***kay**-pərkina*
PROX.DEM.SG.F	bad	child	1SG-SG.F	put-UP-clothes	CAUS-tear(INTR).3SG.F.NPST

'This naughty girl (fully) tore my clothing'

TEXTBOX LP10.5 **CAUSATIVE CONSTRUCTIONS**

Causative constructions are ways of expressing a caused event. The causative construction illustrated in (6) represents the most common type: morphological causation. In morphological causatives there is a causative morpheme, like *kay-* in Manambu, that is affixed to the verb. Most commonly in the world's languages, causative constructions increase the transitivity of the verb by one degree so that intransitive verbs become transitive, and transitive verbs become ditransitive. They thus involve the introduction of a new core argument, the semantic causer, which is treated as the agentive core argument (i.e., the A). The single core argument of the corresponding intransitive clause (S) becomes the O of the derived transitive, as with the argument *wuna ku-su-wapwi* 'my clothing' in Examples (5) and (6).

TEXTBOX LP10.6 **THE CULTURAL RELEVANCE OF COUNTING**

The Manambu language has a decimal counting system. Proficient speakers can count up to a hundred using Manambu terms. In traditional times, counting was an established cultural practice: male prowess was estimated on the basis of how many enemies a man had killed, and so it was customary to count the victims, as a matter of competition. Nowadays, Tok Pisin and English numbers are used more and more often, especially in counting money.

This prefix *kay-* occurs with about a hundred verbs referring to states and processes (the most frequently used ones are listed in Aikhenvald 2008: 407). Derived transitive verbs containing *kay-* are strictly transitive.

The prefix *kay-* can also occur on several dozen ambitransitive and transitive verbs, all of them verbs of manipulation. With these verbs, it does not function as a causative (see Textbox LP10.5) and does not increase the transitivity by one degree. Instead, its effects are as follows:

1. It converts any ambitransitive verb into a strictly transitive one. That is, the transitivity status of the verb is affected. However, *kay-* does not make such a verb into a causative, i.e., it does not introduce a new "causer."
2. The semantic effect of *kay-* on transitive and ambitransitive verbs implies an increase in manipulative effort, intentionality, volitionality, and control on the part of the subject (A), and may also imply that the object (O) is multiple or large.

Consider the ambitransitive verb *rali(ua)-* 'untie, be untied,' which was introduced in Examples (3) and (4). In (7), the same verb is used with the prefix *kay-*. The ropes are tangled, and untying them requires special effort:

(7) *ya:n* *kə-di* *ya:p* *a-rali* *a-kay-rali*
come.SEQ PROX.DEM-PL rope IMP-untie IMP-MANIP-untie
'Come and untie these ropes; untie them with special effort (since they are entangled)'

This causative-manipulative polysemy is rather uncommon cross-linguistically. It is reminiscent of similar patterns described for Oceanic languages (Harrison 1982; Dixon 1988), which are also spoken in the Pacific region. To compare causative constructions in English, see Stop and Reflect LP10.1.

STOP AND REFLECT LP10.1 **CREATING CAUSATIVES IN ENGLISH**

English does not have a causative affix like *-kay* but has other means for signaling causation. For each of the English intransitive verbs below, think of a corresponding transitive predicate with a causative meaning that includes a new core argument, the causer (e.g., *be hot* has a corresponding transitive predicate *heat*, as in *the soup is hot* and *he heated the soup*). How many strategies does English use and how would you describe them? Can you use more than one strategy for any of these verbs? If so, is there a difference in meaning and how would you characterize it?

eat, die, be afraid, be famished, be tired, sleep, jump, sneeze, laugh

Verbal inflectional categories cover three persons, two genders (distinguished in second and third person), three numbers, and a variety of aspects. Among the various modal meanings are the "frustrative" ('intend but fail to do'), the purposive 'intend,' and the desiderative 'want,' as shown in Example (8).

(8) *wun* *kami:* *kə-kar*
1SG fish consume-DESIDERATIVE
'I want to eat fish'

A verb in the declarative mood can cross-reference the person, number, and gender of the subject. If a clause contains a constituent that is more topical than the subject, this constituent can also be cross-referenced alongside the subject. This will be discussed more fully below.

As we will see, past and non-past tenses are fused with person-marking suffixes, while future and irrealis are marked with suffixes. Most verbs take directional markers, specifying whether the movement follows an upward, a downward, or an outward direction, toward the speaker or away from them. A verb root can be reduplicated to express intensive, continuous, or repeated action.

SIDEBAR LP10.8
See Section 12.3.1 for a discussion of **grammaticalization** processes.

Verbs are productively combined with each other to specify the manner or a sequence of actions, such as *væsə-piñə-* (step-slip) 'slip stepping,' or *gəpə-wula-* (run-go.inside) 'go inside by running.' Some verbs have taken on grammatical meanings when combined with other verbs (i.e., they have become

grammaticalized): the verb *təp-*'to be closed' acquired the meaning of 'do for the last time,' as in *və-təp-* (see-be.closed) 'see for the last time,' and the verb *wa-* 'say, speak' developed into a causative marker, as in *yaga-* 'be scared,' *wa-yaga-* 'make (someone) scared.'

10.2.5 Adjectives

Manambu has two subclasses of adjectives. Both are closed classes that do not admit new members. One subclass consists of just three members: *kwasa* 'small,' *numa* 'big,' and *yara* 'fine.' These adjectives always agree with the noun in gender and in number, e.g., *numa-də du* (big-SG.M man) 'big man,' *numa ta:kw* (big-SG.F woman) 'big woman,' *numa-di du* (big-PL man) 'big men.' The other subclass has about sixteen members, covering meanings of value (e.g., *vyakətə* 'good', *kuprapə* 'bad'), size (e.g., *gərgər* 'tiny,' *səmi* 'long'), and color (e.g., *gla* 'black,' *wama* 'white,' *ñiki* 'red'). These adjectives do not agree with the noun they modify but have a single form, regardless of the gender and number of the noun, e.g., *vyakətə du* 'good man,' *vyakətə ta:kw* 'good woman.' Many of these adjectives are transparently related to nouns: for instance, *ñiki* 'red' is also the word for blood, and *wama* 'white' is derived from *wa:m* 'white cockatoo' (a type of bird).

10.2.6 Personal Pronouns

Personal pronouns are a closed word class (the full set is given in Table LP10.3). The categories of number (singular, dual, plural), gender (masculine, feminine), and person (first, second, third) are all distinguished. However, they are not maximally distinguished; there are not distinct forms for every logically possible combination of these three categories. We can analyze the distribution of categories as follows:

- Number is distinguished in all forms. One can always tell from the pronoun whether the referent is singular, dual, or plural.
- Gender is only distinguished in the second- and third-person singular. Gender distinctions are neutralized (i.e., not made) in the first-person singular and in all non-singular (dual and plural) categories.
- Three persons are distinguished in the singular and plural. The distinction between second person and third person is neutralized in the dual; i.e., there is only one marker for all non-first persons in the dual.

Note how the structure of Table LP10.3 reflects the pattern of these distinctions.

TABLE LP10.3 Manambu personal pronouns

Person/Gender	SG	DU	PL
1	*wun*	*an*	*ñan*
2.M	*mən*	*bar*	*gwur*
2.F	*ñən*		
3.M	*də*		*dəy*
3.F	*lə*		

10.2.7 Demonstratives

Demonstratives are the most complex of the closed word classes. They distinguish five directions – up, down, across, outwards, and inside or away from the Sepik River – in addition to three additional degrees of distance.

The three demonstrative stems are *kə-* 'this, close to speaker,' *wa-* 'this, close to hearer,' and *a-* 'that, far from both speaker and hearer.' Each of these stems can combine with one of five directional suffixes, *wur* 'up, upstream,' *-d(a)* 'down, downstream,' *-aki* 'across,' *-aku* 'outwards' or *-wula* 'inside, away from the Sepik River toward the shore.' For example, a Manambu speaker refers to stars, which are far up in the sky, as *kə-di-a-wur kugar* (PROX.DEM-PL-LINKER-UP star) 'those stars (up),' and a village close to the speaker away from the Sepik River is referred to as *kə-d-a-wula təp* (PROX.DEM-SG.M-LINKER-AWAY.FROM.RIVER village) 'this village away from the Sepik River.'

10.2.8 Clause Combining and Switch Reference

Similar to many other languages of New Guinea, Manambu has extensive **clause-chaining**, a construction that creates chains of clauses by using a special set of suffixes on the verbs in the non-final clauses in the chain, and then fully inflecting the verb in the final clause of the chain. In addition, and again like many other languages of the area, Manambu has a complex system of **switch reference**, whereby the clause-chaining suffixes indicate whether the subject of the clause is the same as, or different from, that of the main clause. Example (9) illustrates a chain of two clauses. The suffix *-ku* on the verb of the first clause is a clause-chaining suffix. In addition to forming the chain, it marks two other grammatical meanings: that the action of the non-main clause is completed, and that its subject is the same as that of the main clause. Note that in same-subject chained clauses (e.g., the first clause of (9)), the person of the subject is not marked on the verb. Clause boundaries are indicated with square brackets.

SIDEBAR LP10.9
Also see the South Conchucos Quechua Language Profile, Textbox LP6.5, for another example of a language with a switch-reference system.

(9)	[*a-di*	*jəb*	*kur-ku*]	[*ata*	*ya:d*]
	DIST.DEM-PL	design	make-COMPL.SS	then	go.3SG.M.PST

'Having made those designs, he went off'

In contrast, in Example (10) the subjects of the chained clause and the main clause are different. The predicate of the non-main clause contains a person marker (*-də-*, which indicates third-person masculine singular) followed by the clause-chaining suffix *-k*, which indicates both that the action of the chained clause is completed and that we are to expect a different subject from the following main clause.

(10)	[*a-di*	*jəb*	*kur-də-k*]	[*ata*	*ya:d*]
	DIST.DEM-PL	design	make-3SG.M-COMPL.PS	then	go.3SG.M.PST

'After he (Iraman) had made those designs, he (Kawidu) went off'

The verb always occurs at the very end of a chained clause. In a main clause, the order is more flexible: the verb-final principle is a tendency rather than a steadfast rule. To explore switch reference further, do the exercise in Stop and Reflect LP10.2.

STOP AND REFLECT LP10.2: **SWITCH REFERENCE IN A MANAMBU NARRATIVE**

Manambu narrative text with sound files

Consider the following sentence, which is Sentence (10) of the Manambu narrative text that is available on the website. For convenience, the glosses for switch-reference morphology are highlighted in bold. There are three characters referenced by this sentence: the mother ("she"), the small masculine child, and the older brother. Determine which character is the subject referent of each clause and observe how the switch-reference system works. Based on the logic of this system, which character was the subject (who took the basket) in line (b)? The speaker did not use a clause-chaining form in line (e). If she had, would it have been a same-subject or different-subject form?

a. *[vaga-lə-k]*
put.inside-3FEM.SG-**DS**

b. *[a-də* *kəbi* *kur-ku]*
DEM.DIST-MASC.SG basket take-**SS**

c. *[a-də* *məy-a* *kwasa-də* *ñan-ad,*
DEM.DIST-MASC.SG real-LK small-MASC.SG child-3masc.sg.nom

d. *ma:m* *yata-də-k],*
older.sibling carry.on.back-3MASC.SG-**DS**

e. *[kədika* *ata* *yi-di],*
DEM.PROX.REACT.TOP.PL thus go-3PL.PST

f. *[kwarba:r* *ata* *tabu-di].*
jungle+LK+ALL then escape-3PL.PST

'After she put (the food inside the basket), XX took that basket; that really small child, after older brother put him on his back, they went off, escaped into the jungle.'

10.3 Grammatical Relations

Understanding grammatical relations in Manambu is pivotal for getting a grasp of its structure. Grammatical relations are marked in two ways: by case-marking on nouns, and by agreement on verbs. Although these are common ways of indicating grammatical relations cross-linguistically, the way these are realized in Manambu is typologically unusual.

10.3.1 Verb Agreement

Verbs in Manambu can be inflected by two sets of suffixes that mark the person, gender, and number of arguments. Verbs can be fully or partially inflected. Fully inflected verbs agree with (or "cross-reference") two arguments: the subject and any other argument (except the copula complement or quoted speech) that is more topical than the subject, i.e., the **topic**. (See Textbox LP10.7 for a discussion of topicality.) Partially inflected verbs agree with only the subject; an example of this is the non-final verb in (10). Some verbs are uninflected and

don't take person agreement at all; we saw this with the desiderative verb in (8) and the non-final same-subject verb in (9).

If there is no constituent more topical than the subject and the verb is a fully inflected verb, the subject (A or S) is cross-referenced as the topic. This is done with one of the set of 'topic' agreement suffixes (glossed TOP). The full paradigm of suffixes that cross-reference the most topical argument is given in Table LP10.4.

TEXTBOX LP10.7 **TOPICALITY**

Many languages are like Manambu in having grammatical means – such as morphemes or separate constructions – that indicate whether or not the people or entities referred to by arguments are important to the surrounding discourse. If they are, they are likely to come up repeatedly. Such referents are considered to be **topical** in the discourse.

Consider Example (11). The ambitransitive verb 'know' is used intransitively, i.e., without any object. The subject, 'he,' is cross-referenced on the verb as the most topical argument.

(11) *bu* *lakuna-d̲*
already know-3SG.M.TOP.NPST
'He knows (already); he is knowledgeable'

This same verb can be used transitively, with an object. In (12) the object is not topical, that is, it is not something that is likely to be further discussed in the discourse. Since the subject is the most topical argument in the clause, again it is the only participant cross-referenced on the verb.

(12) [*ka* *ma:j*]$_{O}$ *lakuna-d̲*
PROX.DEM.SG.F story know-3SG.M.TOP.NPST
'He knows/understands this story'

TABLE LP10.4 Agreement paradigm for topical arguments

Person/Gender	SG		DU		PL	
	NPST	PST	NPST	PST	NPST	PST
1.F	*-wun*	*-l-wun*	*-bər-an*		*-diy-an*	
1.M	*-də-wən*					
2.F	*-ñən*	*-lə-ñən*	*-bər-bər*		*-di-gwər*	
2.M	*-də-mən*					
3.F	*-ø*	*-l*	*-bər*		*-di*	
3.M	*-d*					

A non-subject argument can also be cross-referenced by these suffixes if it is more topical than the subject. This is true regardless of the verb's transitivity. In Example (13) the object is topical (the conversation revolves around the road) and is thus indexed by a suffix from the paradigm in Table LP10.4, the same set used for the subject in (11) and (12). The subject is also cross-referenced on the verb, but now with a *different* suffix from an independent set, given in Table LP10.5. Thus the verb in (13) agrees with two arguments: the topic and the subject.

(13) [*lə*]$_{A}$ *a-də* [*yabə-m*]$_{O}$ *laku-la-d*
3SG.F DIST.DEM-SG.M road(M)-ACC/LOC know-3SG.F.SBJ.NPST-3SG.M.TOP.NPST
'She knows the road (fully)'

Arguments other than the subject or object can also be topics and cross-referenced on the verb. In (14) it is the addressee that is marked, since it is the topic.

(14) *dəkə-k* *ata* *wa-tuə-d*
3SG.M-DAT thus say-1SG.SBJ.PST-3SG.M.TOP.PST
'I said to him thus'

In (15) the topical argument refers to a time (note that 'time' is usually feminine, being conceived of as round and cyclic; hence the feminine form of the demonstrative 'that' is used).

(15) [*a* *səkər*]$_{TEMPORAL}$ *ya-də-l*
DIST.DEM.SG.F time come-3SG.M.SBJ.PST-3SG.F.TOP.PST
'He came at that time'

The choice between cross-referencing one or two arguments on a Manambu verb is largely independent of the verb's transitivity: both transitive and intransitive verbs can cross-reference one or two arguments.

The Manambu system of verb agreement is typologically unusual in two ways. First, the number of cross-referenced arguments (one of which has to be the subject) depends on the

TABLE LP10.5 Cross-referencing paradigm for non-topical subjects

Person/Gender	SG		DU		PL	
	NPST	PST	NPST	PST	NPST	PST
1.F/M	*-tua-*	*-tuə*	*-ta-*	*-tə-*	*-bana-*	
2.F	*-ñəna-*	*-ñənə-*	*-bra*	*-brə-*	*-gwura-*	
2.M	*-məna-*	*-mənə-*				
3.F	*-la-*	*-lə-*			*-dana-*	*-da*
3.M	*-da-*	*-də-*				

discourse properties of the non-subject constituent, rather than on the transitivity, or other lexical properties, of the verb.

Secondly, the subject can be cross-referenced by one of two sets of suffixes, as opposed to just one. But note that the subject is the only argument that *must* be marked on the verb in one way or the other. Thus, the verbal agreement system constitutes evidence for the grammatical relation of subject, despite the fact that two sets of suffixes are involved. The system also provides evidence for the grammatical relation of topic in Manambu, as the topic is the argument cross-referenced by the paradigm in Table LP10.4.

10.3.2 Case-Marking on Nouns and Grammatical Relations

In addition to verb agreement, grammatical relations are also indicated by case-marking, with subjects being marked one way, and non-subjects being marked differently. Nouns distinguish nine case forms. Case-markers are distributed as follows:

i. Subjects do not take any case-markers.
ii. Objects can either not be case-marked or take the case-marker *-Vm*. This pattern will be discussed further below.
iii. Oblique arguments take case-markers based upon their semantics. The oblique cases are as follows.
  a. locative case ('at', 'to') *-Vm*
  b. dative-aversive ('to', 'for fear of') *-Vk*
  c. comitative ('with' as in 'do something with someone') *-wa*
  d. terminative ('up to a point') *-Vb*
  e. transportative ('via transport') *-say, -sap*
  f. allative-instrumental ('to' or 'with (an instrument)') *-Vr*
  g. substitutive 'instead of' *-yœy*

The object of a transitive verb takes no case-marker if it is either indefinite, or non-referential and non-topical, or not completely involved in the activity. An example is in (12) above: 'this story' is not topical and thus is not case-marked. (Similar examples are 'grass skirt' in (3), 'clothing' in (6), and 'ropes' in (7)). See Textbox LP10.8 for a comparison of this type of case-marking pattern to that found in Spanish.

TEXTBOX LP10.8 **DIFFERENTIAL OBJECT MARKING IN SPANISH**

This type of pattern, where objects take a case-marker only if they have certain semantic or discourse properties, is common cross-linguistically. The technical name for this in linguistics is **differential object marking**. An example of another language with differential object marking is Spanish. In the sentence *Esta mañana he visto a la hermana de María* 'This morning I saw Maria's sister,' the object is obligatorily marked with the accusative preposition *a*. Contrast this with *Esta mañana he visto la nueva iglesia* 'this morning I saw the new church,' where the object is unmarked, due to the semantic and discourse properties of the noun phrase (i.e., it is inanimate and non-topical). The factors that determine the presence or absence of *a* with objects in Spanish are famously subtle, and there is a large literature on this subject.

In contrast, the noun 'male children' in (16) is the topic of a stretch of discourse, and so it acquires case-marking, in addition to being cross-referenced on the verb. That is, agreement on verbs and case-marking on nouns follow different principles.

(16) *a* *kuprapə* *wapi* *dua-ñan-ugw-a:m*
DIST.DEM.SG.F bad bird man-child-PL-ACC
kə-la-di
eat-3SG.F.SBJ.PST-3PL.TOP.PST
'That bad bird ate up the male children (we are talking about)'

- Verb agreement: subjects are always cross-referenced; non-subjects are cross-referenced only if they are topical.
- Case-marking: subjects are never case-marked; objects are case-marked only if definite, referential, and/or topical. Non-core arguments are case-marked in accordance with their semantic role.

CHAPTER SUMMARY

We have seen that the grammatical structures of Manambu are typologically interesting and unique. These include a nominal gender system, ambitransitive verbs, two subclasses of adjectives, an extensive set of demonstratives that distinguish direction in addition to distance, clause-chaining with switch reference, differential object marking, and a complex system of argument cross-referencing that is sensitive to discourse concerns. However, even though the grammar may seem exotic, the pieces are familiar and the language follows the same core principles on which other grammatical systems are based. This universality across languages attests to the common cognitive make-up of our species, and the common needs of speakers in daily communication within societal structures. We've also seen hints at the relationship between the Manambu language and culture, as the language simultaneously reflects and transmits the Manambu worldview.

TEXTBOX LP10.9 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE

Convention	Meaning	Convention	Meaning
1	first person	DIST	distal
2	second person	DS	different subject
3	third person	DU	dual
ACC	accusative	F	feminine
ASSOC	associative	FUT	future tense
AWAY.FROM.RIVER	directional affix	HABITUAL	habitual
CAUS	causative	IMP	imperative
COMPL	completive	INTR	intransitive
DAT	dative	LINKER	linking morpheme
DEM	demonstrative	LOC	locative
DESIDERATIVE	desiderative	M	masculine

TEXTBOX LP10.9 (*cont.*)

Convention	Meaning	Convention	Meaning
MANIP	manipulative	REACT.TOP	reactivated topic
NPST	non-past tense	SBJ	subject
NSG	non-singular	SEQ	sequential
OBL	oblique	SG	singular
PL	plural	SS	same subject
POSS	possessive	TOP	topic
PROX	proximal	UP	directional affix
PST	past tense		

SUGGESTIONS FOR FURTHER READING

Aikhenvald, **Alexandra Y.** 2008. *The Manambu language of East Sepik, Papua New Guinea*. Oxford University Press.

This is a comprehensive study of the Manambu language.

Aikhenvald, **Alexandra Y.** 2012. "Possession and ownership in Manambu, a Papuan language from New Guinea." In **Aikhenvald**, **A. Y.** and **R. M. W. Dixon** (eds.), *Possession and ownership: A cross-linguistic typology*. Oxford University Press. 107–125.

This deals with the ways in which possession is expressed in Manambu, depending on what one owns and how one relates to the objects.

Aikhenvald, **Alexandra Y.** 2014. "Double talk: Parallel structures in Manambu songs." *Language and Linguistics in Melanesia* **32**.2: 86–109.

This deals with the complex structure of Manambu mourning songs and songs about foiled marriages – a dying genre. Every song is improvised, and each consists of one stanza replicated in a different speech register of non-Manambu origin.

Aikhenvald, **Alexandra Y.** 2015. "Body, mind and spirit: Body parts in Manambu and their meanings." *Studies in Language* **39**: 85–117.

Body, mind (mawul), and spirit (kayak) are what makes a human a human in Manambu. This piece investigates how these concepts are different, and how the terms display different grammatical features.

Aikhenvald, **Alexandra Y.** 2015. "Distance, direction, and relevance: How to choose and to use a demonstrative in Manambu." *Anthropological Linguistics* **57**: 1–45 (published in 2016).

This article describes the complex Manambu system of demonstratives and ways of pointing things.

Aikhenvald, **Alexandra Y.** 2016. "Imperatives and commands in Manambu." *Oceanic Linguistics* **55**: 639–673.

This article describes how Manambu phrases commands and prohibitions and how it mitigates them using non-imperative forms in the language.

Harrison, **Simon**. 1990. *Stealing people's names: History and politics in a Sepik River cosmology*. Cambridge University Press.

Harrison, **Simon**. 1993. *The mask of war: Violence, ritual, and the self in Melanesia*. Manchester University Press.

These two books are detailed ethnographic studies of the Manambu and their culture.

Roscoe, **Paul**. 1994. "Who are the Ndu? Ecology, migration, and linguistic and cultural change in the Sepik Basin." In **Strathern, Andrew J**. and **G. Stürzenhofecker** (eds.), *Migrations and transformations: Regional perspectives on New Guinea*. University of Pittsburgh Press. 49–84.

This article discusses the history and expansion of the Ndu-speaking people.

EXERCISES

1. The discussion of the Manambu personal pronouns provided an analysis of the distribution of the grammatical categories of person, gender, and number, stating where they are marked and where they are neutralized. Construct a similar paradigm for English personal pronouns. Analyze the categories and write a similar set of statements that accurately characterize the distribution of grammatical categories. Then provide a set of statements on how the English and Manambu paradigms are similar and how they are different.

2. Review the discussion on the semantic basis of gender assignment and the effect of gender on lexical meanings. Given this discussion, consider each pair of expressions below. Of the two meanings given, which is likely to be signaled by the masculine form of the expression, and which is likely to be signaled by the feminine form?

   a. *numa səkal*
   'big distance'
   'enormous distance'
   b. *trausis* (loanword from English)
   'trousers'
   'trousers for a baby'
   c. *vaey*
   'spear'
   'gun'
   d. *wi*
   'house'
   'palace'
   e. *ta:b*
   'finger'
   'hand/arm'
   f. *ab*
   'head'
   'headache'
   g. *gəl*
   'raincloud'
   'clouds covering whole sky'
   h. *numa*
   'man'
   'fat round man'
   i. *ga:n*
   'somewhat dark night'
   'completely dark night'

3. The following pairs of clauses each exemplify ambitransitive verbs in Manambu. For each pair, determine whether the verb is of the S.of.I=O.of.T type (where the subject of the intransitive clause corresponds to the object of the transitive) or the S.of.I=S.of.T type (where the subject of the intransitive corresponds to the subject of the transitive). See Section LP10.2.4 of this profile to review this distinction.

   a. *kaykwa-* 'spill' (transitive); 'capsize' (intransitive)
   b. *rali-* 'untie' (transitive); 'come untied' (intransitive)
   c. *laku-* 'know' (transitive); 'be knowing' (intransitive)
   d. *kaja-* 'move (something) apart' (transitive); 'disperse; move apart' (intransitive)
   e. *səluku-* 'forget something' (transitive); 'be forgotten' (intransitive)
   f. *jə-* 'chew something' (transitive); 'chew' (intransitive)

4. Each of the Manambu sentences below consists of multiple clauses in a clause chain. For the purposes of this exercise, verbs with clause-chaining morphology are in boldface, although the suffixes have not been separated and glossed. Based on the meanings of each example, state which of the following clause-chaining forms would be most appropriate for each boldfaced verb:

   Sequential action, same subject
   Sequential action, different subject
   Simultaneous action, same subject
   Simultaneous action, different subject

   a. [*nak* *aki-taba:r* ***vœki:n***] [*nak* *mapa-taba:r* *vœrad*]
   one left-hand go.off one right-hand come.in.3SG.M.TOP
   'One (road) goes off to the left; one comes in from the right.'

   b. [***kar-dan***] [*taka-u*]
   bring-down put.down-1SG.IMP
   'Shall I bring it downstairs and put it down?'

   c. [*ata* ***rəta:y***] [***kəta:y***] [*ata* *wata:y* *tabu-dian*]
   then live eat then that.way escape-1PL.TOP
   'Then living and eating, in that way we escaped (the invaders).'

   d. [*dəkədə* *ñan* *gu* *kəku* ***kiya-dək***] [*ata* *gra:d*]
   POSS.SG.M child water consume die-3SG.M then cry.3SG.M
   'After his son had drowned, then (the father) cried.'

   e. ***[kusuta:y]*** [*vœra-kna-dəmən*]
   wear go.to.speaker-FUT-2SG.M.TOP
   'You will come to us wearing (the shirt).'
   (Context: mother telling a boy to try on a new shirt)

5. In Example (4d) above, the expression translated as 'drown' in English is actually a clause chain *gu kə-ku kiya-dək*, literally 'consumed water and died.' The verb *kə-ku* has the suffix for sequential, same-subject clause chains. This implies a conceptualization of drowning as involving events in sequence (drink water, then die). Does this match your conceptualization of drowning? Why or why not? You may want to consider how drowning is expressed in English or other languages that you speak in addressing this. (For a larger project, look up expressions for drowning in other languages and compare.)

6. In each of the examples below, the final inflection of the verb has been replaced by a series of Xs. Using the paradigms in Tables LP10.4 and LP10.5, provide the appropriate cross-referencing suffix or suffixes for each of the following Manambu sentences. In each case, the topical argument is given in bold.

   Example:

   kə ***wiyakə-də*** ***ki*** ***ada*** *kwatiya-kə-XXXX*
   PROX.DEM house-POSS.SG.M key DIST.DEM give.to.you-FUT-
   'I will give you that house key (lit. that key of this house).'

   Answer: *tua-d* (SG.SBJ-3SG.M.TOP)

a. ***kami:*** ***də*** *kə-kwə-XXXX*
fish 3SG.M eat-PST.HABITUAL-
'He used to eat fish.'

b. *yigən* *və-kəna-XXXX*
dream see-FUT-
'She will have (lit. see) a dream.'

c. ***na:gw*** *vya-wuta-tu-XXXX*
sago.palm hit-break-many-
'She broke all the (branches) of the sago palms.'

d. ***bəgam*** *ku-sada-k-XXXX*
bag.SG.F.LOC put-down-FUT-
'She will put (the purse) inside the bag.'

e. ***brəkədə*** *ñaj* *kəda* *wa-XXXX*
3DU.OBL paternal.uncle PROX.DEM say-
'This paternal uncle said to them.'

LANGUAGE PROFILE 11

African–American English

11.1 Introduction

The lyrics of Beyoncé. The voice of actor James Earl Jones. The rhetoric of Martin Luther King, Jr. The poetry of Toni Morrison. The speeches of Sojourner Truth. In each of these spoken and written texts, we can see and hear particular linguistic features that characterize the variety of English used by people of the **African Diaspora**. This **linguistic variety**, or **dialect**, which most linguists today call **African–American English**, is widely regarded as the most researched of all varieties of English.

African–American English has been called by many names, including but not limited to: African–American Language, African–American Vernacular English, Black English, and Ebonics. African–American English patterns have been called "Urban English" (especially in the US North and Northeast) and "Rural English" (especially in the US South). Some terms for the variety are more academic, while others are used in everyday settings. Some are current, and some have fallen out of favor. The sheer variety of the terms illustrates the impossibility of attempting to put one name and one face on American people of African heritage.

STOP AND REFLECT LP11.1 **WHAT'S IN A NAME?**

Consider the many terms that have been used to refer to the linguistic patterns of Americans of African descent. Which terms have you heard? How do they reflect the historical and cultural context in which they were used? Do you think the term "African–American English" will still be used in the future, and if not, why? Consider such factors as marriage and childrearing across racial/ethnic groups, immigration, and the politics of identity. What other terms do you think might develop instead, and why? If you are from a country other than the United States, what names have been given to historically stigmatized groups in that country? How do such questions apply?

11.1.1 Who Speaks African–American English?

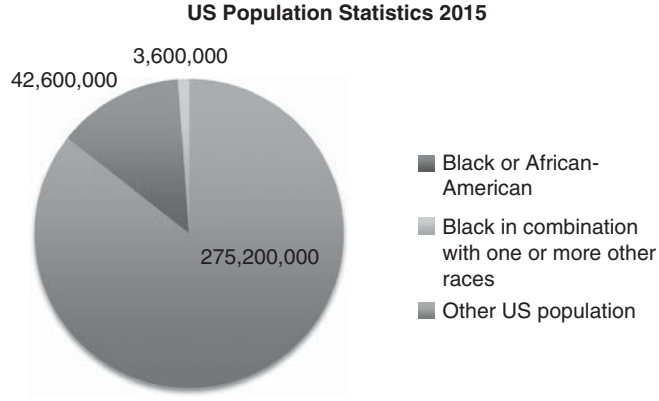
According to the US Census, there are over 45 million people who identify as being of African–American descent in the United States, but the number of speakers of African–American English is not as easy to calculate (see Textbox LP11.1). In some regions of the United States, the linguistic patterns of African–American speakers overlap with the language patterns of other ethnic/cultural groups who live in the same area. Because African–American English

SIDEBAR LP11.1
The online resources for this language profile include a video recording with transcription and a guide to the rich online resources on African–American English.

is predominantly, but not exclusively, spoken by African–Americans, ***the total number of people who use features of African–American English may be greater than the number of people who identify as African–American. In addition, not all African–Americans use features or identify as speakers of this variety***. In general, in this language profile we use the term "African–American English" to refer to varieties of English used in places where African–Americans live or historically have lived, while acknowledging the variability and ambiguity that accompany any attempt to define how language is used along cultural or ethnic lines.

TEXTBOX LP11.1 **THE BLACK POPULATION IN THE UNITED STATES**

According to the US Census Bureau, as of July 1, 2015, of the total US population of 321.4 million, 42.6 million people (13%) identified as Black or African–American. In addition, 3.6 million people (1%) reported as Black in combination with one or more other races. Together, these groups comprise the Black alone-or-in-combination population, totaling 46.2 million people. The Black alone-or-in-combination population grew by 15% from 2000 to 2010 and by 7% from 2010 to 2015; in addition, the Black-alone population grew by 12% from 2000 to 2010 and by 6% from 2010 to 2015. These growth rates are higher than the growth rates for the total US population during those same time periods. In 2015, 55% of the Black population lived in the US South, and over 100 Southern US counties had a Black population of 50% or higher.



In 1619, enslaved Africans first arrived in the United States, landing near Hampton, Virginia, with greater numbers subsequently arriving in waves as part of the global slave trade. While slavery existed into the Northeast, even into New England, it was concentrated in the US South, where the language patterns of the Africans who worked as forced laborers came into contact with those of local Whites. During this time period, African–American English was, for the most part, localized to the South. Once slavery had been abolished and Jim Crow laws dismantled, however, African–Americans began to leave the region.

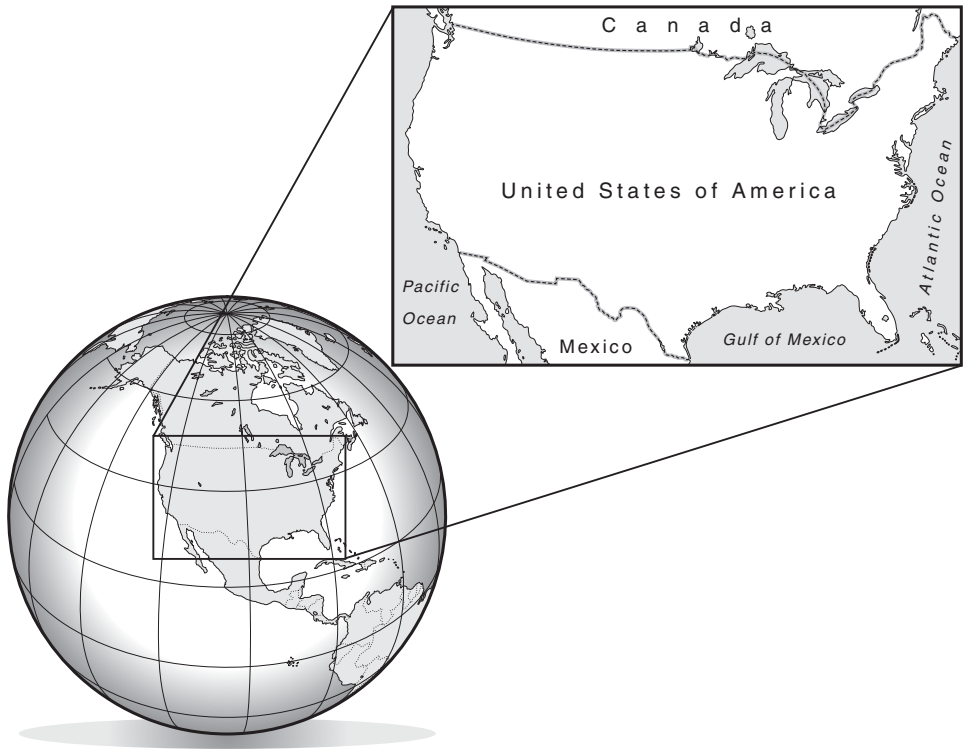


Figure LP11.1 Map of the primary areas where African–American English is spoken.

SIDEBAR LP11.2

The Trans-Atlantic Slave Trade Database project provides information on the almost 36,000 slaving voyages that forcibly transported over 10 million Africans to the Americas from the sixteenth to the nineteenth century. The website enables users to search the database for specific voyages and examine data about the slave trade; it also includes a searchable African Names Database.
http://slavevoyages.org/

SIDEBAR LP11.3

Graphics provided by the US Census Bureau reveal the population shifts brought about by the Great Migration in the United States, from around 1910 to 1970, in two distinct waves.
www.census.gov/dataviz/visualizations/020/

Throughout the mid-1900s, the population shift known as the Great Migration – in which African–Americans moved out of the South, generally to urban areas such as Philadelphia and Detroit – had a linguistic effect. Owing to patterns of residential segregation, African–Americans tended to move to neighborhoods where other African–Americans lived (Massey and Denton 1993). Thus, the largely Southern-inflected patterns of African–American English began to merge with Northern speech patterns and evolved into a contemporary variety of African–American English. Over time, this variety spread from the cities of the Northeast to the West. It also spread back into the South, as some African–Americans who had moved away kept in contact with their Southern family members or eventually returned to live there again.

Today, African–American English is widely spoken across the United States, from large cities to rural locales. Owing to a continuing legacy of residential segregation as well as cultural affiliation, speakers of African–American English still

tend to live near and associate with others who speak this variety (Labov 2008). At the same time, because African–American English has always been in contact with other varieties of English, it shares many linguistic features with these varieties, even as it has its own distinguishing characteristics. In recent decades, as greater numbers of immigrants of Caribbean and African heritage have settled in the United States, definitions of African–American English are expanding to account for the influence of these speakers as they come into contact with African–Americans, acquire some of their language patterns, and contribute their own to the mix.

STOP AND REFLECT LP11.2 **THE BLACK POPULATION: 2010**

In 2010, the US Census Bureau released a brief, *The Black Population: 2010*, which "provides a portrait of the Black population in the United States." Review the data in this brief and consider how the data may change by the 2020 US Census.

www.census.gov/prod/cen2010/briefs/c2010br-06.pdf

11.2 African–Americans and the African and Creole Linguistic Diaspora

Within sociocultural linguistics, there are two main theories on the development of African–American English in the United States (Wolfram and Thomas 2002). The first theory, called the **Anglicist hypothesis**, states that African–American English is primarily a product of the acquisition of English by Africans and African–Americans. People who adhere to the Anglicist hypothesis maintain that African–American English is a variety of English, rather than one with origins in a distinct creole language.

SIDEBAR LP11.4

For more on Jamaican English, see Exercise 8 in Chapter 13, which is based on a rap by a UK-based Jamaican performance artist.

SIDEBAR LP11.5

The YouTube video entitled "Caroline speaking Gullah and English," sponsored by WikiTongues, features Caroline, a native speaker of Gullah and English, discussing features of Gullah and differences between Gullah and English.

The second theory, called the **Creolist hypothesis**, states that **creole** languages were formed when enslaved Africans speaking different languages came into contact. In areas where speakers were more isolated, creole languages such as Gullah, Jamaican English, and Patois were established and still survive. (For more on creoles and varieties of English influenced by African Languages, see Textbox LP11.2.) In areas where speakers' isolation was not as severe, the Creolist hypothesis states, English more heavily influenced the creole languages that formed, which resulted in the development of varieties such as African–American English.

TEXTBOX LP11.2 **AFRICAN-INFLUENCED ENGLISH AND CREOLES AROUND THE WORLD**

African languages that have been in contact with English and other languages have created new languages and new varieties of English. Examples include but are not limited to:

British English
Bahamian Creole
Ghanaian English
Guyanese Creole
Gullah
Haitian Creole
Liberian Kreyol
Nigerian Creole
Black South African English
Belizean Kriol
Jamaican Creole and Jamaican Patios

TEXTBOX LP11.2 (*cont.*)

For example, Gullah is a creole spoken by about 250,000 Gullah people of African descent who live in or have ties to the coasts and Sea Islands of South Carolina and Georgia. Because of the isolated nature of the places where Gullah people live, many aspects of African language and culture have been preserved in the language. Gullah is a source of pride for many African–Americans as it demonstrates the linguistic and cultural connections that exist between African–American English and Niger-Congo language systems (Turner 1949). These connections are evident. For example, the documentary "The Language You Cry In: The Story of a Mende Song" shows the migration of a funeral song from Sierra Leone to speakers of the Gullah language.

Opinions will vary as to whether these are varieties or languages, which indicates the controversial social and political nature of language contact and language formation. Linguists are working on fuller descriptions of each creole variety, as much of the work so far has focused on the syntactic structures of the languages and varieties. What we do know is that they are not forms of "Broken English" but systematic language patterns with vibrant histories and cultures.

Theories on the origin of African–American English are difficult to verify, however. The brutal nature of slavery and the intentional separation of those who spoke similar African languages, combined with the lack of extensive documentation of spoken and written language patterns from earlier time periods, complicate the task of fully explicating the historical and linguistic record.

Although the question of the true origin of African–American English may never be resolved, other issues hold more immediate and practical importance. For instance, how is African–American English perceived and understood outside of the African–American English-speaking community? What characteristics of this variety are most salient for its speakers? How do professionals and practitioners – particularly those in positions of power such as judges, police officers, and educators – understand African–American English? What are the social implications of perceptions about African–American English for those who speak it? In situations of linguistic bias and discrimination, how can mechanisms to achieve equity be put into place?

SIDEBAR LP11.6
Full discussion of the language change that occurs when speakers of different languages come into contact can be found in Section 13.4, which introduces creoles and the pidgins from which they arise.

11.3 African–American English: A Linguistic Overview

Today, most linguists view African–American English as a variety of English. Other scholars prefer to call it African–American Language, following the notion that the definition of **dialect** versus **language** is blurry, more deeply rooted in the histories of social and cultural power than in linguistic reality. Regardless of the terminology used, linguists agree on three important findings about African–American English. First, it is spoken by millions of people across the United States and other countries. Second, it has roots in African languages. Third, African–American English as a linguistic variety is not substandard English, but rather is a systematic, rule-governed, and patterned system, just as all other languages and varieties are.

SIDEBAR LP11.7
For a discussion of the terms dialect versus language, see Section 1.2.1.

African–American English shares many linguistic features with **Standard** English. Most linguistic work has centered not on these overlaps, however, but on the divergences. At the same time, there are no simple, binary divisions between African–American English and Standard English. It is important to remember that African–American English, like any language system, is complex and inherently variable, with both **inter-speaker variation** and **intra-speaker variation**. The use of African–American English may vary by a range of factors, including age, gender, region, degree of cultural affiliation or separation, and more (Rickford 1999). An individual who speaks both African–American English and Standard English may be considered **bidialectal**; having a wide **linguistic repertoire** can be a valuable sociocultural resource.

Social class and gender are two key social axes of variability in African–American English. Linguists have found that middle-class African–Americans tend to use elements of African–American English to a lesser degree than African–Americans from working-class backgrounds. African–American males (particularly younger working-class males) tend to use features of African–American English more frequently than African–American females, especially stigmatized features (Charity 2005). However, sometimes class- and gender-related linguistic differences recede or disappear as speakers age (Craig and Washington 2002, 2004). For this reason it is important not to assume a fixed linguistic trajectory for any individual.

Much research still needs to be conducted on variation within African–American English. For instance, only limited research has examined what features are used by middle-class African–Americans. Along similar lines, few studies have focused on African–Americans who do *not* use features of African–American English. A still relatively small body of literature has examined the speech of *non*-African–Americans who use features of African–American English. More work is also needed to understand language variation in African–Americans with respect to gender identities and sexual orientation. Finally, linguists are beginning to pay greater attention to how language use varies by factors related to **identity** – for instance, by the growing population of people who identify or are identified as multiracial/multiethnic.

11.3.1 Phonetics and Phonology

The question of whether a person "sounds African–American" or has an "African–American **accent**" relates to the phonetics and phonology of African–American English. Some phonological features of African–American English are shared by other varieties of American English, especially **Southern US English**, while others are more unique to African–American English.

Regarding consonants in African–American English, linguists have robustly studied variation in **consonant clusters**. For almost any speaker of English, complex consonant clusters are frequently reduced: words such as *mists* and *guests* often are pronounced as [mɪs] and [gɛs] rather than [mɪsts] and [gɛsts]. Similar reduction occurs in African–American English, only more frequently and in a wider range of linguistic contexts. For example, *mind* is often pronounced as [maɪn] rather than [maɪnd], *talked* as [tɔk] rather than [tɔkt]. From decades of research, linguists have found that this **sociolinguistic variable**, generally known as consonant cluster reduction or as [t, d] deletion, is regular, patterned, and governed by subtle and complex linguistic rules.

Unique consonant blends are also found in African–American English. For instance, [stɹ] clusters may sometimes be pronounced as [skɹ], as in [skɹiːt] for [stɹiːt] *street* and [skɹeɪt] for [stɹeɪt] *straight*. This consonant feature is also found in the Gullah language. Other consonantal features are discussed in Textbox LP11.3.

TEXTBOX LP11.3 THREE CONSONANTAL FEATURES OF AFRICAN–AMERICAN ENGLISH

Listeners often notice several differences in consonant pronunciations, notably in the word *ask* and in words with /ɹ/ and /θ/. Some, though not all, speakers of African–American English pronounce the word *ask* as [æks] rather than [æsk]. This pronunciation is so commonly noticed that it has become a stereotyped feature of African–American English and is often stigmatized and even mocked. Ironically, the pronunciation of *ask* as [æks] has existed since the eighth century, stemming from variation in the Old English verb *acsian*.

Variation in words with /r/ and /θ/ are also characteristic of African–American English. In this variety, [ɹ] may be absent or nearly absent. For instance, the word *mother* may be pronounced as [mʌðə] rather than [mʌðɹ], *car* as [kɑ] rather than [kɑɹ], and *bird* as [bɜɪd] rather than [bɜ˞d] or [bə˞d]. Some of these correspondences are similar to those found between British and American English, as described in Chapter 2.

Words with /θ/ and /ð/ also may vary in pronunciation. Depending on whether the sound in question is [θ] or [ð], it may be pronounced as [d], [v], [t], or [f] or as a glottal stop, [ʔ]. Words such as *this* [ðɪs] and *them* [ðɛm] may be pronounced as [dɪs] and [dɛm]; *neither* [ˈniːðə˞] and *breathe* [bɹiːð] may be pronounced as [ˈniːvə] and [bɹiːv]; *think* [θɪŋk] and *thanks* [θæŋks] may be pronounced as [tɪŋk] and [tæŋks], and *with* [wɪð] or [wɪθ] may be pronounced as [wɪf], [wɪt], or [wɪʔ]. Similar sound patterns are found in the Gullah language and in the languages of West Africa.

Regarding vowels, there tends to be some overlap between the pronunciations of African–American and Southern White speakers, which reveals the Southern roots of African–American English. For instance, consider the sociolinguistic variable that linguists refer to as the *pin-pen* merger, which refers to the near-identical pronunciation of /ɪ/ and /ɛ/ before nasal consonants for many speakers of Southern English and African–American English. For these speakers, words such as *pin* and *pen* or *windy* and *Wendy* are pronounced in indistinguishable ways. Speakers of African–American English who live outside the US South generally also have Southern-influenced vowel pronunciations and tend not to participate in other vowel patterns that characterize the speech of local Whites, but ongoing research is necessary to fully understand these dynamics.

African–American English also has vowel sounds that are more unique to this variety. For example, the sequence [eɹ] at the end of a syllable in Standard English may be pronounced as [əɹ], e.g., *there* [ðəɹ] and *carry* [ˈkəɹi]. Hip-hop songs containing this **sociolinguistic variant** have helped it gain popularity and spread (Blake et al. 2009).

SIDEBAR LP11.8

"Baldamor, Curry, and Dug: Language Variation, Culture, and Identity among African American Baltimoreans" is a podcast produced by Inte'a DeShields, a fourth-generation African–American Baltimorean and graduate student. The podcast explores three main linguistic features of native Baltimoreans who speak African–American English, including the pronunciation of the sequence [eɹ] at the end of a syllable as [əɹ] and its connection to Baltimore club music. Expert interviews with linguists who study African–American English are incorporated into the discussion. https://baltimorelanguage.com/baldamor-curry-and-dug-podcast/

SIDEBAR LP11.9
For a more detailed discussion of prosody and intonation, refer to Chapter 10.

The sounds of African–American English also involve differences in pitch, tone, rhythm, and volume. Many listeners report that the prosody of a person's voice may mark that speaker as African–American even if their variety otherwise sounds standard (Baugh 2000). Some linguistic research finds that speakers of African–American English are more likely to talk in a lower pitch, have a wider pitch range, and use more falsetto (see, e.g., Cole et al. 2005). Research has also found that younger African–American males may show less variation in **intonation** – for instance, questions are often asked with a more flat, rather than rising, intonation. Listeners accustomed to a different intonational pattern, however, can sometimes misinterpret flat intonation patterns as indications of disinterest, boredom, disrespect, or apathy. Those who may incorrectly assess the speaker as unenergetic or uninterested may then judge the students differently in school. If this occurs in classroom situations, it can lead to African–American English-speaking students being improperly evaluated – academically, socially, and emotionally (Charity 2005). In general, challenges can arise when educators do not recognize or understand the phonological patterns of African–American English; such challenges may include the disproportionate referral of African–American students for speech pathology services (Dandy 1991).

11.3.2 Morphology and Syntax

Linguists have also robustly studied the morphology and syntax of African–American English, which constitute its grammar. For most listeners, the morphological and syntactic features of African–American English are more noticeable and distinct than its phonological features. Though there are many more morphological and syntactic features specific to African–American English than can be described here, this section focuses on three important verb features, each of which demonstrates a distinctive use of tense and aspect in African–American English.

First, we discuss the use of **habitual *be***, also sometimes called invariant *be*, a frequently noticed (and frequently parodied) grammatical feature of African–American English. Speakers of Standard English have no verb-internal means of distinguishing habituality for the verb *to be*. In a sentence that aims to express habituality, such as *My grandparents usually watch TV on Saturday nights*, it is generally marked by using the present tense of *is* or *are* plus an adverb, such as *usually, typically, often*, or *regularly*. In comparison, speakers of African–American English use invariant *be* to convey habituality. Thus, the same example sentence in African–American English would read, *My grandparents be watching TV on Saturday nights*.

SIDEBAR LP11.10
To refresh your memory about **auxiliary verbs**, see Section 5.3.

A second grammatical feature of African–American English that is often noticed (and often marked as an error in students' writing at school) is variation in the use of auxiliary verbs, notably forms of the verb *to be*. African–American English has three choices for how to use these forms: the verb forms may be fully produced, they may be contracted, or they may be absent. Standard English has only two: full or contracted. For example, a Standard English speaker might say, *She is smart* (full) or *She's smart* (contracted). In African–American English, the full and contracted forms are possible,

SIDEBAR LP11.11
In the YouTube clip "Linguists on African–American Language: Lisa Green," Dr. Green discusses the grammatical system of African–American English, focusing on the regularity of speakers' use of zero auxiliary and zero copula.

as well as the third option – absent: *She smart*. One important distinction is that, in African–American English, this type of **zero auxiliary** or **zero copula** can never occur when the subject is *I* or when the sentence is in the past tense. Thus, in African–American English, it is grammatical to say *You running, She running*, and *They running*, but not **I running*. It is grammatical to say *You running today, She running today*, and *They running today* but not **She running yesterday*. Similar use of the auxiliary forms of *to be* can be found in the Gullah languages and in creole languages spoken in Barbados, Guyana, Jamaica, and Trinidad.

A third verb feature unique to African–American English is **stressed *bin*** (pronounced [bɪn] and sometimes called stressed *been*). In this usage, the word *bin* is emphasized in pronunciation and is paired with a main verb in the simple past tense. It indicates that an event has happened in the remote past – that is, a long time prior to the present. For example, a child who speaks African–American English might say to her parent, *I bin finished my lunch*, meaning that the child already finished her lunch a while ago, and perhaps implying that the parent should have already known this information. In comparison, in Standard English, remote past is generally indicated through the use of phrases such as *a long time ago*.

Linguistic evidence reveals that the unique verb forms discussed in this section (as well as other features of African–American English) are regular, patterned, and predictable in how they portray tense, mood, aspect, and meaning. These forms are not haphazard mistakes or linguistic deficiencies, even though they may not always be understood or appreciated by non-African–American English speakers. These particular verb forms and other linguistic features reveal the innovation inherent in this variety; they also often indicate connections between African–American English, African languages, and African-based creole languages.

11.3.3 Lexicon, Discourse, and Representation

Many words have come into other varieties of English through the speech of African–Americans. Words such as *banana, banjo, mumbo jumbo*, and *zombie* have roots in languages brought by enslaved Africans, who also often used exclusive vocabulary and coded words and expressions as a powerful means of resistance. Many words that are no longer thought of as slang, such as *cool*, originated in African–American English. The media has helped African–American English vocabulary spread into the general English lexicon, often by emphasizing words used by young African–American males. Some of these lexical items, such as the *n*-word, have a complicated history and an ever-evolving usage.

SIDEBAR LP11.12
See the related discussion of linguistic borrowing in Section 13.2.

Discourse-level features of African–American English have been well documented. The use of direct commands tends to be more frequent in African–American English. Also, speakers may frequently talk simultaneously, with the overlapping speech often viewed as normal and comfortable and not considered interruption. Storytelling is also a valued skill in African–American English. In African–American English, stories can cover several topics that may be associated, both explicitly and implicitly, in ways that reveal links to West African storytelling traditions (Champion 2003). In this regard, stories told in

SIDEBAR LP11.13

The blog post "The Rap: More Than Just Hip-Hop," in *Word: The Online Journal on African American English*, describes the African–American English tradition of verbal performance known as "the rap," which includes **signifying**. The post deconstructs the social and linguistic context of "the rap," and provides examples from popular culture that illustrate different types of verbal performances.

https://africanamericanenglish.com/2010/04/17/the-rap-more-than-just-hip-hop/

African–American English often have a distinct cultural style that differs from the single topic, linear style that is considered normative in Standard English.

On television, in books, in films, and in music, the public often receives mixed messages about African–American English. Today, through the increasing popularity of hip-hop music and culture, which draws heavily upon African–American culture, aspects of African–American English are widely known – not only across the United States, but around the world. On the one hand, African–American English is often admired as being cool and innovative. On the other hand, a strongly negative **language ideology** often surrounds African–American English and its speakers, as many listeners characterize this variety and those who speak it as being unprofessional, sloppy, or incorrect. Questions of representation, interpretation, and perception raise the related question of who is an authentic speaker of African–American English. Tensions surrounding who has the power to name, label, and portray can arise whenever certain individuals control voice, tone, and point of view. How language and culture are represented, received, and analyzed is always open to debate (see Textbox LP11.4).

TEXTBOX LP11.4 **EYE DIALECT**

The question of how to represent discourse and dialogue in fiction surfaces in many great works of literature, particularly because there is no standardized way to represent spoken language in writing. One common means is to use the technique of **eye dialect**, in which phonological variation is represented with alternative spellings, as in *enuff* for *enough* or *ritin'* for *writing*. American fiction is well known for the use of eye dialect, as seen, for instance, in the plays of Eugene O'Neill and Tennessee Williams, the short stories of Flannery O'Connor, and novels such as *Adventures of Huckleberry Finn, The Color Purple, The Grapes of Wrath*, and *Their Eyes Were Watching God*. There is also a strong tradition of using eye dialect in British literature; a few examples include the novels of Dickens, such as *Bleak House* and *David Copperfield*, George Bernard Shaw's *Pygmalion*, and the "Harry Potter" series.

One benefit of the use of eye dialect is that it immediately announces to the reader the fact that a particular character speaks differently from others. Authors may also use eye dialect to introduce readers to an unfamiliar language variety; for example, when reading *Adventures of Huckleberry Finn*, many students report that they would never have known how Huck and Jim were supposed to sound if Mark Twain had not used eye dialect. When it comes to representing the discourse and dialogue of African–Americans, however, specific cultural and linguistic issues can arise. Consider *To Kill a Mockingbird, Uncle Tom's Cabin*, and the contemporary novel *The Help*, written by White authors. The fact that the language of African–American characters is portrayed using eye dialect, while the speech of White characters is represented with Standard English, has been the subject of much critical analysis. Sometimes, when authors represent the speech of people from a different culture, especially when drawing on limited experience with this group, the use of eye dialect can reflect assumptions and prejudices, rather than representing actual linguistic features. In such circumstances, the use of eye dialect can lead to linguistic stereotyping and caricature of African–Americans. On the other hand, authors such as Zora Neale Hurston have used eye dialect to great acclaim. Many of Hurston's characters talk in ways that mirror the speech of people Hurston grew up with in Alabama and Florida. Other characters represent the people Hurston studied as an ethnographer and folklorist. In her literary works, Hurston made extensive use of eye dialect, and many contemporary scholars have deemed her representation of language to be authentic and impressive.

11.4 Educational Implications for Speakers of African–American English

When students come to school speaking African–American English, they are aware that many of their relatives, friends, and neighbors speak similarly to themselves. They may recognize that African–American English holds deep cultural value within the African–American community. But, given the fact that over 80 percent of educators in the United States are White and female, African–American students also likely realize that many of their teachers and perhaps their peers do not speak African–American English. African–American students may internalize the message that educators expect them to use Standard English or a type of "School English" that may be at odds with their home language and culture.

Identity conflicts can arise when students feel compelled to shed what they perceive to be their authentic speech patterns to succeed in a mainstream climate. Intentional variation between Standard English and African–American English can be a valuable cultural and educational resource. Yet, for some African–American students, attempting to sound like a White speaker may cause a cultural problem, as "acting White" is frequently considered to be a stigmatized behavior within the African–American community. Further, simply using Standard English does not guarantee success for African–Americans: it is still the case that a Standard English–speaking African–American might not get a particular job simply because they are African–American. Thus, identity and race are two very significant social factors, even in cases where linguistic difference may be minimal.

STOP AND REFLECT LP11.3 **PERCEPTIONS OF AFRICAN–AMERICAN ENGLISH BY AFRICAN–AMERICANS**

There is more research about how *non*-African–Americans perceive African–American English than about how African–Americans themselves perceive it. Why do you think this is? If you were to design a study to interview members of the African–American community about how they perceive African–American English, what questions might you ask in an interview? Would you ask about the role of African–American English as a marker of personal identity? Of cultural affiliation? What about its role in education and the workplace? In literature, film, and the media – including social media? Would you ask about issues of bias and prejudice and/or about respect and pride? What other knowledge, tools, or resources might you need to carry out such a study? What specific ethical considerations should you take into account?

As mentioned earlier, differences between African–American English and Standard English can cause challenges for students. First, linguistic bias against African–American English can affect students on a holistic level. Studies have found that, at all levels of education and institutional contexts, listeners tend to favor speakers who sound like themselves and can be biased against those who don't (Lippi-Green 2012). As early as kindergarten, students who come to school speaking in similar ways as their teachers are more likely to get ahead, whereas those who speak differently, particularly African–American students, are more likely to fall behind (Charity et al. 2005). Educators may form negative assumptions about a student's intelligence and ability based simply on how they talk, which can result in lowered expectations, stereotyping, and discrimination. Studies have found that educators tend to rate students who speak African–American English as being overall less intelligent, less

confident, and less likely to succeed than students who speak in a more standardized way (see Charity Hudley and Mallinson 2011). In addition, structural linguistic factors can have an effect. For instance, phonological variation may make it difficult for African–American children to determine what rhymes in Standard English, which may interfere with the acquisition of reading and spelling conventions. Research finds that classwork containing features of African–American English is routinely evaluated lower than otherwise equivalent work written in Standard English, and the use of African–American English may negatively affect students' performance on standardized tests and writing assessments (Charity 2009). The use of African–American English has also been found to contribute to African–American students' disproportionate placement in remedial classes and special education.

At the same time, teacher-training programs that explicitly educate teachers about African–American English have been found to ameliorate bias toward African–American students and reduce the likelihood that students who speak African–American English are unfairly assessed on linguistic grounds. Helping students understand the differences between the norms and conventions of Standard English and those of African–American English, while teaching them to value and respect both varieties, is crucial to their understanding of language and their academic development. Educators and students alike thrive when they have a deeper understanding of linguistic and cultural diversity, and linguists are increasingly engaging in applied endeavors to bring that message into classrooms and schools.

CHAPTER SUMMARY

In this profile, we have given a linguistic overview of African–American English. We have reviewed some of its key phonological, phonetic, morphosyntactic, lexical, and discourse features. In addition, we have discussed theories on its origin and development, examined social and cultural contexts surrounding its use, and explored how language ideologies can play a role in educational settings and other social implications that speakers of African–American English may encounter. Some languages and language varieties are deemed socially prestigious, while others, such as African–American English, are frequently devalued by both speakers of the variety and by others. Our most important linguistic and social point, which we reiterate in this summary, is that there is no inherent linguistic deficiency in African–American English.

Even in the face of potential stigma and stereotypes, bias and discrimination, speakers of African–American English (and any marginalized language or language variety) can still assert their linguistic agency, both subtly and powerfully, by using their own authentic language. Particularly within safe cultural spaces, the use of African–American English can have powerful symbolic and communicative value, signaling in-group status, transmitting particular meaning, and conveying solidarity. Each of us has our own compelling narrative to tell. When we are empowered to engage with and build upon our own voice and the voices of our homes and communities, our language becomes a resource. By recognizing the cultural centrality and significance of African–American English, we highlight this linguistic system as part of a broader conversation about how to honor and cultivate diversity of expression within our multicultural society.

SUGGESTIONS FOR FURTHER READING

Alim, **H. Samy**, **John R. Rickford**, and **Arnetha S. Ball** (eds.). 2017. *Raciolinguistics: How language shapes our ideas about race*. New York: Oxford University Press.

This three-part volume contains eighteen chapters that discuss the interrelated nature of the relationship between language, race, and ethnicity in the United States and globally.

Green, **Lisa J.** 2002. *African American English: A linguistic introduction*. New York: Cambridge University Press.

A comprehensive investigation of African–American English as a linguistic system, with attention also paid to the role and representations of African–American English in literature, media, and education.

Labov, **William**. 1973. *Language in the inner city: Studies in the Black English vernacular*. Philadelphia: University of Pennsylvania Press.

This foundational study provides extensive documentation of the regular, patterned, and rule-governed nature of African–American English.

Lanehart, **Sonja L.** (ed.). 2015. *The Oxford handbook of African American language*. New York: Oxford University Press.

A seven-part handbook on African–American English, comprehensively reviewing research on its origin and history, variation, structure, acquisition, education, and the social and identity factors surrounding its use.

Rickford, **John**, **Julie Sweetland**, and **Angela Rickford**. 2012. *African American, Creole, and other vernacular Englishes in education: A bibliographic resource*. New York: Routledge.

This volume includes more than 1,600 references to books, articles, dissertations and other works on African–American English, English-based Creoles, Latinx English, Native American English, and other varieties.

EXERCISES

1. **The cultural significance of African–American English**

https://newrepublic.com/article/95923/the-language-must-not-sweat

In an interview for *New Republic* magazine in 1981, author Toni Morrison said, "It is the thing that black people love so much – the saying of words, holding them on the tongue, experimenting with them, playing with them. It's a love, a passion … It's terrible to think that a child with five different present tenses comes to school to be faced with those books that are less than his own language." Read the entirety of the Morrison interview, then read an earlier article by author James Baldwin, written in 1979, "If Black English Isn't a Language, Then Tell Me, What is?".

http://www.nytimes.com/books/98/03/29/specials/baldwin-english.html

   i. Compare and contrast these pieces and identify two or three common themes that appear in each.
   ii. Think about how you would you write a blog post or create a short film about the cultural significance of African–American English for a lay audience. What main themes do you think would be important to include, and how would you communicate these ideas to diverse readers or viewers?

2. **Features of African–American English: Listen and transcribe**

Watch the YouTube video clip, "African–American English in North Carolina," produced by the Language and Life Project under the direction of linguist Walt Wolfram. Choose three of the phonological features of African–American English described in this language profile, listen for them in the video clip, and identify words with those features.

i. Transcribe the words you hear that contain the features. Be sure to provide the time stamp in the video for each word you transcribe and state the name of the feature (e.g., consonant cluster reduction).
ii. Do any of the features seem similar to those you associate with English varieties of the US South? If so, state those features. What explanation might you give for these similarities?

3. **Verb tenses in African–American English**

http://discovermagazine.com/1997/dec/suiteforebonyand1292

Linguist John R. Rickford wrote about Toni Morrison's 1981 interview in his (1997) article "Suite for Ebony and Phonics." As he pointed out, "When Toni Morrison referred to the five present tenses of Ebonics, she probably had usages like these – each one different from Standard English – in mind":

i. *He runnin*. (He is running.)
ii. *He be runnin*. (He is usually running.)
iii. *He be steady runnin*. (He is usually running in an intensive, sustained manner.)
iv. *He bin runnin*. (He has been running.)
v. *He BIN runnin*. (He has been running for a long time and still is.)

Although all five of these sentences are in the present tense, they differ in their temporal consistency or **aspect**.

SIDEBAR LP11.14
A discussion of aspect, including different examples of aspect in Standard English (e.g., perfective, imperfective, progressive, habitual), can be found in the Manange Language Profile, Textbox LP3.8.

i. Drawing on this language profile and on your own research, propose linguistic terms for the aspects in the five examples provided by John Rickford.
ii. Which examples have habitual *be*? Which have copula absence? Which have stressed *bin*?
iii. Describe habitual *be*, copula absence, and stressed *bin* in linguistic terms, stating both their grammatical properties and their meanings.
iv. Find examples of each of these structures in a novel, poem, or song lyrics written by an African–American author or artist. Be sure to state the title of the work, author, citation, and location of the example within the work (e.g., p. 142, line 4, or second stanza).

4. **Analyzing African–American English in literature**

Select two works of American literature that include portrayals of African–American English – one written by a White author (such as *Uncle Tom's Cabin, The Adventures of Huckleberry Finn, To Kill a Mockingbird*) and one written by an African–American author (such as *Beloved, Their Eyes Were Watching God*, or the poetry of Paul Laurence Dunbar or Alice Walker) – and compare and contrast the use of African–American English found in the text and/or in the dialogue. What linguistic features can you discover? Are there any differences in representation of African–American English according to author or the genre of the text? Is eye dialect used? How do you interpret your findings?

5. **A focus on education**

Many of the challenges in the assessment of children who speak African–American English are a result of teachers' lack of awareness of linguistic and cultural differences. Conventional testing situations have been shown to cause African–American (as well as other) children to become hesitant and taciturn because of the way that fill-in-the-blank and other test items often ask for answers that are not part of AAE. Download a copy of the DIBELS (Dynamic Indicators of Basic Early Literacy Skills) *Oral Reading Fluency Progress Monitoring First Grade Student Materials* booklet (https://dibels.uoregon.edu/docs/materials/hifi_DORF_G1-6_PM_6th_Ed.pdf). Based on your knowledge of African–American English, assess which characteristics of the test passages might be biased against speakers of African–American English. Also note which items you are unsure about and indicate what your ambiguity stems from. Finally, consider the fact that DIBELS materials are also provided in Spanish. What may be some implications for speakers of language varieties such as African–American English?

LANGUAGE PROFILE 12

Indonesian

12.1 Introduction

12.1.1 Location and History

The population of the Republic of Indonesia is historically, culturally, ethnically, and linguistically diverse. With more than 240 million people, present-day Indonesia boasts the distinction of being the fourth most populated nation in the world, after China, India, and the United States. Its heterogeneous population consists of hundreds of native ethnic groups, who are estimated currently to speak at least 300 distinct languages. The creation of the Republic of Indonesia involved a host of complex sociopolitical factors, one of the most important of which has been the development, standardization, and promotion of Indonesian as the official, national language of unification (see Textbox LP12.1 on the language's name).

The Republic of Indonesia is geographically located within the largest archipelago on Earth, consisting of more than 17,000 equatorial islands, only about one-third of which are inhabited. Indonesia is located between mainland Southeast Asia and Australia and provides a crucial seafaring link between the Indian and Pacific oceans. Because of its strategic location, the archipelago has been characterized by extensive trade, colonization, and contact, which has led to a rich and diverse cultural history. The first inhabitants of the archipelago were Melanesians, followed by a migration of Austronesian people, the earliest evidence of which dates back to around 2000 BCE. The next millennia saw the flourishing of various Hindu kingdoms, Buddhist kingdoms, alliances between islands, and Sultanates. Between the thirteenth and sixteenth centuries, the population gradually began to convert to Islam, and, outside of Bali, which is still predominantly Hindu, Islam is now the majority religion. In the early sixteenth century, the Portuguese colonized parts of the archipelago, known popularly in those times as the "Spice Islands." The Dutch colonized much of the region beginning in the early seventeenth century and continued to occupy and govern the islands until shortly after Indonesia declared independence on August 17, 1945, and began promoting Indonesian as the official, national language.

TEXTBOX LP12.1 **WHAT TO CALL LANGUAGES**

An **autoglossonym** is a linguistic term meaning "the name of a language in that language" (lit. self-tongue-name). For example, *Deutsch* is the autoglossonym of the language that English speakers call German, *español* is the autoglossonym for the language known in English as Spanish, and so on. Indonesian speakers call their own language *bahasa Indonesia* (lit. language of Indonesia). Many foreigners mistakenly refer to Indonesian simply as "Bahasa," as in: "Oh, I learned a little Bahasa when I went surfing in Bali." However, the word *bahasa* is a common noun that simply means 'language,' originating from the Sanskrit word *bhaṣa*. It is used productively in Indonesian to derive names for all languages, e.g., *bahasa Jepang* (lit. language of Japan) 'Japanese,' *bahasa Perancis* (lit. language of France) 'French,' *bahasa Jawa* (lit. language of Java) 'Javanese,' *bahasa Bali* (lit. language of Bali) 'Balinese,' *bahasa Inggris* (lit. language of England) 'English,' and so forth. A foreigner who refers to Indonesian as "Bahasa" is misanalyzing the autoglossonym.

When writing about the Indonesian language in an English context, it is generally not appropriate to refer to it as *bahasa Indonesia*. Just as this textbook refers to other major world languages using English names such as German or Spanish (rather than the autoglossonyms *Deutsch* or *español)*, I will consistently use the English name Indonesian throughout this profile. However, especially for speakers of endangered and minority languages, use of an autoglossonym can be seen as a sign of respect and solidarity – and it is always best for field linguists to be sensitive to the desire of communities of speakers, and to refer to languages by the names which its speakers prefer to have used in a particular context.

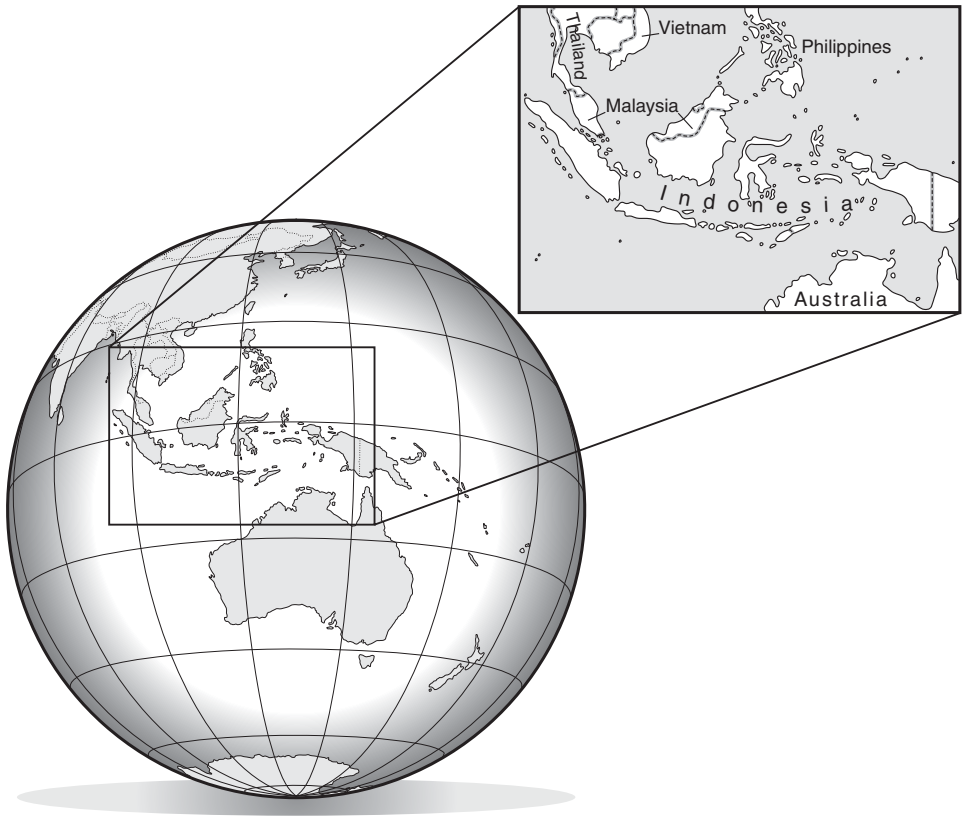


Figure LP12.1 Map showing the location of the Indonesian archipelago

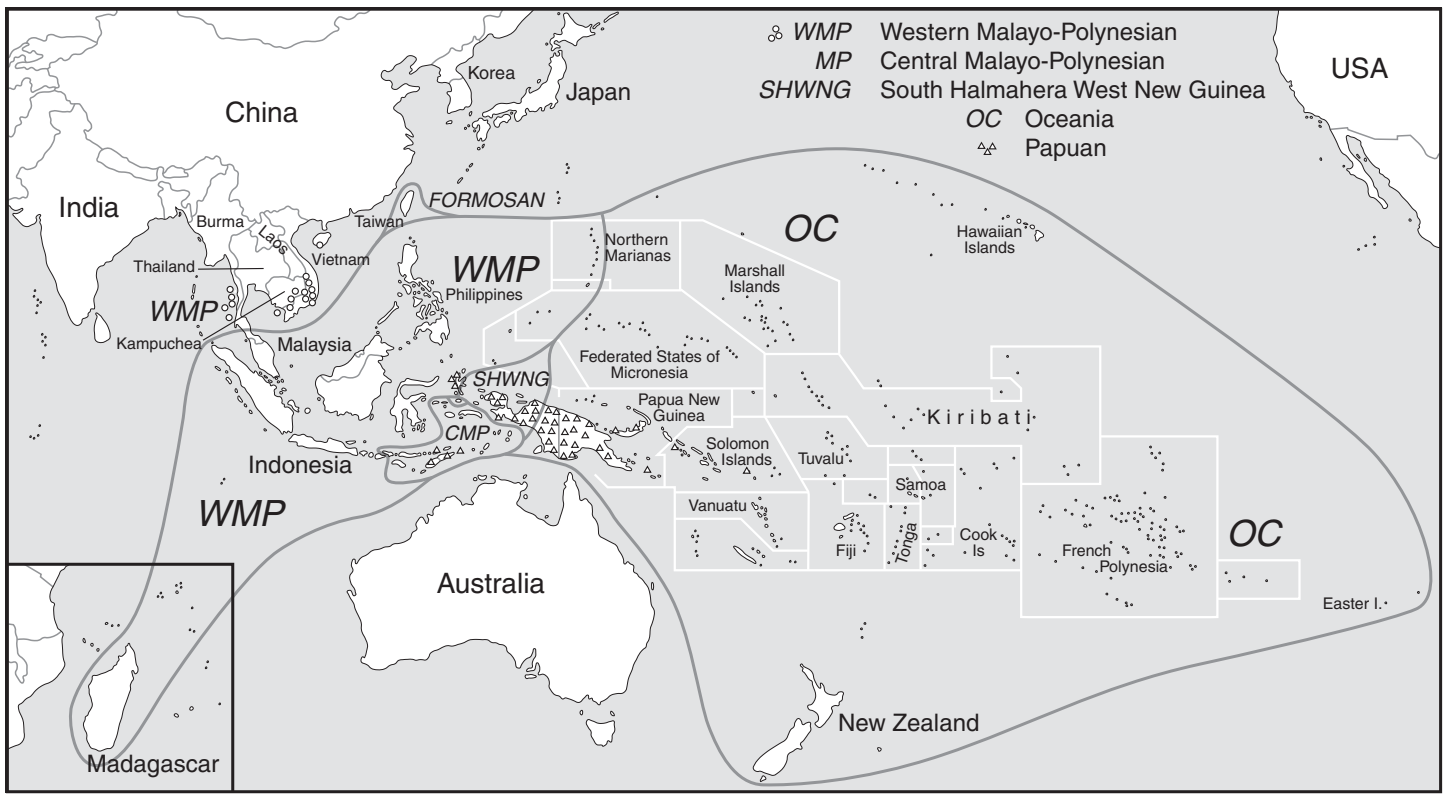


Figure LP12.2 Map of the Austronesian language area

12.1.2 Genetic Affiliation

Indonesian is a member of the Western Malayo-Polynesian branch of the Austronesian language family. The Austronesian family is the largest language family in the world, including approximately 1,300 languages – nearly 20 percent of all languages on earth. Austronesian languages are widely spoken along a 10,000 mile geographic range from Easter Island to Madagascar. Indonesian is a variety of Malay, and is, to a large extent, mutually intelligible with the varieties of Malay spoken in Malaysia, Brunei Darussalam, and Singapore. The development and standardization of formal Indonesian, used in education, the media, and in public official settings, was achieved primarily through government-sponsored **language planning**, an issue to which we will return in Section LP12.4 of this profile. Alongside Indonesian, numerous local and colloquial Malay varieties are also spoken, as are numerous local languages.

SIDEBAR LP12.1
Because Indonesian is a major national language, there are many online resources available on many sites. The *How Languages Work* website provides a document with recommendations and links to explore these resources.

12.2 Speech Community and Viability

Unlike many of the other languages profiled in this volume, Indonesian is quite robust, with approximately 250 million speakers worldwide, including an estimated 17 million people classified as native speakers. Recent estimates of the literacy rate in Indonesia claim that upwards of 90 percent of the population can read Indonesian. The language serves as the medium of instruction for most education and is the primary language in broadcast and print media. Many Indonesians speak a local language as well: the three most widely spoken are Javanese, Sundanese, and Madurese. As the urban populations of Indonesia increase, and as people of different linguistic backgrounds move to the cities and intermarry – which generally results in their children growing up speaking Indonesian at home – the number of people who are competent in formal written Indonesian, and the number of those who speak a colloquial variety of Indonesian in their daily lives, will continue to increase even further. While this is a boon for the status and use of Indonesian, it has the unfortunate side effect that many local languages are declining, and some are disappearing altogether; much of the population has shifted to Indonesian as a language of economic opportunity and wider communication. Linguists, both in Indonesia and abroad, are concerned about this situation and are working with members of smaller speech communities to document and describe many of these local languages.

12.3 Structural Overview

The purpose of this section is to offer a brief glimpse of Indonesian phonology, morphology, and syntax, in order to give a general flavor of its structure. It will focus on features that may be of particular interest to English-speaking students with no prior exposure to Indonesian.

Figure LP12.3 A documentation training workshop in Maluku (photo courtesy Michael Ewing)

12.3.1 Phonology

The pronunciation of Indonesian differs slightly from region to region, and varies considerably based on whether the speaker is using formal or colloquial varieties. From a typological perspective, and from the perspective of English-speaking learners of Indonesian, there is nothing terribly "exotic" or "difficult" about pronouncing Indonesian. Like English, there is no phonemic tone, and vowel length is not contrastive.

Owing primarily to the history of Portuguese and Dutch colonization, Indonesian is written in the Latin alphabet, and there is a high letter-to-phoneme correspondence. In other words, with only a few exceptions, non-speakers of Indonesian can pronounce it fairly accurately simply by knowing which letter represents which phoneme. Most letters have a pronunciation fairly close to the corresponding IPA symbols. The following are a few exceptions: the letters *c* and *j* represent the voiceless and voiced alveo-palatal affricates [ʧ] and [ʤ] respectively, e.g., *baca* [baʧa] 'read' and *meja* [meʤa] 'table'; the letter *y* is used for the voiced palatal approximant [j], e.g., *yakin* [jakin] 'sure'; the letter *r* represents the alveolar tap [ɾ], which for some speakers and in some words may be realized as a trill [r], e.g., *baru* [baru] 'new'; *rata-rata* [ratarata] 'on average'; and the letter *e* is pronounced either as [e] or [ə], e.g., *bebek* [bebeʔ] 'duck,' *selesai* [sələsai] 'finished,' *jendela* [ʤəndela] 'window.'

Syllable-final [p] and [t] are unreleased, e.g., *map* [mapˀ] 'folder', and syllable-final [k] is pronounced as a glottal stop [ʔ],

SIDEBAR LP12.2

The website *Omniglot* provides an audio file of one Indonesian speaker reciting the Indonesian alphabet and another Indonesian speaker reading a short passage in Indonesian, which is accompanied by an English translation.

www.omniglot.com

e.g., *baik* [baiʔ] 'good,' *pak* [paʔ] 'sir/Mr.' Moreover, sequences of two identical vowels are usually broken up by the insertion of a glottal stop, e.g., *maaf* [maʔaf] 'pardon/excuse me,' *saat* [saʔat̚] 'moment.' Primary stress generally falls on the penultimate (next-to-last) syllable – although there are some exceptions.

Three aspects of phonotactics may strike English speakers as both interesting and tricky: (1) syllables may begin with [ŋ], e.g., *ngeri* [ŋəɾi] 'scary'; (2) syllable onsets may consist of a sequence of a nasal followed by a voiced stop, e.g., *mbak* [mbaʔ] 'sister (term of address),' *ndak* [ndaʔ] or *nggak* [ŋgaʔ] 'no/not' (colloquial); and (3) syllables may end with [h], e.g., *rumah* [ɾumah] 'house,' *contoh* [tʃontoh] 'example,' *jatuh* [dʒatuh] 'to fall.'

12.3.2 Morphology

Indonesian is primarily an **isolating** language, with very little in the way of inflectional morphology. There is no verbal morphology for tense, aspect, or mood, and no noun morphology for case, gender, or number. This has led to a common misconception about Indonesian that it is a "simplified" language that is particularly easy to learn – a false belief that James Sneddon, a noted scholar of Indonesian, refers to as the "myth of simplicity" (Sneddon 2003: 14–17). Indonesian makes productive use of reduplication, and has morphology for voice (see below), as well as derivational morphology for nominalization and other processes. For example, among its many functions, the suffix *-an* may be used to derive nouns from (some) verbs: e.g., *makan* 'eat' > *makanan* 'food'; *minum* 'drink (v.)' > *minuman* 'drink (n.)'; *baca* 'read' > *bacaan* 'reading material.'

Reduplication is a word-formation process found in many languages of the world (see Textbox LP12.2). In Indonesian reduplication is quite frequent, highly productive, and has various meanings. Some words consist of a lexicalized reduplicated form – one that cannot be further broken down into parts. For example, *labah-labah* is the word for 'spider,' and the form ***labah** does not exist singly on its own to derive this word. (A roughly analogous example from English is the word *dodo*, as in dodo bird, which is not derived from the stem [do].) Other examples include *kupu-kupu* 'butterfly,' *kura-kura* 'turtle,' *pura-pura* 'pretend,' and *tiba-tiba* 'suddenly' (although the verb *tiba* means 'arrive'). In current Indonesian orthography, reduplication is written out in full, with a hyphen between the reduplicated elements (e.g., *labah-labah* 'spider'). In older orthographies, and currently in online communication such as internet chat and text messages, reduplication is often written using the digit "2" to represent the reduplicated element (e.g., *labah2* 'spider'). Full reduplication of a noun stem indicates something like a distributed plural – an uncounted group of objects, e.g., *bunga* 'flower' > *bunga-bunga* '(lots of) flowers.' A reduplicated verb stem tends to indicate repeated or non-directed action, e.g., *jalan* 'walk' > *jalan-jalan* 'stroll; go for a walk.' When combined with other derivational morphology, reduplication can have a number of idiomatic meanings. For example, reduplicating a noun stem and adding the *-an* nominalizing suffix (mentioned above) indicates that the noun is a toy: *rumah* 'house' > *rumah-rumahan* 'toy house, dollhouse'; *tikus* 'mouse' > *tikus-tikusan* 'toy mouse'; *ayam* 'chicken' > *ayam-ayaman* 'toy chicken, weather vane'; *mobil* 'car' > *mobil-mobilan* 'toy car.'

TEXTBOX LP12.2 **REDUPLICATION**

Reduplication is a morphological process found in many languages, which creates words by repeating all or part of a stem. In languages that make use of **full reduplication**, the entire stem is repeated, as in the Indonesian examples presented in the main text. Another example of full reduplication comes from Kayardild, a Tangkic language of Australia: *kandu* 'blood' > *kandukandu* 'red.' In languages that employ **partial reduplication**, only a portion of the stem is repeated; examples of partial reduplication from other languages include other Austronesian languages such as Pangasinan from the Philippines, which uses reduplication for plurals: *manók* 'chicken' > *manómanók* 'chickens'; *toó* 'man' > *totoó* 'people.' Some languages have both full and partial reduplication.

Reduplication can convey both lexical and grammatical meaning. Examples of reduplication with lexical meaning include the Indonesian words presented above: *labah-labah* 'spider,' *kupu-kupu* 'butterfly,' *kura-kura* 'turtle,' *pura-pura* 'pretend,' and *tiba-tiba* 'suddenly.' The grammatical meanings encoded by reduplication cross-linguistically include continuous or repeated action (already illustrated above by the Indonesian word *jalan-jalan* 'to stroll; go for a walk'), plurality (similar to the above Indonesian word *bunga-bunga* 'lots of flowers'), and augmentation in size and intensity (e.g., in color or manner of action). Some examples of reduplication from a number of languages follow:

Nez Perce, a Sahaptian language of the Northwestern United States:

té:mul 'hail' > *temulté:mul* 'sleet'

Tigak, an Austronesian language of Papua New Guinea:

giak 'send' > *gigiak* 'messenger'

Choctaw, a Muskogean language of the Southern United States:

tonoli 'to roll' > *tononoli* 'to roll back and forth'

Mokilese, an Austronesian language of Micronesia:

roar 'give a shudder' > *roarroar* 'be shuddering' > *roarroarroar* 'continue to shudder'

12.3.3 Syntax

The order of Indonesian's major sentence constituents is typically SVO (the subject, followed by the verb, followed by the object), although in natural conversation, both subjects and objects are often unexpressed and inferred from context. Within the noun phrase, adjectives, relative clauses, determiners, and quantifiers follow the nouns they modify, while numerals precede them. Indonesian also uses prepositions.

One of the more interesting facts about Indonesian morphosyntax has to do with the marking of voice on verbs (Textbox LP12.3 provides a general overview of voice constructions). In formal Indonesian, transitive verbs take a prefix that marks them as being either **active voice**, where the **agent** (the doer of the action) is the grammatical subject, or **passive voice**, where the **patient** (the undergoer of the action) is the grammatical subject. The Indonesian active-voice prefix (glossed AV) has several allomorphs: *mem-* [məm], *men-* [mən], or *meng-* [məŋ] (see Sidebar LP12.1). The Indonesian passive prefix (glossed PASS) is *di-* [di] with no allomorphs. Consider the simple active sentence in Example (1).

(1)	*Ali*	*mem-beli*	*tiga*	*sepeda*	*baru*	*itu*	*di*	*Jakarta*
	Ali	AV-buy	three	bike	new	DEM	LOC	Jakarta

'Ali bought those three new bicycles in Jakarta.'

SIDEBAR LP12.3

The three forms *mem-* [məm], *men-* [mən], and *meng-* [məŋ] are allomorphs of a single morpheme. Exercise 3 of this language profile explores the rules that condition the appearance of each allomorph.

In Example (1), *Ali* is the agent. The verb *beli* 'buy' is prefixed with *mem-* (active voice), which tells us that the agent (*Ali*) is also the grammatical subject of the sentence. The object noun phrase consists of the head noun *sepeda* 'bicycle' preceded by the numeral *tiga* 'three' and followed by the adjective *baru* 'new' and the demonstrative determiner *itu* 'that/those.' The sentence concludes with the locative prepositional phrase *di Jakarta* 'in Jakarta.' Contrast this with the passive sentence in Example (2).

(2)	*Tiga*	*sepeda*	*baru*	*itu*	*di-beli*	*Ali*	*di*	*Jakarta*
	three	bike	new	DEM	PASS-buy	Ali	LOC	Jakarta

'Those three new bicycles were bought by Ali in Jakarta.'

Here, the prefix *di-* on the verb *beli* 'buy' indicates that the sentence is passive – that the patient ('those three new bicycles') is the grammatical subject.

Indonesian voice and transitivity are far more complex and nuanced than can possibly be illustrated in this language profile. Despite some apparent similarities to English active and passive clauses, these Indonesian constructions actually encompass a broader range of discourse functions and semantic meanings, and there is debate over whether these should even be called 'active' and 'passive' at all. In my other published works on Indonesian, I prefer to use the terms agent-trigger and patient-trigger, respectively, and other Indonesianists prefer the terms agent-focus and patient-focus; this reflects the fact that grammatical categories often work very differently in different languages. Because of their broad range of functions, it is often quite challenging for English speakers to learn to use Indonesian voice categories with native-like fluency and **idiomaticity**. See the Suggestions for Further Reading section for reference grammars that provide a more thorough discussion and additional examples.

TEXTBOX LP12.3 **VOICE CONSTRUCTIONS**

The term **voice** refers to two or more syntactic constructions that provide alternative mappings between arguments and grammatical relations. Section 6.4 briefly discussed active and passive voice in English. Recall that in English the active voice is the neutral construction, prototypically with the agent of a transitive clause as the subject and the patient of a transitive clause as the object:

[*The kids*]	*ate*	[*all the cookies*]
subject agent	transitive verb	object patient

English passive voice differs from the active grammatically in three ways: the verb is intransitive and changes form (occurs with the auxiliary *be* and is in the past participle form); the patient argument is realized as the subject of the intransitive clause; and the agent is either unexpressed or an oblique object of the preposition *by*:

[*All the cookies*]	*were eaten*	(*by* [*the kids*])
subject patient	intransitive verb	(oblique) (agent)

There are other types of voice beyond active and passive that are found in languages of different typological profiles. (On the other hand, many languages don't have voice constructions at all.) The different voice constructions are generally used to move arguments that have important or given referents into the prominent position of subject, or to move unimportant or unknown referents out of the subject position.

12.4 Language Planning

One of the most remarkable aspects of Indonesian has been its ascendance from being a marginal "outside" language, spoken by less than 5 percent of Indonesia's population in 1928, to its adoption as a high-status national language, with over 90 percent literacy among Indonesia's current population. Along with this dramatic increase in use, Indonesian has also attained a symbolic status as a key part of the identity and soul of Indonesia itself – part of being an Indonesian person is speaking the Indonesian language. This has come about through well-organized **language planning**, in conjunction with sociopolitical circumstances that have led Indonesian people to adopt and legitimize it. Language planning refers to the deliberate and systematic development of a language, usually through government-sponsored institutions and policies. It is usually categorized into two types: (1) **corpus planning**, that is, planning the body of the language – its writing system, its vocabulary (usually through publishing an official dictionary), and its grammar – and (2) **status planning**, that is, propagating the language via education and media, shaping public attitudes toward the language, and prescribing its role in society and the domains in which it is used. This section will provide a cursory discussion of the history of Indonesian language planning and will focus on **spelling reform** to illustrate key sociopolitical factors that influence corpus planning. Interested readers should consult sources in the Suggestions for Further Reading section for a more in-depth and thorough discussion than is possible here.

As explained earlier in this profile, the Indonesian archipelago is inhabited by several hundred ethnic groups, who speak an estimated 300 distinct languages. When attempting to bring this diversity together into the new Republic of Indonesia, leaders of the Indonesian independence movement strongly believed that one single language should be chosen to facilitate the unification process and to foster a united "Indonesian" identity. But considerable debate emerged as to which language this should be. In terms of numbers of native speakers, Javanese would have been the clear choice, since the majority of the population lived on Java, and the Javanese were (and still are) the politically dominant and largest ethnic group within Indonesia. However, had Javanese been chosen as the national language, other ethnic groups would have been disadvantaged and felt further isolated, which would likely have undermined the entire unification process itself. Another suggestion was Dutch, which many people viewed as a "modern" language, and which some educated Indonesians could already speak. However, since Indonesia had been a Dutch colony for nearly 400 years, choosing the language of the colonizers, at the same time as fighting for independence from them, would have had clear, negative, symbolic and ideological consequences for the newly independent nation. A third suggestion was English, which was also considered a "modern" world language, and, in the context of Indonesian independence at least, did not have the colonial baggage of Dutch. However, English was seen as too "foreign," had no history of use within Indonesia, and would not have been able to serve the founders' goals of developing a uniquely Indonesian identity.

Ultimately, at a 1928 meeting known as the Second Indonesian Youth Congress, leaders of the Indonesian independence movement passed a resolution calling for the adoption of a variety of Malay to serve as the national language of unification. They named

this language Indonesian. The choice of a variety of Malay was successful for several reasons. First, since less than 5 percent of the Indonesian population were speakers, no single ethnic group was privileged; everyone had to learn it. Secondly, it did not bring with it the ideological baggage of Dutch or other European languages that were associated with colonization and oppression. Thirdly, since Malay is an Austronesian language genetically related to many of the languages of the archipelago, it did not seem as "foreign" as Dutch or English would have been. Finally, this variety of Malay, which was primarily descended from literary Classical Malay, had already been used as an administrative language under the Dutch, and so was already familiar among native educators and government officials.

After independence, government-sponsored agencies oversaw both corpus and status planning, including the creation of new vocabulary to foster the use of Indonesian in modern scientific and technological contexts, publishing an official dictionary and grammar, developing teaching materials, and conducting regular radio and television programs to promote its use. The most recent editions of the official dictionary and grammar are listed in the Suggestions for Further Reading section.

One issue that the Indonesian language planning situation clearly illustrates is that the form and status of a language is intimately bound up with its political, cultural, and social environment. Whether a language thrives (as with Indonesian) or, unfortunately, loses

Figure LP12.4 High school students at an exhibit on biography at a provincial government library in Ambon. The banner reads: "Get to know the biography collection as an expression of the identity and quality of prominent people" (photo courtesy Michael Ewing)

SIDEBAR LP12.4
Chapter 11 explores the way language is shaped by its political, cultural, and social environment; see especially Section 11.2.2.

speakers (as with many indigenous languages of Indonesia and all over the world) strongly depends on macro-level factors such as politics, power, and economics. Indonesian – and other world languages like English, for that matter – owes its status and success not to language-internal or structural factors, but rather to the political forces that shape and promote it at an official level, and to the economic and social factors at the individual level that cause people to adopt or reject it. In the case of Indonesian, these have led to its acceptance and adoption by a culturally, ethnically, and linguistically diverse group of people. Understanding the sociopolitical situation of a language and its speakers is a crucial component of understanding how languages work, and of understanding why some languages may thrive while others may become endangered.

The remainder of this profile presents a case study of Indonesian spelling reform, in order to provide a concrete illustration of how corpus planning works, and to demonstrate a basic linguistic fact about spelling systems more generally – namely, a language's orthography is a social convention that can be changed for political, linguistic, and practical reasons.

12.4.1 Spelling Reform

Nothing typifies prescriptive **language ideologies** better than social attitudes toward spelling. From our earliest schooling, we are taught that there is generally only one "correct" way to spell a word. American schoolchildren tend to have to take weekly spelling tests throughout elementary and middle school, are penalized for not spelling words correctly, and are rewarded for good performance in school-wide and national spelling bee contests. Society tends to sanction misspelling, treating it as a sign of ignorance or lack of intelligence. We often think of a word's spelling as immutable and final. However, linguists recognize that orthography is simply a social convention, and, like all social conventions, can be changed.

SIDEBAR LP12.5
For more discussion of language ideologies, see Chapter 11.

STOP AND REFLECT LP12.1 **WHAT IS YOUR LINGUISTIC LANDSCAPE?**

Public signs with multiple orthographic systems, such as that in Figure LP12.5, form part of the observable linguistic culture of societies, sometimes referred to as "linguistic landscapes" (e.g., Shohamy and Gorter 2009). Consider your own physical environment. What scripts, orthographies, and/or writing systems can be found in your community in public settings? Do the systems vary in terms of content delivered (e.g., graffiti versus advertisements versus government messages)? Do you ever find multiple scripts or orthographic systems for the same language (for example, when Chinese is written with the alphabet-based *pinyin* rather than with characters)? What effect might the script, orthography, and language choice have on the messaging? How do you think the linguistic landscape reflects and shapes the views of your community?

Spelling reform refers to a systematic change in the orthography for a given language. It is an example of language planning, generally taking place in society from the top down; in other words, educational or government institutions design and promote a new orthography for a language, which publishers, print media, and individuals then adopt. Reasons for spelling reform chiefly include ideological goals (to affiliate or disaffiliate with other nations

or political groups who may write the language in a certain way), linguistic or pedagogical principles (to more closely reflect one letter per phoneme in an attempt to make the written language more transparent and easier to learn; see Textbox LP12.4), or practical reasons (to make the language easier to type or print given the current technology). Indonesian spelling reform in the twentieth century reflects all three of these concerns.

Malay has a long written history, with stone inscriptions dating back to the seventh century. The earliest Malay writing system was based on a Pali script (related to the script used for Sanskrit), which was later replaced by the Arabic alphabet. Starting in the Dutch colonial era, local officials began to write Malay using the Latin alphabet, which is the alphabet still used today for writing Indonesian. However, during this period, spelling differed from region to region, was not uniform, and was generally quite idiosyncratic. Then, in 1902, the Dutch education scholar Charles van Ophuijsen published the first standardized national orthography for Indonesian Malay. This orthography was based primarily on the pronunciation of literary Malay found in the Riau-Johor Sultanate (Riau is now a province in Indonesia and Johor is now a state in the present-day Republic of Malaysia) and was based on rules of spelling for the Dutch language. For example, in Dutch, the high back rounded vowel [u] is spelled by the sequence of letters *oe*; and van Ophuijsen prescribed *oe* to spell [u] in Indonesian as well.

Figure LP12.5 Sign at an archeological site in Bali written in Indonesian with Latin script and in Balinese with Balinese script (photo courtesy Michael Ewing)

TEXTBOX LP12.4 **WHY ONE LETTER PER PHONEME?**

We have seen (in Chapter 2) that the use of orthographic representations, or spelling, to represent the sounds of spoken language has many limitations. In English, many written letters can represent more than one possible sound. For example, the English letter "c" can be used to represent two different sounds: [k] as in *cat* and [s] as in *ceiling*. In contrast, the single voiced velar nasal [ŋ] at the end of the word *ring* is represented by a combination of two letters, "ng." In fact, some sounds of English, such as the velar nasal [ŋ], are simply not represented by single letters in the Roman alphabet.

Many people believe the English spelling system may not be ideal for those learning to read and write, and that it may be more efficient if learners had an orthographic system that used one letter per phoneme, i.e., one that used a single written symbol to represent each sound. This is referred to as a 'shallow orthography' and is exemplified by the orthographic systems of languages such as Finnish and Spanish, or by the *hiragana* syllabary in Japanese. Whereas other languages (such as English and French) have greater orthographic depth with complex spelling rules and many irregular forms.

Why don't all writing systems have one letter per phoneme? Orthographic systems tend to be more stable than spoken pronunciations over time. In other words, whereas a language may undergo historical sound changes, the orthography of the language is more likely to stay the same, with the result that the pronunciation begins to stray more and more from the original written representation over time. For example, the letter "r" is preserved in postvocalic environments in written English even in dialects where the corresponding phoneme hasn't been pronounced in that environment for years.

This exemplifies yet another complication that arises from representing spoken language in writing: regional, ethnic, and other socially based dialects of a language often vary widely in pronunciation, and thus adopting a shallow orthography may end up disadvantaging speakers whose spoken variety does not already approximate the standard.

STOP AND REFLECT LP12.2 **LETTERS AND PHONEMES**

Think about other languages (and writing systems) that you are familiar with: to what extent do they approximate one letter per phoneme?

After Indonesian independence, two large-scale spelling reforms took place. The first, in 1947, formally known as *Ejaan Republik* 'Republic spelling,' clearly illustrates the political, linguistic, and practical reasons for spelling reform. One major change was to abandon the use of *oe* to spell [u], instead spelling it simply with the letter *u*. For example, the spelling of the Indonesian word pronounced [buku] 'book' changed from *boekoe* (pre-1947) to *buku* (current spelling); similarly, the spelling of [baru] 'new' changed from *baroe* (pre-1947) to *baru* (current spelling) and [rumah] 'house' from *roemah* (pre-1947) to *rumah*. This spelling reform was both a clear symbolic statement of independence from the Netherlands – no more would Indonesian be bound by the idiosyncratic Dutch spelling of the vowel [u] – and also an attempt to simplify spelling based on the principle of one letter per phoneme. While this spelling change systematically applied to all Indonesian words containing [u], it raised an interesting problem as to what to do about the spellings of names. Some people whose name contained this vowel chose not to change the spelling of their name, while others did. The print media sometimes kept the old spelling for the names of famous people, and sometimes adopted the new spelling. For example, sometimes the names of Indonesia's first

two presidents are written *Soekarno* and *Soeharto* respectively, following the old spelling, while other times they appear in print as *Sukarno* and *Suharto*, following the new system.

A second change brought about by the 1947 spelling reform was the abandonment of the letter *é* to write the vowel [e]. Prior to 1947, *é* was used for [e] and *e* was used for [ə]. After 1947, both vowels are now written with the letter *e*. For example, [ʤəndela] 'window' is currently spelled *jendela*, where the *e* in the first syllable represents [ə] and the *e* in the second syllable represents [e]. The main reason for the loss of the letter *é* was primarily due to a desire to make the orthography easier to type using standard typewriters, and the fact that this was the only letter in Indonesian written with an accent mark.

The second major spelling reform, known as *Ejaan yang Disempurnakan* 'perfected spelling,' took place in 1972. This was a collaborative effort between Indonesia and Malaysia, to unify the orthographies of both nations. On a political level, this reflected closer international relations between these two nations; on a linguistic level, unifying the spelling systems meant that literature published in Malaysia could easily be read in Indonesia, and vice versa. From the Indonesian perspective, major spelling changes took place at the level of several consonants. For example, the pre-1972 spelling of [ʤ] and [tʃ] were *dj* and *tj* respectively, which were then changed to *j* and *c*. Prior to 1972, the capital of Indonesia [ʤakarta] was spelled *Djakarta*, and after 1972, the official spelling changed to *Jakarta*. Pre-1972 *medja* 'table' and *batja* 'read' became *meja* and *baca*. Other consonant spelling changes included changing the spelling of [j] from *j* to *y*, and changing the spelling of [x] (a voiceless velar fricative) from *ch* to *kh*.

CHAPTER SUMMARY

Indonesian is one of the world's major languages. It has an unusual history directly dependent on purposeful language planning, which has been remarkably successful. Indonesian spelling reform provides a case study of corpus planning at work, as large-scale, systematic changes were implemented that affect the writing system for the entire language. Note that these changes apply to all Indonesian words containing the given letters. For this reason, spelling reform is often expensive, as it requires the printing of new signs, new maps, new dictionaries, and new textbooks, etc. Indonesian spelling reform clearly illustrates that a language's orthography is a social convention and can change in response to political, linguistic, practical, and ideological concerns.

TEXTBOX LP12.5

Convention	Meaning	Convention	Meaning
AV	active voice	LOC	locative
DEM	demonstrative	PASS	passive

SUGGESTIONS FOR FURTHER READING

Alwi, **Hasan**, **Soenjono Dardjowidjojo**, **Hans Lapoliwa**, and **Anton Moeliono**. 1998. *Tata Bahasa Baku Bahasa Indonesia*, 3rd edn. Jakarta: Balai Pustaka.

Departemen Pendidikan Nasional. 2008. *Kamus Besar Bahasa Indonesia*, 4th edn. Jakarta: Gramedia Pustaka Utama.

These two texts are the official grammar and dictionary of formal Indonesian.

Ewing, **Michael**. 2005. "Colloquial Indonesian." In **Adelaar**, **A.** and **N. Himmelmann** (eds.), *The Austronesian languages of Asia and Madagascar*. London: Routledge. 227–258.

Sneddon, **James**. 2006. *Colloquial Jakartan Indonesian*. Pacific Linguistics, Research School of Pacific and Asian Studies. Canberra: The Australian National University.

Both of these texts provide an overview of the grammar of colloquial Indonesian.

Rafferty, **Ellen**, **Molly Burns**, and **Shintia Argazali-Thomas**. 2014. *Indonesian Grammar in Context: Asyik Berbahasa Indonesia*, Vols. I–III. Honolulu: University of Hawai'i Press.

Rafferty, **Ellen**, **Erlin Barnard**, and **Lucy Suharni**. 2014. *Let's Speak Indonesian: Ayo Berbahasa Indonesia*, Vols. I–II. Honolulu: University of Hawai'i Press.

These textbooks offer a thorough approach to Indonesian through the intermediate level. Accompanying audio files and more information about this series are available online at: www.indonesiantextbooks.wisc.edu/

Sebba, **Mark**. 2007. *Spelling and society: The culture and politics of orthography around the world*. New York: Cambridge University Press.

A comprehensive study of the social, cultural, and political aspects of orthography, as well as the history and debate surrounding spelling reform in various countries (including a section on Indonesia and Malaysia).

Sneddon, **James**. 2003. *The Indonesian language: Its history and role in modern society*. Sydney: University of New South Wales Press.

A thorough overview of the history of Indonesian, including discussion of language planning.

Sneddon, **James**, **Alexander Adelaar**, **Dwi Noverini Djenar**, and **Michael C. Ewing**. 2010. *Indonesian: A comprehensive grammar*, 2nd edn. London: Routledge.

A comprehensive and user-friendly grammar of formal Indonesian written in English.

Soderberg, **Craig**, and **Kenneth Olson**. 2008. "Illustrations of the IPA: Indonesian." *Journal of the International Phonetic Association* **38**: 209–213.

A detailed phonetic illustration of Indonesian as spoken by one person from Jakarta.

EXERCISES

1. **Spelling in computer-mediated communication**
This profile described spelling reform as a top-down process, in which educational or government institutions systematically design and promote a new orthography for a language. Another aspect related to spelling change, not discussed in this chapter, comes about through innovative spellings originating in certain types of media and/or socially defined groups of people. One aspect of contemporary society stereotypically associated with spelling innovations is computer-mediated communication (CMC), such as text messages and chats. Find fifteen examples of recent CMC that you have sent or received. In this body of data, identify each instance where the spelling is different from standard written English. Succinctly

characterize the differences between the CMC spelling and the standard spelling. What generalizations can you make about the differences? What do you think motivates these innovative spellings? In your answer, consider the medium of communication, as well as the social group(s) you most closely identify with.

2. Spelling reform

In this profile, we saw that Indonesian underwent two major spelling reforms during the twentieth century, and we reviewed the reasons for some of these changes. For this exercise, consider the situation of English orthography. Write an essay in which you propose a large-scale spelling reform for English. What would you change from the current orthography, and why would you change it? Conclude your essay by carefully discussing both the advantages and the disadvantages of implementing such a proposal for English on an international scale.

SIDEBAR LP12.6

Note: For this exercise, you may want to review the discussion of natural classes (Section 3.1), allomorphy (Section 3.2.6), and phonological rule-writing (Section 3.2.3).

3. Morphophonemics

In Section LP12.3.3 of this profile, we saw that a verb stem often takes a prefix to mark it as active voice. The active voice prefix has several allomorphs. Examine the following list of Indonesian verb stems and their active forms, written in Indonesian orthography, and answer the questions that follow. (The sequence *ng* represents IPA [ŋ], *c* is IPA [tʃ], *j* is [ʤ], and *e* in the prefix is always [ə])

	Stem	Active	Gloss
a.	*ajar*	*mengajar*	'teach'
b.	*antar*	*mengantar*	'deliver (something)'
c.	*baca*	*membaca*	'read'
d.	*bakar*	*membakar*	'burn'
e.	*cari*	*mencari*	'search'
f.	*curi*	*mencuri*	'steal'
g.	*dengar*	*mendengar*	'hear'
h.	*dorong*	*mendorong*	'push'
i.	*gebuk*	*menggebuk*	'beat (a drum)'
j.	*gonggong*	*menggonggong*	'bark (of a dog)'
k.	*hilang*	*menghilang*	'disappear'
l.	*isi*	*mengisi*	'fill'
m.	*jual*	*menjual*	'sell'
n.	*ulang*	*mengulang*	'repeat'

i. Based on the above data, list all the allomorphs of this Indonesian verbal prefix.
ii. Write a general rule to account for the distribution of these allomorphs. Be sure to do this in terms of natural classes of sounds, rather than specific phonemes.
iii. Which is the basic allomorph? Justify your answer.
iv. What phonological process does this illustrate?

Now consider the additional Indonesian data in (o–t) below:

	Stem	Active	Gloss
o.	*kacau*	*mengacau*	'stir up (trouble)'
p.	*kenal*	*mengenal*	'know (someone)'
q.	*panggil*	*memanggil*	'call'
r.	*pukul*	*memukul*	'hit'
s.	*tulis*	*menulis*	'write'
t.	*tunggu*	*menunggu*	'wait'

v. Compare (o–t) with (a–n) above. Without doing anything to the rule you wrote in (ii) above, what additional statement needs to be made about the phonology of Indonesian verb stems and prefixes to account for these new data? Again, be sure to think in general terms of natural classes of sounds.
vi. The rules you wrote in (ii) and (v) must occur in a certain order with respect to one another. State which rule must go first and which rule must go second, and explain how you know this. (*Hint*: Explain specifically what would happen if you put the rules in a different order.)

4. **Language planning**
   The purpose of this exercise is to give you the chance to do some original library research of your own on a language not presented in this volume. Do some in-depth reading about language planning, and find out about it in places other than Indonesia. Three excellent cases to research are: Modern Hebrew in Israel, Irish in Ireland, or Hawaiian in the state of Hawai'i. Some efforts at language planning have been highly successful, such as with Indonesian, and others have not. For one of the three languages listed above, write a paper in which you outline some of the reasons for the successes or failures of language planning policies. Be sure to consider how corpus planning and status planning were implemented; also consider why, in what domains of life, and to what extent, speakers chose to adopt or reject the use of the language.

LANGUAGE PROFILE 13

Seneca

13.1 Introduction

At the end of the fifteenth century, when Europeans began a serious invasion of the Western Hemisphere, it was home to hundreds of distinct languages. North of the Rio Grande alone, there were approximately 300 languages belonging to about fifty separate language families. The first of these languages to be recorded in writing was spoken on the St. Lawrence River near the present site of Quebec City. The French explorer Jacques Cartier made three voyages to what is now eastern Canada beginning in 1534, and from those voyages we know something about a language that was spoken in a place the French called Stadacona. Among the words of the Stadaconan language was the name of a place, which the French spelled *canada*, which meant simply 'town' or 'settlement.'

Stadaconan turned out to be a language that was related to others within the Iroquoian language family, named after the five (later six) nations of the Iroquois. All of those languages are believed to be descended from a common ancestor that must have been spoken several thousand years ago. Linguists refer to that ancestor language as Proto-Iroquoian. In addition to a number of languages in northeastern North America, many of which disappeared before the eighteenth century, the only other known member of the Iroquoian language family is Cherokee, which was spoken by a large number of people in the southeastern

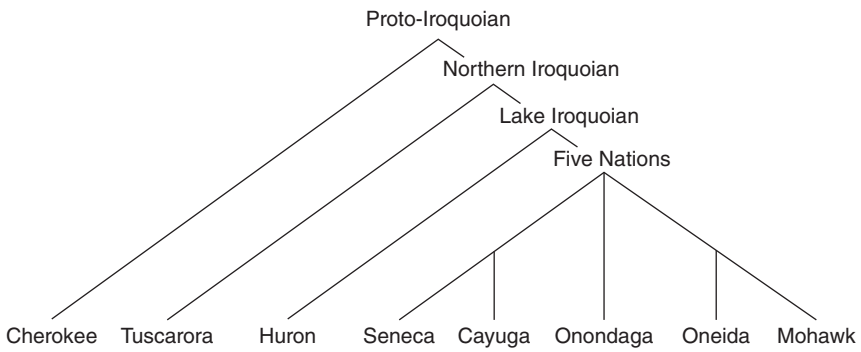


Figure LP13.1 The Iroquoian language family

SIDEBAR LP13.1
Online resources include a sound file for the narrative that is the basis for this language profile and a sound file for the Seneca numerals.

part of the United States. Most of the Cherokees were forced to move to Indian Territory (now Oklahoma) during the administration of Andrew Jackson, although a few of them escaped to the hills and managed to remain in western North Carolina. Figure LP13.1 is a diagram of the Iroquoian language family.

The term Lake Iroquoian covers the six languages spoken in the vicinity of the Great Lakes. At the time of first European contact, the Tuscaroras lived in the eastern part of North Carolina. Early in the eighteen century, they moved north to join their ancestors in the area of present-day New York State, where they were adopted by the Five Nations to become the sixth Iroquois nation. Huron lost its speakers in the nineteenth century, except that a divergent dialect known as Wyandotte survived in Oklahoma until the 1960s.

The focus of this language profile, Seneca, is spoken now by fewer than fifty people on three reservations (often now called territories) in western New York: Cattaraugus, Allegany, and Tonawanda. Although it is endangered, there have been significant community efforts to revitalize the language (see Textbox LP13.1).

Seneca is a name for these people that was adapted from the Dutch name *Sinneken*. The Dutch applied that name to all the Iroquois nations west of the Mohawks, the immediate neighbors of the Dutch in Fort Orange (now Albany). The English who succeeded the Dutch were fond of classical references, as demonstrated by the many New York State place names like Rome

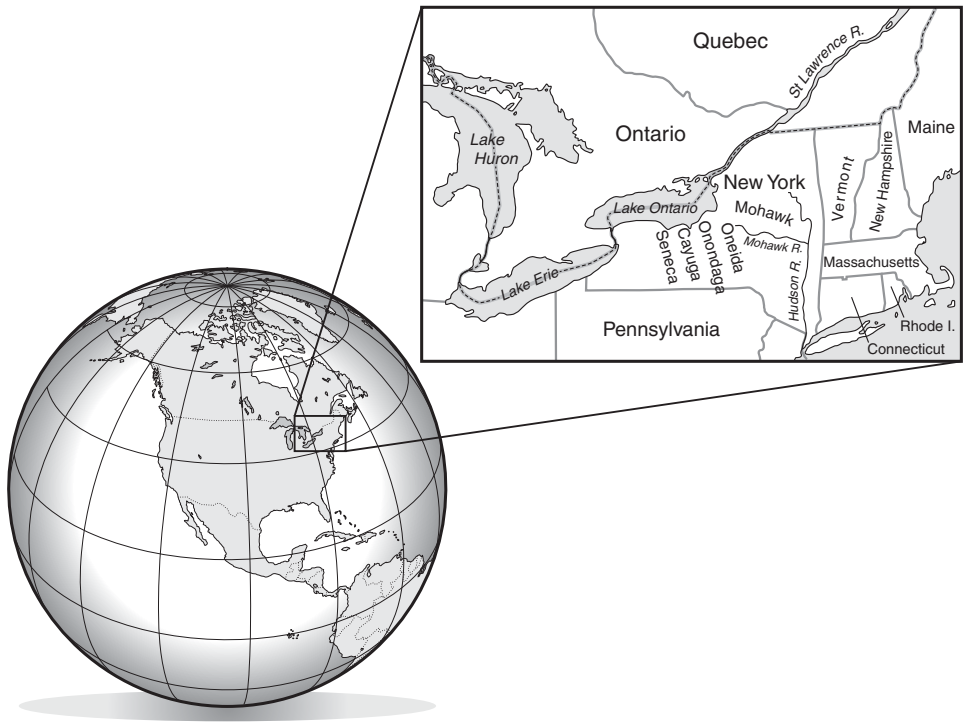


Figure LP13.2 Map: The Iroquoian languages

and Ithaca, not to mention small towns like Homer and Virgil. It was thus not surprising that Dutch *Sinneken* was reinterpreted as *Seneca*, the name of two ancient Roman writers.

The Iroquois group just west of the Mohawks were the Oneidas, whose name refers to a standing stone. It is possible that *Sinneken* began with an element *sinn-* meaning 'stone' in some Algonquian (non-Iroquoian) language, to which the Dutch added their own diminutive suffix *-ken*. In any case, as Europeans extended their knowledge of the Iroquois ever farther west – to the Oneidas, Onondagas, Cayugas, and Senecas – the name *Sinneken* or *Seneca* was eventually restricted to the westernmost Iroquois group to which it is applied today. The languages are closely related, to the extent that neighboring groups – the Mohawks and Oneidas, or the Senecas and Cayugas – have little difficulty understanding each other. On the other hand, the languages that are more distantly separated – for example, the Mohawks on the east and Senecas on the west – are not mutually intelligible. Mohawk, Oneida, Onondaga, Cayuga, and Seneca thus form what is known as a **dialect continuum**.

SIDEBAR LP13.2
For more on the concept of **mutual intelligibility** and a schematization of a dialect continuum, see the discussion of Figure 1.1 in Chapter 1 and Section 12.4, on how dialects arise and diverge into languages.

TEXTBOX LP13.1 **LANGUAGE REVITALIZATION**

Although recent years have seen the number of totally fluent speakers of the Seneca language decline to fewer than one or two dozen individuals at most, younger Senecas are now showing a renewed interest in learning the language and passing it on to future generations. Immersion in the language is now provided in classes where practice in speaking Seneca is showing significant results. Some younger Senecas, furthermore, have successfully learned ceremonial speeches that promise to keep their use in ritual settings from disappearing. "Language nests" in which older speakers interact in Seneca with very young children are another promising avenue through which the language is being kept alive. Although Seneca may no longer be used actively in day-to-day conversations, its use in these other settings has been expanding and promises to keep the language from disappearing.
Seneca Language Immersion Website: http://senecaimmersiongroup.org

13.2 The Status of Unwritten Languages

When Europeans first arrived in the Western Hemisphere, only some of the Maya and Aztec languages of Central America had their own writing systems. Hundreds of other languages had no written tradition. One sometimes encounters the naive view that unwritten languages are inferior to those that are written, but writing is at best a recent addition even to those languages that have such a system. This is not to say that writing is unimportant; its ability to conquer time and space has produced revolutionary changes in human history. But a language is a language, regardless of whether or not it is written. People have been speaking for as long as they have been people, and until very recently in human history, writing – if it existed at all – was confined to a small group of specialists.

Seneca was first written toward the end of the seventeenth century by a French Jesuit missionary named Julien Garnier. He had a "good ear" and wrote with considerable accuracy, although like other Jesuits he failed to recognize the glottal stop, an important Seneca

SIDEBAR LP13.3
Orthographic Note
The Seneca data will be given in the standard Seneca orthography. Corresponding IPA symbols are overtly noted throughout the language profile.

consonant. Living among the Senecas between 1671 and 1709, he compiled French–Seneca and Seneca–French dictionaries. Parts of them were lost, but other parts have survived. During the remainder of the eighteenth century, the language underwent a number of changes in its sounds, the effect of which was to create a language that is so different from its seventeenth-century ancestor that modern Seneca speakers would have difficulty understanding it. For example, the word for 'bread' in Garnier's time was *ohráhkwa'*, which corresponds to modern *å:hgwa'*.

13.3 Seneca Phonology

13.3.1 Vowels

Seneca has eight vowels, which are often written today as shown in Table LP13.1. Two of the vowels are nasalized, as indicated by the dieresis – *ë* and *ö* – the two dots above the letters. The low front vowel *ä* is marked in the same way but is not nasalized. The vowel *u* is limited to serving as a replacement for *a* in words indicating that something is tiny; compare *niyága'à:h* 'small girl' and *niyúgu'ù:h* 'tiny girl.'

Vowels in Seneca occur with three degrees of length. There is a short *a* in the last syllable of *ni:ga'* 'how big I am,' while in the same word, the colon indicates a long *i* in the first syllable. There are also extra long vowels, written *a:a* as in the word *gaga:a'* 'story.' Vowels may also be pronounced with either a low or a high pitch. High-pitched or accented vowels are written with an acute accent, as in *gagá'da'* 'white oak.' Some long vowels have a falling pitch, written with a grave accent as in *à:hge:d* 'he might come.'

13.3.2 Consonants

Seneca has fifteen consonants, as shown in Table LP13.2. (Also see Sidebar LP13.4.) The affricates *ts, tš*, and *dz* are written with two letters, but they function as single sounds. It would be more consistent to write the voiced palatal affricate as *dž*, but *j* is preferred because it reflects the usual English spelling of the same sound. The apostrophe (') is used for the glottal stop. Whereas in English *h* occurs only before a vowel, in Seneca it can also occur after a vowel, as in the word *à:hge:d* at the end of the previous paragraph.

TABLE LP13.1 Seneca vowels

	Front	Back
High	i [i]	u [u]
Mid	e [e]	o [o]
Low-mid and nasalized	ë [ẽ]	ö [õ]
Low	ä [æ]	a [a]

TABLE LP13.2 Seneca consonants

	Alveolar	Postalveolar	Velar	Laryngeal
Voiceless aspirated stops	t		k	
Voiced stops	d		g	
Fricatives	s	š		
Voiceless affricates	ts	č		
Voiced affricates	dz	j		
Sonorants	n	y	w	
Laryngeals			h, ’	

SIDEBAR LP13.4 **ORTHOGRAPHIC NOTE**

The transcription of postalveolar consonants here follows the orthographic tradition typically used for Native American languages.

Seneca	**IPA**
š	[ʃ]
č	[ʧ]
ǰ or j	[ʤ]
y	[j]
’	[ʔ]

13.4 A Seneca Narrative

The following is a story that was told by Mrs. Elsie Jacobs, a Seneca woman who was eighty-six years old at the time (see Textbox LP13.4 for more on Mrs. Jacobs). She prefaced the story by asking her listener whether he had ever been haunted, and she proceeded to describe what seemed to have been a supernatural event she had experienced when she was seven years old. At that time she was living with her grandmother, but she frequently visited the home of her mother, where this incident occurred.

TEXTBOX LP13.4 **MRS. ELSIE JACOBS**

Mrs. Jacobs was born in 1908 on the Cattaraugus Reservation, the oldest of six children. Not long after the incident described here, her mother died during the birth of her sixth child and Elsie was raised by her grandparents, Ida and John Bluesky. Ida was Seneca and spoke to Elsie in that language, but John, who is mentioned in the story, was Cayuga and spoke to her in English. She thus grew up fluent in both languages, an advantage in a school where some of the children entered speaking only Seneca.

Figure LP13.3 Mrs. Jacobs as a young girl

Sound file for Seneca narrative

The story is presented here with separate numbered lines for each sentence, as defined by a falling pitch at the end. Each of these sentences is presented in three lines. The first line is what Mrs. Jacobs said, the second contains an English translation for each Seneca word, and the third is a free translation of the entire sentence. Read the narrative and then consider Stop and Reflect LP13.1.

(1) *Dza:dak* *tšiwágoshíya'göh,* *o'dwagajëönyö:s* *no'yë́:neh.*
seven when I had crossed winters I got haunted at mother's
'When I was seven years old, I got haunted at my mother's.'

(2) *Akso:d* *i:'* *koh* *wa'agyajǒ'se:nö',* *ho'ka:'* *koh* *neh* *nyagwai'* *gayá'da'.*
grandmother I and we two went visiting I took it there and the bear doll
'Grandma and I went visiting, and I took the teddy bear.'

(3) *Hosgé'ëgéhdöh* *hohšö:ni:h.*
soldier he was dressed
'He was dressed as a soldier.'

(4) *That John* *hotgwe:nyö:h* *at Indian Fair.*
he had won it
'That John had won at the Indian Fair.'

(5) *Da:h* *o:nëh* *nä:h* *wa'ágwatgá:nye:'* *gayá'da'shó'öh,* *he'tgëh* *wa'a:gwe:'.*
so then ! we played dolls above we went there
'So then we played dolls, we went upstairs.'

(6) *Ga:nyo'* *nä:h* *wa'ögwagé:'dë',* *wa'ákiyáshë:',* *trúnkgeh* *wa'ákíá'dë'.*
when ! we got tired of it we laid them down on the trunk we put them on it
'When we got tired of it we laid them down on the trunk.'

(7) *Da:h* *o:nëh* *nä:h* *wa'ágwatgá:nye:',* *dayagwajë:'* *gë:s* *at the top of the steps*
so then ! we played we sat down there repeatedly
'So then we played, we sat down there at the top of the stairs.'

(8) *Dayágwatéyo'dzën* *gë:s.*
we slid down there repeatedly
'We slid down there.'

(9) *Ta'gë:'öh* *nä:h* *ne'hoh* *dödà:da't* *neh* *nyágwai'* *gá:'tëshágë:ya:d.*
after a while ! there he stood there the bear at the top of the stairs
'After a while the bear stood there at the top of the stairs.'

(10) *Da:h* *o:nëh* *nä:h* *wa'ógwahjö'.*
so then ! we got scared
'So then we got scared.'

(11) *Wa'áki:nö:g* *neh* *no'yëh,* *wa'ötgato'* *há:'gwah* *waöwögë'.*
we called to her the mother she looked also she saw him
'We called mother, she looked and she saw him too.'

(12) *Da:h* *o:nëh* *wa'ödadí:nö:g* *né:wa'* *neh* *Gram,* *wa'e:gë'* *há:'gwah.*
so then she called to her this time the she saw it too
'So then she called Gram, she saw it too.'

(13) *Da:h* *o:nëh* *nä:h* *wa'agwadé'go'* *wa'agwajë:'* *gasdò:shök'ah.*
so then ! we ran away we sat down next to the stove
'So then we ran away and sat down next to the stove.'

(14) *O:nëh da'sayagyáhdë:di' neh akso:d, niyőgyahjő'öh.*
then we didn't go home the grandmother how scared we were
'Then we didn't go home with my grandmother, we were so scared.'

(15) *Heh niyo:we' sa:ayö' neh ha'nih.*
there how far he came back the father
'Until Father came back.'

(16) *Da:h o:nëh nä:h o'shágwa:owi', wá:tgato' hắ:'gwah.*
so then ! we told him he looked too
'So then we told him, he looked too.'

(17) *O:nëh gyö'öh de'ta:d neh nyagwai'.*
then hearsay he isn't standing any more the bear
'Then (he told us) the bear isn't standing there any more.'

(18) *Da:h o:nëh nä:h, wa'ékö:ni' neh no'yëh, ëdzőki'jő:nö' shö:h.*
so then ! she cooked the mother she will take us back just
'So then mother cooked, she was just going to take us back.'

(19) *Da:h o:nëh nä:h wa:ayö' neh John shökí:nöke'.*
so then ! he arrived the he was there to get us
'So then John came to get us.'

(20) *Da:h o:nëh nä:h dödayagwáhdë:di'.*
so then ! we went home
'So then we went home.'

(21) *Da:h ne'hoh shö:h neh gagais, do:gës nä:h ne'hoh niyáwë'öh.*
so there just the length of story really ! there how it happened
'So that's just the end of the story, that's what really happened.'

STOP AND REFLECT LP13.1 **STRUCTURE OF A NARRATIVE**

Section 9.6 presents the following elements of the conventional narrative schema: introduction of the narrative; introduction of the participants; orientation in space; orientation in time; movement toward a climax; the climax; reaction to the climax; results of the climax; coda. Does Mrs. Jacobs' story have all of these elements? Which lines of the story realize which parts of the narrative?

13.4.1 The Influence of English

SIDEBAR LP13.5
For more on codeswitching, see Section 11.2.3.

When this story was recorded, everyone in the community spoke English most of the time and there were very few people who held extended conversations in Seneca. Mrs. Jacobs showed the influence of English in several places. Line 4 contains an example of what linguists

call **codeswitching**. The beginning and end of the sentence were in English but the verb in the middle was in Seneca:

(4) *That John hotgwe:nyö:h, at Indian Fair.*
he has won it
'That John had won at the Indian Fair.'

The English at the end of line 7 is another example:

(7)

Da:h	*o:nëh*	*nä:h*	*wa'ágwatgá:nye:',*	*dayagwajë:'*	*gë:s*	*at the top of the steps*
so	then	!	we played	we sat down there	repeatedly	

'So then we played, we sat down there at the top of the stairs.'

Two sentences later, however, in line 9, the same idea was expressed with a Seneca word:

(9)

Ta'gë:'öh	*nä:h*	*ne'hoh*	*dödà:da't*	*neh*	*nyágwai'*	*gá́:'töshá́gë:ya:d.*
after a while	!	there	he stood there	the	bear	at the top of the stairs

'After a while the bear stood there at the top of the stairs.'

In line 12, Mrs. Jacobs said *Gram* rather than *Akso:d*, the Seneca word for grandmother that she used elsewhere:

(12)

Da:h	*o:nëh*	*wa'ödadí:nö:g*	*né:wa'*	*neh*	*Gram,*	*wa'e:gë'*	*há́:'gwah.*
so	then	she called to her	this time	the		she saw it	too

'So then she called Gram, she saw it too.'

Codeswitching may also occur within a single word. In Line 6, the English *trunk* was followed by the Seneca suffix *-geh*, translatable as 'on': *trunkgeh* 'on the trunk.' In Line 13, the influence of English is more obscure in the word *gasdò:shä́k'ah* 'next to the stove,' but in fact *-sdò:-* in the middle of that word was borrowed from English *stove*. The Seneca word for 'stove' alone is *gasdò:shö'*, with the neuter prefix *ga-* and the noun-forming suffix *-shä'*. Here it was followed by the verb root *-k'ah* 'be next to.' There is an alternative, entirely Seneca word for 'stove' – *ganőhsodàià'shä'*, literally 'that which heats the house,' but Mrs. Jacobs chose the half-English version. (See Textbox LP13. for a note about Seneca's influence on English.)

TEXTBOX LP13.4 **SENECA'S INFLUENCE ON ENGLISH**

Not only has Seneca been influenced by English, but English has been influenced by Seneca, too. Borrowing from Seneca into English is particularly evident in place names; two of the fifty US states have Seneca names: Kentucky and Ohio. The first is an English interpretation of Seneca *Gëdá'geh* 'at the field.' The second originated as the name of the Ohio River, derived from Seneca *Ohi:yo:h* 'beautiful river,' a stretch of water that includes both the Allegany (or Allegheny) River and its continuation at Pittsburgh as the Ohio. It is also the name of the Allegany Reservation, but with a final glottal stop that is often found on proper names: *Ohi:yo'*.

13.5 Polysynthesis and Fusion

Europeans who first encountered **polysynthetic** languages like Seneca liked to say that they could express within a single word a thought that in English or another European language would require an entire phrase or even an entire sentence. The second word in line 1 of Mrs. Jacob's story, reproduced below, *tšiwágoshíya'göh*, means literally 'when I have crossed winters' – five words in English. Its parts include:

(1)

tši-	*wág-*	*-osh-*	*-íya'g-*	*-öh*
when-	I-	-winter-	-cross-	-PERFECT

Crossing winters is the idiomatic way Seneca expresses the idea of being a certain age; hence the free translation 'when I was seven years old.' Winters in the Northeast of North America were severe, and surviving one was a salient achievement by which the passage of years was measured. The "perfect" suffix locates the crossing of winters as an event that occurred in the past but was still relevant, so the equivalent in English would be *I have crossed (a certain number of winters)*.

As we have seen in these types of examples, Seneca words can contain a large number of morphemes. Moreover, the language has undergone a large number of sound changes whose effect has often been to obscure the boundaries between those morphemes. Languages of this type are called not only polysynthetic but also **fusional**, with separate morphemes fused together.

SIDEBAR LP13.6
See Section 4.8 for more on polysynthetic versus isolating or analytic languages. For examples of other polysynthetic languages, see the Language Profiles on Nuuchahnulth (LP5) and South Conchucos Quechua (LP6).

This process is evident in the word *gä́:'tëshä́gë:ya:d* 'at the top of the stairs' in line 9 above, which is difficult to segment into discrete morphemes because the morphemes have been fused together through processes of historical sound change, as discussed in Textbox LP13.4.

Some shorter words in Seneca hide more complexity than is evident on the surface. In line 2 above, *ho'ka:'* 'I took it there' is the modern pronunciation of a word that was once pronounced **hwa'khaw'*. Over time, the first syllable, *hwa'-*, was replaced by *ho'-*, the *kh* sequence was reduced to *k*, and the *w* in the last syllable was dropped with compensatory lengthening of the preceding *a*; thus today we have *ho'ka:'*.

SIDEBAR LP13.7
For examples of common types of sound changes cross-linguistically, see Textbox 12.2.

TEXTBOX LP13.4 SOUND CHANGE LEADING TO FUSION

Several centuries ago, the word *gä́:'tëshä́gë:ya:d* 'at the top of the stairs' would have been pronounced **garáʼdëshrágëhyad*; the asterisk shows that this is a reconstructed pronunciation from the past. At that time, under certain conditions, vowels in even-numbered syllables were accented – in this case syllables 2 and 4. The sequence *ra* in the second and fourth syllables was replaced by *rä*, producing **garä́'dëshrágëhyad*, and later the *r* dropped out, leaving **gaä́'dëshágëhyad*. The vowel sequence *aä* at the beginning of that word coalesced into a long *ä́:*, leaving **gä́:'dëshágëhyad*. At some point the *h* in the next-to-last syllable also dropped out with compensatory lengthening of the preceding vowel, and the *a* in the final syllable was lengthened as well. Thus, today we have the pronunciation *gä́:'dëshágë:ya:d*:

Original pronunciation	**garáʼdëshrágëhyad*
ra -> rä	**garäʼdëshrágëhyad*
r deletes	**gaäʼdëshágëhyad*
aä -> ä:	**gä́:'dëshágëhyad*
h deletes; vowels lengthen	*gä́:'dëshágë:ya:d*

13.5.1 The Predominance of Verbs

As with the other Northern Iroquoian languages, Seneca uses verbs to a far greater extent than English and other European languages. In fact, exaggerating only slightly, a nineteenth-century missionary among the Mohawks wrote, "In their language almost everything is a verb" (Cuoq 1866). Perhaps the most salient feature of Seneca verbs is their inclusion within a single word of both an event and a participant in the event. Such a word can then be used to refer either to the event itself or to the participant. Thus, one possible translation of the verb *hayë:twas* is 'he plants,' a habitual event, but the same word can also be used to refer to a man who does the planting: a 'planter,' 'gardener,' or 'farmer.'

Not only do Seneca verbs include information on the participants in events, they are also subject to modifications of the basic meaning that are expressed by derivational suffixes following the verb base. The element meaning 'plant' appeared as the base *-yëtwa-* of the word *hayë:twas*. But this base itself is composed of the root *-yët-* with the meaning 'be set in place' followed by a derivational suffix *-w-* that means 'cause to.' Thus, the meaning 'plant' is derived from 'cause to be set in place.' To this base can be added a number of further modifications, which at the same time trigger changes in the form of the habitual aspect suffix at the end. These are given in Table LP13.3.

13.5.2 Noun Incorporation

Another feature of polysynthetic languages that adds to their complexity is **noun incorporation**: the addition of a noun root to modify the meaning of the verb root (see Stop and Reflect LP13.2). In line 1 in the story above, we saw the incorporation of *-osh-* 'winter' with the verb root *-iya'g-* 'cross' to express the idea of crossing winters. Another example of incorporation occurred at the very end of the story in line 21, in the word *gaga:is*, either 'it's a long story' or 'the length of the story.' Here the noun root *-gar-* 'story' was incorporated

TABLE LP13.3 Modifications on the word base *-yëtwa-* 'plant'

Word base	Meaning	Modifications through derivational suffixes
-yëtwahs-	'go planting'	with the 'dislocative' suffix *-ahs-* and habitual *-e's* in *hayë́twahse's* 'he goes planting'
-yëtwat-	'use for planting'	with the 'instrumental' suffix *-at-* and habitual *-a'* in *hayë́twata'* 'he uses it for planting'
-yëtwahse-	'plant for someone'	with the 'benefactive' suffix *-hse-* and habitual *-h* as well as the 'he for me' prefix *hag-* in *hagyë́twahseh* 'he plants for me'
-yëtwahsö-	'plant things'	with the 'distributive' suffix *-hsö-* and habitual *-h* in *hayë́twahsoh* 'he plants things'
-yëtwagw-	'harvest'	with the 'reversive' suffix *-gw-* (harvest interpreted as the reverse of plant) and habitual *-as* in *hayë́twagwas* 'he harvests'
-yëtwagwaö-	'harvest things'	with both the 'reversive' suffix *-gw-* and the 'distributive' suffix *-ö-* and habitual *-h* in *hayë́twagwàöh* 'he harvests things'

with the verb root *-is* 'be long.' The earlier form **gagaris* acquired a long vowel in the next to last syllable, **gaga:ris*, and then the *r* was lost to produce *gaga:is*. This word illustrates how the same word can be used for a state, 'it's a long story,' or for something that is in that state, 'the length of the story.'

STOP AND REFLECT LP13.2 **NOUN INCORPORATION**

Noun incorporation is similar to compounding in that two separate roots, stems, or words are combined into one; however, in this case, a noun root is used to modify a verb root, resulting in a verb. Often the modification of the verb by the noun serves to make the meaning of the verb more specific.

Noun incorporation also occurs in English and can be seen in verbs such as *bartend* (which incorporates the noun *bar*), and *babysit* (incorporating the noun *baby).*

Think of five other examples of noun incorporation in English. What is the semantic case role of the noun in each case?

13.5.3 Pronominal Prefixes

All of the verbs in Seneca, and many of the nouns, include a so-called pronominal prefix that specifies the gender, number, and role of one or more participants in an event or state, or (with a noun) the possessor of an object. In line 1 above, both of the verbs, *tšiwágoshíya'gäh, o'dwagajëönyö:s* 'when I had crossed winters, I got haunted' contain a prefix *-wag-* that corresponds to the English pronoun *I*. In line 2, the verb *ho'ka:'* 'I took it there' also contains an element translated 'I,' but in this case the prefix is *-k-* rather than *-wag-*. This *-k-* is the form taken by a first-person prefix that specifies someone who performs an action, called an **agent**. The *-wag-* prefix in the first two verbs, on the other hand, is used when someone is affected by an event, called a **patient**. Someone who has 'crossed winters' is regarded as affected by the experience, as is a person who gets haunted.

SIDEBAR LP13.8

For the description of another system of agent–patient cross-referencing on the verb, see the Lowland Chontal Language Profile, Section LP9.2.2.

In lines 5 and 6 of the story, we have the verbs *wa'ágwatgánye:'* 'we played' and *wa'ögwagè:'dë'* 'we got tired.' The first contains the 'first-person plural agent' prefix *-agwa-:* the agent of the playing. The second contains the 'first-person plural patient' prefix *-ögwa-*. Someone who gets tired is assigned to the patient role. We can line up the four prefixes described so far as in Table LP13.4.

TABLE LP13.4 Some first-person prefixes in Seneca

	Singular	Dual	Plural
Agent	*-g-* or *-k-*	*-(y)agya-*	*-(y)agwa-*
Patient	*-wag-*	*-(y)ögya-*	*-(y)ögwa-*

In the upper left cell of Table LP13.4, *-g-* appears before vowels and *-k-* before (most) consonants. Although the *k* in *ho'ka:'* 'I took it there' appears to be followed by a vowel, we saw that this word was earlier pronounced **hwa'khaw'*, where the *k* was followed by an *h* and hence pronounced *k* rather than *g*. In the dual and plural columns, the initial *y* was dropped after a glottal stop, as in the examples above. We can see this *y* in line 14, *da'sayagyáhdë:di'* 'we (dual) didn't go home'; in line 7, *dayagwajë:'* 'we (plural) sat down there'; and with a patient prefix in line 14, *niyőgyahjő'oh* 'how scared we were.'

SIDEBAR LP13.8
Orthographic note: in the combination [*sh*] the [*s*] and [*h*] are pronounced separately, not as the single sound spelled *sh* in English.

It is also possible for an agent to be combined with a patient within a single transitive prefix. In line 16, *o'shágwa:owi'* 'we told him' contains the transitive prefix *-shagwa-*, which combines a first-person plural agent with a masculine singular patient: 'we (did something to or for) him.' With the same verb root, a few other possibilities are: *o'shőgwa:owi'* 'he told us' and *o'ké:owi'* 'I told her.' In all there are sixty-seven of these pronominal prefixes, including intransitive agents and patients and transitive combinations of them. The following are some combinations with a masculine singular agent, 'he,' attached to the verb stem *-nöe's* 'like.' Dual means 'two' and plural means 'three or more.'

haknőe's	'he likes me (singular)'
shökninöe's	'he likes us (dual)'
shögwánöe's	'he likes us (plural)'
yanőe's	'he likes you (singular)'
shesninöe's	'he likes you (dual)'
sheswánöe's	'he likes you (plural)'
honőe's	'he likes him'
shagónöe's	'he likes her'
hagőnöe's	'he likes them'

The following combinations have a masculine singular patient:

henőe's	'I like him'
shehninöe's	'we (dual inclusive) like him'
shedwánöe's	'we (plural inclusive) like him'
shakninöe's	'we (dual exclusive) like him'
shagwánöe's	'we (plural exclusive) like him'
hesnőe's	'you (singular) like him'
shesninöe's	'you (dual) like him'
sheswánöe's	'you (plural) like him'
höwőnöe's	'she or they like him'

There are two things to notice in this last set. In one respect Seneca makes more distinctions than English does, but in another respect it makes fewer. There are four different ways of translating the English pronoun *we* when it combines an agent with a masculine singular patient. The group covered by 'we' may be dual or plural, and it may be **inclusive** or **exclusive**. An inclusive 'we' includes the person being talked to, the listener. Inclusive dual is like saying 'you and I,' and inclusive plural includes 'you and I and some other people.' An exclusive 'we' excludes the person being talked to: 'we' but not including 'you.'

The other thing to notice is that in the last word, *höwőnöe's* 'she or they like him,' no distinction is made between a single female, 'she,' and plural third person, 'they.' This absence of a distinction between 'she' and 'they' appears in other transitive prefixes as well. It exemplifies the manner in which cultural practices sometimes influence language. In ancient Iroquois society men and women had very different roles. Writing of the Hurons, one anthropologist wrote that:

> the most basic distinction in Huron society was that made between the sexes … Almost every task was considered to be either exclusively men's work or exclusively women's work, and every Huron was expected to be familiar with all or most of the tasks appropriate to his or her sex. For the most part, men engaged in tasks that required considerable physical strength, or which took them away from home for long periods. Women performed tasks of a more routine nature that kept them in, or close to, their villages … In addition to hunting and fishing, clearing land, building houses, and manufacturing tools, the major activities that men engaged in were trading, waging war, and government. (Trigger 1976: 34, 45)

Gender roles were distributed in Iroquois society in such a way that men were conspicuous and flamboyant, while women stayed in the background. Their position, however, was one from which women influenced what men did in fundamental ways. Rather than being unimportant or undervalued, women were responsible for keeping life going, both from day to day and from generation to generation.

> Descent was traditionally traced through the women, land belongs to the women, and chiefs are appointed by the women – who theoretically can depose them at will. This means that female children are important to a family, the opinions of women carry weight, and women have some legal and political power. (Richards 1974: 401)

The foregrounded role of men and the backgrounded but powerful role of women are mirrored in a pronominal prefix system that elaborates masculine gender while it integrates women with people in general.

13.5.4 Verbs, Nouns, and Particles

Viewed in terms of their internal structure, Seneca words fall into three major classes: verbs, nouns, and particles. Verbs consist minimally of a pronominal prefix, a verb base, and an aspect suffix, but there are many ways in which that simple structure may be expanded, as we saw above. Nouns usually consist of little more than a pronominal prefix, a noun base, and a noun suffix. Mrs. Jacobs' story contained only one example of a morphological noun: *gayá'da'* 'doll' (line 2). It is built on the noun root *-ya't-*, which refers more generally to a 'body' but is also used for a doll. It is preceded by the neuter prefix *ga-* and followed by the generalized noun suffix *-a'*. In line 5, this word occurred in its **distributive** version *gayá'da'shő'öh* 'dolls.' The *-shö'öh* suffix is called distributive rather than plural because it implies not only that there were several dolls but also that these dolls were of different types, one being a teddy bear and others of other kinds.

Mrs. Jacobs' story contained 128 words, of which thirteen were English. Of the 115 Seneca words, only two were nouns as described in the paragraph above. One word, *ha'nih* 'father'

belongs to a small subset of kinship terms that have their own unique structure, contrasting in that respect with *akso:d* 'grandmother,' which is actually a verb. That leaves 42 verbs and 70 words that belong to the diverse class of **particles**: words with no internal structure or, in a few cases, a very simple and often idiosyncratic structure. Particles perform a number of different functions, which can be assigned to the following rough categories:

- *Numerals*: The first word in Mrs. Jacobs' story was the numeral *dza:dak* 'seven.' (See Textbox LP13.5 for other numerals in Seneca.)
- *Kinship terms*: Also in line 1 was *no'yë́:neh* 'at mother's,' composed of *no'yëh* 'mother' (in lines 11 and 18) plus the locative suffix *-neh*.
- *Animals*: A number of animal names, such as *nyagwai'* 'bear' (lines 2, 9, and 17) have no obvious internal structure, as is the case with *ji:yäh* 'dog,' *gwa'yó:'* 'rabbit,' and others.
- *Pronouns*: Line 2 contains the first-person pronoun *i:'*, which can mean 'I,' 'we,' 'me,' or 'us.' The second-person pronoun is *i:s* 'you.'
- *Temporal adverbs*: Conspicuous in this text is the adverbial particle *o:nëh* 'then' (lines 5, 7, 10, 12–14, and 16–20) expressing succession in time. A more specific temporal location is provided by *né:wa'* 'this time' (line 12). An event that occurs a number of times is signaled by *gë:s* 'repeatedly' (lines 7 and 8). A passage of intervening time is signaled by *ta'gë:'öh* 'after a while' (line 9).
- *Spatial adverbs*: The most general indicator of a specific location is *ne'hoh* 'there' (lines 9 and 21). The little word *heh* 'there' (line 15) is limited to particular expressions. Vertical location is signaled by *he'tgëh* 'above' (line 5).
- *Article*: The particle *neh* (lines 2, 9, 11, 12, 14, 15, 17–19, and 21) can often be translated as the English definite article 'the,' although it has more uses as well.
- *Epistemics*: Native American languages tend to be more concerned than European languages with the source and evaluation of the knowledge that is being communicated. There are two epistemic particles in Mrs. Jacobs' account. When one is telling about something one has not witnessed directly, it is common to insert the hearsay particle *gyö'öh* (line 17), absolving oneself of direct responsibility for the information. The other particle in this category is *do:gës* 'really' (line 21), expressing certainty about what happened.
- *Limiter*: The particle *shö:h* 'just' (lines 18 and 21) indicates that the information conveyed was the only possibility.
- *Intensifier*: The particle *nä:h* (lines 5–7, 9, 10, 13, 16, and 18–21), which is translated here with an exclamation point (!), corresponds to saying something in English with greater emphasis. Here it appeared most often in the fixed expression *Da:h o:nëh nä:h* 'so then,' which began many of the sentences (lines 5, 7, 10, 13, 16, and 18–20). It corresponds to pronouncing the word 'then' with higher pitch and greater loudness.
- *Connectives*: Finally, there are several particles that logically connect what preceded with what follows. The most common is *da:h* 'so' (lines 5, 7, 10, 12, 13, 16, and 18–21). The particle *koh* 'and' (line 2) is placed after the connected item rather than before, as in English: *akso:d i:' koh* 'grandmother and I.' Similar in function is *hä́:'gwah* 'also' (lines 11, 12, and 16). Finally, there is the temporal conjunction *ga:nyo'* 'when' (line 6), which is less tightly integrated with the event than the prefix *tši-* in *tšiwágoshïya'göh* 'when I had crossed winters' (line 1).

TEXTBOX LP13.5 **SENECA NUMERALS**

The Seneca numerals from one to ten are:

sga:d	'one'	*wis*	'five'
dekni:h	'two'	*ye:i'*	'six'
sëh	'three'	*dza:dak*	'seven'
ge:i'	'four'	*degyö'*	'eight'
		johdö:h	'nine'
		washë:h	'ten'

STOP AND REFLECT LP13.3 **COUNTING TO TEN IN SENECA**

Try counting to ten in Seneca, using what you know about Seneca orthography and pronunciation. Then compare your pronunciation with the sound file on the website.

Sound file for Seneca numerals

CHAPTER SUMMARY

We have seen something of the history of the Seneca language and the features that assign it to the polysynthetic and fusional language type. Mrs. Jacobs' narrative provided a basis for illustrating some of the basic elements of Seneca structure, especially the predominant role of verbs and the way verbs can be expanded to modify the nature of events and states. Although complex verbs are the principal means of expressing ideas, the last section described some of the variety found in the ubiquitous particles that modify the flow of discourse.

SUGGESTIONS FOR FURTHER READING

Chafe, **Wallace**. 1996. "Sketch of Seneca, an Iroquoian language." In **Goddard**, **Ives** (ed.), *Handbook of North American Indians, Vol. XVII: Languages*. Washington, DC: Smithsonian Institution. 225–253.

This sketch covers many aspects of Seneca phonology, morphology, and discourse, as well as a selected vocabulary of Seneca words.

Chafe, **Wallace**. 2014. *A grammar of the Seneca language*. University of California Publications in Linguistics. Berkeley and Los Angeles: University of California Press.

This is a more detailed description of Seneca.

Mithun, **Marianne**. 1999. *The languages of Native North America*. Cambridge University Press.

The chapter in this book on the Iroquoian language family provides an overview of research on each of the Iroquoian languages along with a more detailed discussion of Cayuga, whose relation to Seneca is very close.

Morgan, **Lewis Henry**. 1851. *League of the Ho-De'-No-Sau-Nee, Iroquois*. Rochester: Sage & Brother, with numerous reprintings.

This book is a classic description of traditional Iroquois culture as viewed by an outsider who had expert help from contacts on the Tonawanda Seneca Reservation. The chapter titled "Language of the Iroquois" unfortunately repeats misguided prejudices regarding the nature of "primitive" languages.

EXERCISES

1. In line 1, Mrs. Jacobs said *no'yë:neh* 'at mother's (house).' How would she have said 'at father's (house)'?
2. If *o'shögwagë'* means 'he saw us (plural),' how would a Seneca person say 'we (plural) saw him'?
3. How would Mrs. Jacobs have said 'when I was five years old'?
4. The word *ganöhsagë':ya:d* means 'at the top of the house.' How would this word have been pronounced three hundred years ago? Which part of it carries the meaning 'house'?
5. A Seneca woman was talking about a new restaurant in town. She said, 'It's very expensive *gyö'öh*.' Why did she insert the Seneca word *gyö'öh* into a sentence that was otherwise in English? What is this type of phenomenon called?

LANGUAGE PROFILE 14

Akkadian

14.1 Historical Background

Akkadian is a Semitic language that is no longer spoken, but which is related to the living Semitic languages Arabic, Amharic, Hebrew, and Aramaic. Akkadian is one of the earliest attested languages, surpassed in this respect only by Sumerian and Ancient Egyptian. It was spoken in ancient Mesopotamia (a term which refers to the land "between the rivers," or between the Euphrates and the Tigris), in an area roughly corresponding to today's Iraq.

SIDEBAR LP14.1
Since Akkadian is an extinct language spoken thousands of years ago and is only attested on clay tablets, the *How Languages Work* website does not contain sound files, speaker biographies, or other materials on this language.

The first written records in Akkadian date from around 2500 BCE, and the language continued to be spoken until around 500 BCE, when it was displaced by Aramaic. Nevertheless, texts in Akkadian continued to be written for several more centuries. The Akkadian language thus has a written history spanning more than two thousand years, almost twice as long as that of English. During this period, the language underwent considerable changes. However, some of the basic traits of its grammar, such as the remarkable root-and-template architecture of the verbal system, which we shall explore in more detail below, have characterized Akkadian throughout its history.

The name of the language derives from the city of *Akkade* which was founded in the twenty-third century BCE as the imperial capital of the first "world conqueror," King Sargon. After 2000 BCE, Akkadian diverged into two main varieties: Babylonian, which was spoken in the south of Mesopotamia in an area dominated by the city of Babylon (today south of Baghdad), and Assyrian, which was spoken in the north. The Babylonians and Assyrians dominated the political and cultural horizon of the Ancient Near East up until the sixth century BCE. Their political dominance may have waxed and waned, but for a good part of two thousand years, Mesopotamian emperors would rule over "the four corners" (of the earth). From Sargon in the third millennium BCE to Sennacherib and Nebuchadnezzar in the first, these emperors would lay claim to the title "King of the Universe." More stable than the power of the sword, however, was the cultural hegemony of Mesopotamia over the whole region. The Akkadian language shaped the dominant canon for much of the Near

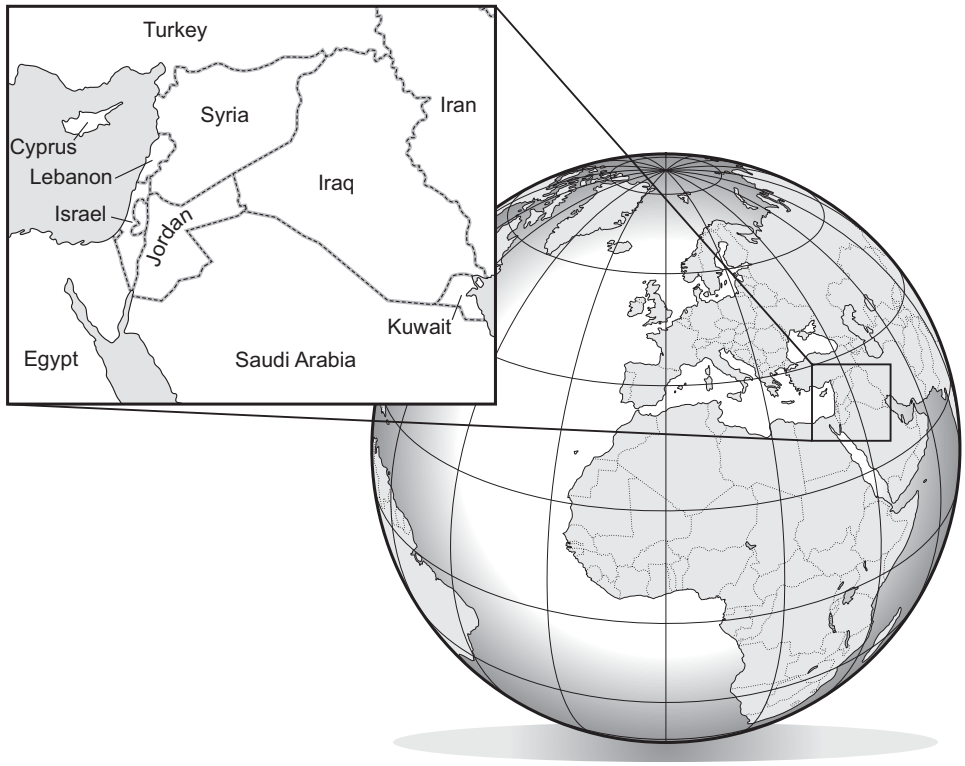


Figure LP14.1 Map of Mesopotamia

East in terms of religion, the arts, science, and law. And the **cuneiform** ('wedge-shaped') writing system, which Akkadian speakers had originally borrowed from their Sumerian neighbors, was exported far and wide, and adapted as the script of many diverse languages, from Hittite to Elamite, and from Hurrian to Ancient Persian. Akkadian itself was used as a **lingua franca** throughout the Near East, and was the means of diplomatic correspondence. Languages across the Near East also borrowed many scientific and cultural terms from Akkadian, a few of which may even be recognized by English speakers today. For instance, the first word in the Jewish expression *mazel tov* ('luck good' in Hebrew) is a borrowing from the Akkadian astrological term *mazzaltu*, which meant the position of a star in the sky.

SIDEBAR LP14.2
For an explanation of the term lingua franca, see Section 15.2.1.

After millennia of cultural supremacy, however, Assyria was defeated and Babylon soon followed suit, finally finished off by the Persians. The sixth century BCE ushered in an age of rapid decline, so that within a few centuries both the Akkadian language and its writing system fell into oblivion. Hundreds of thousands of clay tablets, the product of two thousand years of civilization, lay forgotten in the desert sands for two more millennia, to be rediscovered and deciphered only in the nineteenth century. Since

SIDEBAR LP14.3

Numerous websites have photos and information regarding the tablets and cuneiform script. A 2016 article in *Archaeology* entitled "The World's Oldest Writing System" allows readers to explore clay tablets of different types (e.g., maps, recipes, medical treatises, and religious texts). www.archaeology.org/issues/213-1605/features/4326-cuneiform-theworld-s-oldest-writing

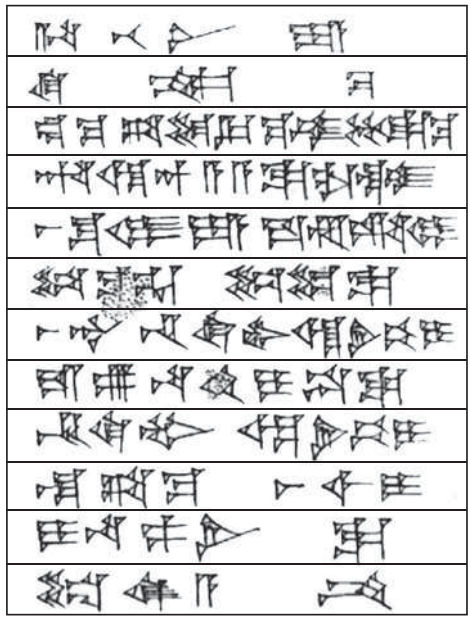
then, an incredible wealth of texts has been recovered from the soil of Iraq and neighboring countries and has opened up a unique perspective into one of history's greatest civilizations. The texts encompass many genres, including poetry (such as the Epic of Gilgamesh), legal documents (such as the Code of Hammurabi), religious incantations, royal inscriptions of heroic deeds, diplomatic correspondence, everyday letters between individuals, monolingual and multilingual dictionaries, mathematical and astronomical texts, medical treatises, school exercises, and a seemingly endless quantity of administrative documents, from real estate contracts to lists of workers' food rations. One reason for such an abundance of surviving materials is that the texts were written not on paper, but on wet clay tablets, using a triangular-shaped wedge. And clay, once dried, is highly durable; thus, there are hundreds of thousands of tablets that have been recovered, and thousands more yet to be unearthed.

14.2 The Writing System

An introduction to the world of Akkadian and the cuneiform writing system: http://knp.prs.heacademy.ac.uk/cuneiform-revealed/

The cuneiform writing system was developed toward the end of the fourth millennium BCE by the Sumerians, the earlier inhabitants of southern Mesopotamia. In the middle of the third millennium BCE, Akkadian speakers borrowed the script and adapted it to write their own language. Figure LP14.2 is a hand copy of a clay tablet from the British Museum, which contains a letter from around 1800 BCE. The letter begins, "Tell my lord, this is what your maid Tatūr-mātum said: May (the gods) Šamaš and the bride Aya keep you well forever for my sake. Concerning the fish and the locusts that I told you about, don't forget them. Bring them with you."

The cuneiform script is rather complex, because it used both **syllabograms** (phonetic signs that represent syllables or parts of syllables, represented in modern transliterations by small letters, e.g., *ma, an, nam*, etc.) and **logograms** (whole-word signs, represented in modern transliterations by capitals, e.g., GÉME – 'maid'). In the first line of the text in Figure LP14.2, for example, all the signs are to be read phonetically (see Textbox LP14.1 for transcription notes). But in line 3, the third sign from the right is the logogram GÉME. Since the logograms were borrowed from Sumerian, modern transliterations represent these logograms according to their Sumerian rather than Akkadian pronunciations. The Akkadian pronunciation of the word 'maid' was actually *amat*, so the word transliterated as *GÉME-ka-ma* was actually pronounced *amatkama* 'your maid.' A further complication is that some logograms were not meant to be pronounced at all, but were 'determinatives' that specified which type of noun followed them. The first sign in line 4 (DINGIR) is a logogram for 'god,' showing that a god's name is to follow (in this case the Sun god, called *Utu* in Sumerian and *Šamaš* in Akkadian).



1 a-na be-lí-a
2 qí-bí-ma
3 um-ma ta-tu-ur-ma-tum GÉME-ka-ma
4 (DINGIR) UTU ù (DINGER) A . A ka-al-la-tum
5 aš-šu-mi-ia da-ri-iš u_4-mi
6 li-ba-al-li-ṭú-ka
7 aš-šum en-ke-tim ù er-bi-i
8 ša ú-na aḫ-i-du-ka
9 en-ke-tim ù er-bi-i
10 la ta-ma-aš-ši-i
11 i-na pa-ni-ka
12 li-qí-a-am

Figure LP14.2 Clay tablet from the British Museum: letter, circa 1800 BCE

TEXTBOX LP14.1 **TRANSCRIPTION NOTES**

- The symbol š represents a voiceless palate-alveolar fricative, IPA [ʃ].
- The symbol ṭ illustrates a voiceless retroflex stop, typically pronounced with contact between the bottom of the tongue and the postalveolar region.
- Vowels with a macron (horizontal line) over the top are phonetically lengthened.
- There are two **pharyngeal** consonants made by retracting the tongue root toward the back of the **pharynx**. The symbol ḫ represents a voiceless pharyngeal fricative, while ʕ represents a voiced pharyngeal fricative or approximant.

In (1) through (8), you can see how to "decode" the first few lines of the letter in Figure LP14.2. Each line is given in sign-for-sign transliteration, as well as a normalization, which attempts to reproduce what the Akkadian actually sounded like (how this was determined is an interesting but complicated story beyond the scope of the current chapter), followed by both a gloss and a translation:

(1) a-na be-lí-ia
ana bēli-ya
to lord-POSS.1SG
'to my lord

(2) qí-bí-ma
qibī-ma
say.IMP-FOC
say:

(3) um-ma ta-tu-ur-ma-tum GÉME-ka-ma
umma *tatūr-mātum* *amat-ka-ma*
QUOT Tatūr-mātum maid-POSS.2SG-FOC
(this is what) your maid Tatūr-mātum said:

(4) ^{d}UTU ù ^{d}A.A ka-al-la-tum
šamaš *u* *Aya* *kallātum*
Šamaš and Aya bride
Šamaš and the bride Aya

(5) aš-šu-mi-ia da-ri-iš u_4-mi
aššum-iya *dāriš* *ūmī*
sake-POSS.1SG eternity.GEN day.PL
forever for my sake

(6) li-ba-al-li-ṭú-ka
liballiṭ-ū-ka
COND.keep.alive-3PL-2SG
may keep you well

(7) aš-šum en-ke-tim ù er-bi-i
aššum *enkētim* *u* *erbī*
concerning fish and locusts
concerning the fish and the locusts

(8) ša ú-na-aḫ-i-du-ka
ša *una'idu-ka*
which 1SG.instruct.PST-2SG
that I instructed you (about)'

14.3 The Consonantal Roots of Akkadian (and Other Semitic Languages)

In Chapter 4, we saw that morphemes do not always have to be pieces of words such as prefixes or suffixes. In the English nouns *man/men* and *goose/geese*, for example, plurality is not marked by a suffix but rather by a change of vowel inside the word itself. Similarly, English verbs such as *drink/drank* mark the past tense not by a suffix *-ed*, but by an internal vowel change. In English, such marking of grammatical categories in this way is restricted to a few odd nouns and a few irregular verbs. (There are also some relics of a causative pattern marked by an internal vowel alternation, e.g., *fall–fell* 'make fall,' *sit–set* 'make sit,' *rise–raise*, etc.) But there are languages where such internal vowel alterations are far more widespread and far more systematic. The Semitic verb offers one of the most elaborate and sophisticated examples of such vowel alterations among the world's languages. The vowels change so much, in fact, that they are not deemed to be a part of the verbal root at all. The verbal root in the Semitic languages is generally described as consisting only of consonants. The Akkadian root for 'to

SIDEBAR LP14.4
See Section 4.6 for a discussion of morphemes that change the internal form of a word.

put' or 'to place' is š-k-n, and the root for 'to cut' or 'to block' is p-r-s. This consonantal root is an abstract notion, of course, because it is not pronounceable as such, and never appears in this way in practice. The consonantal root comes to life only when it is superimposed on a **template**, which is a pattern of vowels (and sometimes additional consonants) that has three empty slots for the three consonants of the root. To take one example, the Akkadian template *i*◯◯*u*◯ denotes the past tense in the third-person masculine, so if we insert the root š-k-n into the template, we get:

Root: š-k-n
Template: i◯◯u◯ (past tense, third-person masculine)
i(š)(k)u(n) ('he placed')

A different template *i*◯*a*◯◯*a*◯ forms the present tense. Here, in addition to the vowels that appear between the root consonants, the second root consonant is also doubled, or **geminated**. So if we insert the root p-r-s into the template, we get:

Root: p-r-s
Template: i◯a◯◯a◯ (present tense, third-person masculine)
i(p)a(r)(r)a(s) ('he blocks')

There are a very large number of such templates in Akkadian (and in other Semitic languages), and they are used to mark all manners of verbal distinctions. For example, different templates denote the different tenses, aspects, moods, and other inflectional categories of the verb. Here are a few examples of templates. Look at their structures, and then try out Stop and Reflect LP14.1:

Template	Function	Meaning
i◯◯u◯	PST.3SG.M	he X-ed
i◯a◯◯a◯	PRS/FUT.3SG.M	he X-s/will X
i◯ta◯a◯	PRF.3SG.M	he has X-ed
◯u◯u◯	IMP.2SG.M	X!
◯ā◯i◯um	PTCP.3SG.M	someone who X-s
◯a◯◯um	VERBAL.ADJ.3SG.M	(an) X-ed (thing)
◯a◯ā◯um	INF	to X

STOP AND REFLECT LP14.1 **PRACTICE WITH TEMPLATES**

Use the templates listed and the root *š-k-n* 'to place' to figure out the words for 'he will place,' 'place (it)!,' and 'to place.'

Notice that in addition to different vowels between the root consonants and gemination (doubling of a consonant, as in the present-tense template above), sometimes there are consonants which are included as part of the templates themselves. The perfect tense, for instance, has a *t* infix as part of the template.

This algebraic-seeming template system is not just an artifice of our description. Experiments have shown that both the consonantal roots and the templates have psychological reality for speakers of Semitic languages. To put it simply, while to English ears, forms which have no vowels in common, such as *parsum* (verbal adjective), *iprus* (past), or *iparras* (future) all sound quite dissimilar, for speakers of Semitic languages, such forms are perceived as closely related variations on a theme: the consonants p-r-s.

The template system is far richer than what has been presented so far, because in addition to the basic distinctions of tense, mood, and aspect presented above, different templates are also used to mark other nuances of the action such as passive, causative, reflexive, intensive, iterative (repeated or habitual action). Here are several examples of these:

i◯ta◯◯a◯	ITR.PST.3SG.M	he continually X-ed
i◯◯a◯i◯	PASS.PST.3SG.M	he was X-ed
uša◯◯i◯	CAUS.PST.3SG.M	he caused to X

This dimension of variation is perpendicular to the tense-mood-aspect templates. For example, there are separate passive templates for the past, the present, the perfect, and so on, resulting in a complex two-dimensional network of templates. Several of these are shown in Table LP14.1 (practice applying them in Stop and Reflect LP14.2), but in reality there are nearly a hundred such templates.

STOP AND REFLECT LP14.2 **MORE PRACTICE WITH TEMPLATES**

Again using root *š-k-n* 'to place,' try determining the Akkadian words for the perfect 'he had placed,' the past passive 'it was placed,' and the causative infinitive 'to cause it to be placed.'

As if this weren't enough, the two-dimensional mesh in Table LP14.1 needs to be combined with yet another dimension: subject agreement, or the different persons that are also marked on the verb. However, these markings for person are not indicated by further internal vowel alterations, but rather in a somewhat more typical fashion, using prefixes and suffixes. Here are a few examples for the simple past tense:

TABLE LP14.1 Partial network of possible Akkadian three-consonant templates

	PAST	PRESENT	PERFECT	INFINITIVE	IMPERATIVE
BASIC	i◯◯u◯	i◯a◯◯a◯	i◯ta◯a◯	◯a◯ā◯um	◯u◯u◯
ITERATIVE	i◯ta◯◯a◯	i◯tana◯◯a◯	i◯tata◯◯a◯	◯ita◯◯u◯um	◯ita◯◯a◯
PASSIVE	i◯◯a◯i◯	i◯◯ a◯◯a◯	itta◯◯a◯	na◯◯u◯um	na◯◯i◯
CAUSATIVE	uša◯◯i◯	uša◯◯a◯	ušta◯◯i◯	šu◯◯u◯um	šu◯◯i◯

I blocked	a-ⓅⓇuⓈ
you (male singular) blocked	ta-ⓅⓇuⓈ
you (female singular) blocked	ta-ⓅⓇuⓈ-ī
you (plural) blocked	ta-ⓅⓇuⓈ-ā
he/she cuts	i-ⓅⓇuⓈ

Finally, in addition to subject agreement, there are also suffixes that mark pronominal direct and indirect objects. So, for instance, *aṭrud* means 'I sent,' and *aṭrud-akkuš-šu* 'I sent him to you,' where *-akkuš* means 'to you' and *-šu* means 'him.'

14.4 Messiness due to Sound Changes

The system as presented so far may seem to be the paragon of regular perfection, but in reality, there are many exceptions that make the situation on the ground look much less neat. In the third millennium BCE, Akkadian underwent several drastic sound changes as a result of intense contact with Sumerian, a non-Semitic language. This is one major source of untidiness in the language's verbal system. Sumerian speakers evidently had difficulty with the many glottal and pharyngeal consonants of the Semitic languages (sounds that can still be heard in Arabic today), and during the centuries of intense contact with Sumerian, Akkadian lost most of these "difficult" consonants. However, since many three-consonantal roots originally contained such consonants, the drastic sound changes in Akkadian often obscured the three-consonantal nature of the roots. For instance, the original Semitic root ʕ-r-b ('enter') had as the first root consonant the pharyngeal fricative ʕ. When inserted into the template for the simple past, i◯◯u◯, it originally resulted in the form *iʕrub* 'he entered.' But by the end of the third millennium, the pharyngeal had disappeared, so the sequence *iʕ* was reduced to a long vowel ī to give the form *īrub*, where the three-consonantal pattern is no longer so apparent.

While these irregularities, which developed in Akkadian because of contact-induced sound changes, are of fairly late origin, there are other exceptions in the system which are in fact far older, and which, as we shall see in a moment, are actually relics of very early stages in the evolution of the Semitic verbal system.

14.5 Historical Development

How can a system like that of the Semitic verb have come into being? Research on **grammaticalization** has shone much light on the origin of affixes, even on the emergence of complex paradigms of affixes. At first sight, the abstract idea of a purely consonantal root and the algebraic template system seem to defy historical explanation through the blind mechanisms of change, as they appear to have been designed on the table of a gifted architect. In Deutscher (2005: chapter 6), however, I tried to show how such a system could nevertheless have emerged through entirely normal diachronic processes, in particular, through cycles of sound change and **analogy**. While

SIDEBAR LP14.5
For an introduction to grammaticalization, see Section 12.3.1.

SIDEBAR LP14.6
See Section 12.3.3 for a discussion of sound change and analogy.

a full presentation of the detailed argument goes beyond the scope of this chapter, the following discussion presents some of the basic principles of this claim. Interestingly, the clues for understanding how the notion of a consonantal root system could have emerged are all found in various types of exceptions in the verbal system.

The most important of these exceptions can be called the "quirk vowel" (in traditional grammars it is called the "root vowel"). I explained above that vowels are not part of the root and only determine the grammatical nuance. While this is true in general, two of the simplest templates (simple past and simple imperative) flout this rule, since they have an arbitrary vowel between the last two root consonants, that is, an unmotivated vowel which depends on each root itself. Thus, while some roots, like p-r-s, adhere to the template i◯◯u◯ in the simple past (*iprus* 'he cut'), other roots, such as p-t-l 'twist,' have a different vowel between the last root consonants. The past form of p-t-l is not *ipt**u**l* but *ipt**i**l*. The difference in the vowel does not play any grammatical role. Rather, when you learn the language, you simply have to memorize the "quirk vowel" of each root just as you have to memorize the vowels of every English verb.

While the quirk vowel seems like an unmotivated irregularity from the **synchronic** perspective of the mature Semitic system, there are various indications that this quirk vowel is in fact an extremely old feature, a relic from the time *before* the root-and-template system had started to develop. The simple past tense thus points to a period when the ancestor language still had more "normal" roots, like *prus* or *ptil*, that consisted of both vowels and consonants.

There are further revealing exceptions in the verbal system that suggest how such normal roots were transformed into the purely consonantal design. The first step seems to have been the development of a single internal vowel alteration that came to mark a distinction in tense, a situation rather similar to English verbs such as *sit–sat* or *drink–drank*. I mentioned earlier that the future tense is formed with the template i◯a◯◯a◯. This is true of regular verbs, but there are some verbs that disobey this rule. They are called "hollow," because they have only two consonants in their root instead of three (e.g., m-t 'die,' *imūt* 'he died'). The hollow verbs don't follow the regular future-tense template, and instead simply change their vowel to *a: imūt – imât* 'he died' – 'he will die.' In the attested stages of Akkadian, such hollow verbs amount to only a few exceptions, but various factors indicate that there were many more of them in earlier stages of the language. Indeed, it seems that the pattern shown by hollow verbs – a single internal vowel mutation – was the earlier pattern that marked the future tense of *all* verbs. So originally the corresponding future form to the past tense *iprus* ('he blocked') would have been just *ipras* (see Textbox LP14.2).

The earlier stage of the verbal system which we have so far reconstructed had only one internal vowel alteration to mark tense (*iprus – ipras*), had "normal" roots with both consonants and vowels, and was not even dominated by roots with three consonants. How could this system have metamorphosed into the mature Semitic system, with purely consonantal roots of predominantly three consonants? A relatively easy part of the question is how more three-consonant roots emerged. There are various indications that one of the main paths for this process involved cycles such as the English ones below, where verbs become longer through piling up of word-class-changing affixes:

TEXTBOX LP14.2 **MUTATIONS IN INDO-EUROPEAN**

It is not difficult to imagine how an internal vowel mutation (*iprus – ipras*) could have emerged, because there are parallel developments in other languages, from more recent times. The most famous is the *i*-mutation of Germanic, which is responsible for the vowel alteration between English nouns such as *man – men*, as well as causative English verbs such as *to fall – to fell*. The original plural of *mann* in Germanic would have been formed regularly, with a suffix *-iz: *mann-iz*. But by a process of assimilation (specifically vowel harmony), the vowel *i* of the suffix colored the preceding *a* to *e*, resulting in *menn-iz*. The final *-iz* was later reduced, leaving only *men*.

Similarly, the causative form 'to fell' goes back to a Proto-Germanic suffix *-ian* (originally from a Proto-Indo-European verb *yo 'make'). **fall-ian* 'fall-make' originally became **fell-ian* because of the *i* of the suffix, with the ending entirely eroding later on, leaving only *fell*. The Semitic vowel alteration to *a* would not have developed through an assimilation to an *-i* suffix, of course, but perhaps through the effect of a laryngeal. At any rate, the basic principles could have been fairly similar.

VERB	>	NOUN	>	ADJECTIVE	>	VERB
(to) tail (=cut)		tailor				(to) tailor
(to) profess		profess-ion		profess-ion-al		(to) profess-ion-al-ize

In the Semitic languages, such augmentations mainly involved prefixes rather than suffixes. So a root that started out with two consonants, e.g., *kun* 'to be firm,' was turned into an adjective *ša-kun* 'firm/durable,' and then (through functional shift) back to a verb *šakun* 'to place, to establish.' At some stage, as more and more such augmented verbs emerged, roots with three consonants came to dominate the scene.

The trickier question is to understand how one simple vowel alteration (*iprus – ipras*) could have led to the idea of a purely consonantal root. The details are complex, but in order to understand the consonantal root, we actually only need to investigate how one further vowel alteration emerged, this time between the first two root consonants. There are two possible places for internal vowels between three consonants: $\bigcirc v_1 \bigcirc v_2 \bigcirc$, or Position 1 and Position 2, for short. The vowel alteration in Position 1 could have emerged through a combination of sound change and analogical **back-formation**. The following discussion roughly describes the process. Augmented verbs (verbs like *šakun*, which had acquired their third consonant through a prefix) had a vowel in Position 1 (the vowel of the original augment prefix). But at some stage, a regular type of sound change deleted this vowel in *some* phonetic environments. In particular, this sound change (called **syncope**) deleted the middle vowel from any sequence of three short vowels in a row. In verbal forms with prefixes, like the past-tense *i-šakun*, the middle short vowel was in Position 1: *i-šakun* > *i-škun*. But in verbal forms with suffixes, like the verbal adjective *šakun-um*, the middle vowel of the three was in Position 2: *šakun-um* > *šakn-um*. This is illustrated in Figure LP14.3.

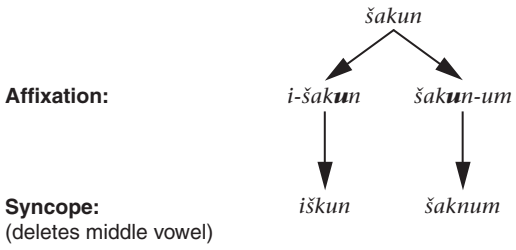


Figure LP14.3 The effects of syncope on forms with prefixes (left) and suffixes (right)

This process was a "blind" sound change, conditioned only by the phonetic environment, not by meaning. But the result of this purely phonetic change created a pattern in which one verbal form (*šakn-um*) had a vowel in Position 1, whereas another form (*i-škun*) had none (with the situation reversed in Position 2). For speakers in later generations, who were no longer familiar with the phonetic motivation for the sound change, this pattern could have come to be perceived as a bearer of a meaningful grammatical distinction. And once it was perceived as such, it could have been extended by analogical back-formation to roots like *prus* (which never had an augmented prefix to begin with), to produce a verbal adjective *pars-um*, effectively inserting a vowel into Position 1 that had never originally been there.

Once this pattern had been generalized to all verbs, it resulted in a system where the different verbal forms no longer shared any vowels: *iprus* ('he blocked'), *ipras* ('he will block'), *pars-um* ('blocked'). The root's original vowel (the *u* in Position 2) appeared in only one verbal form, so it no longer seemed to be the "default" vowel, but rather merely the vowel of one particular tense. Moreover, vowels were not shared between all verbal forms in either position, so both positions were seen to participate in the variation according to grammatical function.

For a new generation of speakers, all that remained as a uniting factor between the different verbal forms were the three consonants, or the consonantal root. For example, what now bears the core meaning 'to block' is no longer a pronounceable chunk *prus*, but the three consonants p-r-s. So the consonantal root system is simply based on the emergence of verbal forms that share the same consonants, but no longer share any vowels, and where both vowel positions are grammatically variable. The templates such as i◯◯u◯, i◯◯a◯, ◯a◯◯um are really just a way of representing this pattern, whereby the internal vowels are primarily determined by the grammatical nuance, and not by the whim of the root.

CHAPTER SUMMARY

The Akkadian clay tablets provide a fascinating lens on both Mesopotamian civilization and an early stage of Semitic, a language family famously known for its tri-consonantal roots and templatic morphology. The system we have arrived at through this description of prehistoric changes is still very simple and is worlds away from the dozens of templates in the attested stages of the language. Deutscher (2000) shows how some of the more elaborate templates could have emerged (such as passive, causative, reflexive, intensive)

through relatively straightforward paths of grammaticalization. Once a few such templates begin to emerge, speakers can start forming higher-level analogies, by superimposing existing templates onto one another (e.g., if a passive template emerged in the past tense, it could have been superimposed on the future tense, to give a future passive template). Thus, the complexity of the system is a self-amplifying process, in which the templates can interact by analogy in a grid-like way. A small number of templates might therefore have proven enough of a "critical mass" to trigger an explosion in the number of new templates, leading to the breathtaking sophistication of the attested system.

TEXTBOX LP14.3 GLOSSING CONVENTIONS USED IN THIS LANGUAGE PROFILE

Convention	Meaning	Convention	Meaning
1	first person	M	masculine
2	second person	PASS	passive
3	third person	PL	plural
CAUS	causative	POSS	possessive
COND	conditional	PRF	perfect aspect
FOC	focus	PRS	present
FUT	future tense	PST	past tense
GEN	genitive	PTCP	participle
IMP	imperative	QUOT	quotative
INF	infinitive	SG	singular
ITR	iterative	VERBAL.ADJ	verbal adjective

SUGGESTIONS FOR FURTHER READING

Benett, **Patrick**. 1998. *Comparative Semitic linguistics*. Winona Lake, Ind.: Eisenbrauns.
This is a useful introduction to Semitic linguistics aimed at beginning students.

Deutscher, **Guy.** 2005. *The unfolding of language*. New York: Metropolitan.
Chapter 6 of this book gives a fuller account of the diachronic development outlined above.

Huehnergard, **John.** 1997. *A grammar of Akkadian*. Atlanta, Ga.: Scholars Press.

This book is a study grammar of Akkadian, suitable for self-study.

Kouwenberg, **N. J. C.** 2010. *The Akkadian verb and its Semitic background*. Winona Lake, Ind.: Eisenbrauns.

This book is an advanced magisterial history of the Akkadian and Semitic verbal system.

Oppenheim, **A. Leo.** 1964. *Ancient Mesopotamia: Portrait of a dead civilization*. University of Chicago Press.

This book is an introduction to the history and culture of Mesopotamia.

Web Resource

Web Resource: http://knp.prs.heacademy.ac.uk/cuneiformrevealed/An introduction to the world of Akkadian and the cuneiform writing system, as well as many other useful links.

EXERCISES

1. Based on the information about different templates given in the chapter, and using the root š-ṭ-r, which means 'write' or 'inscribe,' determine how to say in Akkadian: *you (pl.) wrote, he writes, write!* (imperative or command form), *he made (someone) write, (something) is written.*
2. The verb *liballiṭ* is a precative form (i.e., a wish form) of the root b-l-ṭ 'be well/healthy,' and means 'may he make (someone) well.' Can you identify the template on which the root was superimposed? In the letter quoted at the beginning of the chapter, there is a form *liballiṭūka*. What elements have been added to the form and how do they change the meaning?
3. The form *iztanammar* means 'he keeps singing.' Based on the templates in the chapter, can you identify the consonants of the Akkadian root 'sing'?
4. In the following word written in the cuneiform script (Figure LP14.4), the first sign stands for h*a*, the third for *mu*, the fourth for *ra*. You can discover what the second and the fifth signs stand for based on the transcription of the letter presented earlier in Figure LP14.2. Can you figure out what name is written here?

Figure LP14.4 Word written in cuneiform script (for Exercise 4)

GLOSSARY

absolutive: denotes both a case and a grammatical relation based on morphosyntactic behavior where the less agentive core argument of a transitive verb (the P) shares grammatical behavior with the single core argument of an intransitive verb (the S); opposed to ergative.

abstraction: a shift in meaning from more concrete to more abstract, e.g., the English adverb *besides* was used earlier for concrete spatial location but is now used with the more abstract meaning 'in addition, moreover.'

accent: the phonological characteristics of a speaker's variety.

accessible activation state: an idea that is not currently actively focused on in a discourse, but which has been mentioned earlier and/or is in the periphery of the addressee's consciousness.

accusative: a grammatical **case** that marks noun phrases that occur as objects of clauses.

acoustic phonetics: the study of the physical characteristics of speech sounds, such as duration, frequency, and intensity.

activation state: an assumption that a particular referent or idea is **given, new**, or **accessible** in the mind of the interlocutor.

active articulator: an articulator which moves in the production of a sound; contrasts with **passive articulator**.

active (voice): a construction in which the semantic agent of a transitive verb is the grammatical subject; contrasts with **passive (voice)**.

adaptation: the replacement of a foreign phoneme in a loanword with the nearest phonetic equivalent in the native language.

addressee: the person to whom an utterance is addressed (i.e., the person one is speaking to); sometimes referred to as "the hearer."

adjective: a word class whose members can occur either modifying a noun in a noun phrase or within a predicate; adjectives specify attributes of the referent of the associated noun.

adposition: a word class that occurs with a noun phrase and that indicates the grammatical, spatial, temporal, or logical relationship of the noun phrase to another element of the clause; may be a preposition (which occurs before the noun) or a postposition (which occurs after the noun); adpositions are typically **particles**.

adpositional phrase: a syntactic constituent headed by an adposition; includes prepositional phrases and postpositional phrases.

adverb: a cover term for words that are not lexical nouns, verbs, or adjectives, but that still have lexical (as opposed to grammatical) content.

adverbial clause: a dependent clause that is linked to a matrix clause by an adverbial conjunction or affix that specifies the semantic relationship between clauses, most commonly manner, time, location, quantity, condition, or cause.

adverbial conjunction or affix: a free word or affix that specifies the semantic relationship between clauses, e.g., conditional (English *if*), causal (*because*), temporal (*when*).

affective filter: the emotional component of an L2 learner's conscious learning process, which involves how comfortable or uncomfortable he or she is when speaking an L2.

affix: a morpheme attached to a root, e.g., the English plural *-s*.

affricate: a sound produced by combining a stop with a following fricative in rapid succession.

African Diaspora: a term that refers to the movement of peoples within and outside of Africa to locations throughout the world and the commonalities and communities that resulted from these circumstances and experiences.

African-American English (AAE): a variety of English spoken primarily by African-Americans; it is similar to other varieties of English but has its own linguistic system and contains a number of distinctive grammatical, phonological, and lexical features.

agent: a semantic case role denoting the volitional instigator (the "do-er") of an activity or event.

agentivity: the degree of volition, control, or intention of an agent or potential agent.

agglutinative: a morphological structure in which the boundaries between morphemes are clear-cut and generally encode a one-to-one morpheme-to-meaning ratio; contrasts with **fusional**.

agreement: a type of inflection in which one word indexes semantic categories of another word.

alignment patterns: different grammatical relations based on whether the single core argument of an intransitive verb (also called the S) receives the same grammatical treatment (i.e., aligns with) the more agentive core argument of a transitive verb (the A) or the less agentive core argument of a transitive verb (the P). S/A versus P alignment is referred to as nominative-accusative alignment with the S/A defining subject and the P defining object; A versus S/P alignment is referred to as ergative-absolutive alignment with the A being the ergative and the S/P the absolutive.

allomorph: a phonetic variant of a morpheme, often motivated by the same phonetic forces that govern the occurrence of allophones; allomorphs of the English plural suffix include /s/, /z/, and /əz/.

allophone: two or more sounds that occur predictably in mutually exclusive environments, i.e., in **complementary distribution**.

alternation: multiple forms of a phoneme, morpheme, syntactic construction, etc.

alternation switching: codeswitching that occurs between clauses.

alveolar: a sound made by placing the tip of the tongue against the alveolar ridge.

alveolar ridge: the hard ridge just behind the teeth before the upper surface of the mouth becomes more domed in shape.

ambitransitive: a verb that can be used both transitively (with two core arguments) and intransitively (with a single core argument); e.g., English *he tore his clothes; his clothes tore*.

analogical remodeling: in language change, the process of applying regular patterns to irregular forms, thus "repairing" or remodeling them by analogy, e.g., changing the plural of *syllabus* from *syllabi* to *syllabuses* by analogy with the regular English plural *-s*.

analogy: a process by which speakers seek to repair perceived irregularities in their language; speakers remodel "exceptions" by analogy to other patterns.

analytic: see ***isolating***.

Anglicist hypothesis: a position on the origin of African-American English, suggesting that the variety developed from the acquisition of English by Africans and African-Americans.

antepenultimate syllable: the third-to-last syllable of a word, the syllable preceding the **penult;** sometimes called the **antepenult.**

antonyms: broadly, two or more lexemes or other expressions with opposite meanings; narrowly, two or more lexemes that are gradable **contraries**, so denote opposite ends of a spectrum, such as *short/tall* (the relation among antonyms is called **antonymy**).

applied linguistics: the field that considers how linguistics can be applied to situations in the world; includes language teaching, computational linguistics, forensic linguistics, language documentation, speech pathology, and speech and hearing sciences.

approximant: a sound produced through a slight narrowing of the vocal tract, but not enough to cause noise or a complete obstruction.

argument: a noun phrase holding a particular grammatical status in relation to a verb; can be **core** or **oblique**.

articles: a small class of grammatical particles that obligatorily occur in some noun phrases in some languages; often index the definiteness (identifiability) of a noun, e.g., *the* and *a(n)* in English.

articulatory effort: the degree of muscular effort required for the articulation of a particular sound.

articulatory phonetics: the study of how the vocal organs produce speech.

aspect: a grammatical category that signals the temporal consistency of an event or state, e.g., ongoing, completed, or habitual; often (but not always) marked on verbs or indicated by auxiliaries.

aspiration: the puff of air created by a delay in the onset of voicing upon the release of a stop.

assimilation: the process whereby one sound comes to share some phonetic property or cluster of properties with another sound in its environment; the most common type of phonological process; can involve voicing, nasalization, or point of articulation.

associative plural: a grammatical category typically marked by an affix on personal names; most commonly it refers to two or more people associated with the person who is named; e.g., Nepali *manoj-haru* 'Manoj and his group/kin/friends.'

auditory phonetics: the study of perception of phonetic properties of speech by the auditory system.

autoglossonym: (lit. "self-tongue-name") the name by which speakers of a language refer to that language; for example, *Deutsch* is the autoglossonym of the language that English speakers call German, *español* is the autoglossonym for the language known in English as Spanish, and *English* is the autoglossonym for English.

automaticity: the ability to process (linguistic) input and output quickly, unconsciously, and effortlessly, i.e., automatically, without having to think about each word or step in the process.

autonym: see ***endonym***.

auxiliary verbs: a small subclass of verbs with fixed positions and abstract meanings; typically appear along with or instead of a main verb.

back-formation: a word-formation process based on an **analogy** in which the structural interpretation of one word is applied to a different word; frequently involves applying a morpheme boundary to a word that did not originally contain one, e.g., *ham-burger* from original *Hamburg*.

backness: a parameter for describing vowel sounds based on how far back the raised part of the tongue is during articulation; one of three main dimensions for describing vowels; may be *front, back*, or *central*.

behaviorism: a theory from psychology suggesting that if an L2 learner hears a stimulus in an L2 and repeats the word or sentence enough times, it will become a habit and can then be used to communicate successfully.

beneficiary: a semantic case role denoting an entity who benefits from an action.

bidialectal: able to speak two dialects or varieties of a particular language.

bidialectalism: the ability to speak two dialects (also *multidialectalism f*or two or more dialects).

bilabial: sound that involves a narrowing or complete closure of the upper and lower lip.

bilingual: a person who speaks two different languages or a society where primarily two languages are spoken; contrasts with **monolingual** and **multilingual**.

borrowing: the incorporation of a word or grammatical element from one language into another.

bound morpheme: a morpheme that cannot stand on its own as a word, e.g., English *un-*.

broad phonetic transcription: a level of phonetic transcription where detailed nuance (such as nasalization of vowels before nasal consonants) is not transcribed; contrasts with **narrow transcription**.

calque: a word or expression created via morpheme-by-morpheme translation from a source language.

case: the morphological marking of the syntactic and (in some cases) semantic relations that hold between the noun phrases and the verb of a sentence.

causative: a construction type that typically increases by one the number of core arguments in a clause; in a causative clause an agent typically causes a patient to perform some action; also used to refer to an affix that adds the meaning 'cause' or 'make,' e.g., the English *en-* of *en-able*.

central: a sound produced so that air flows through the center of the mouth rather than over the sides of the tongue; contrasts with **lateral**.

Child-Directed Speech (CDS): a special register with distinctive linguistic properties that is used in certain societies for addressing very young children.

CHILDES (Child Language Data Exchange System): an online system of resources on language acquisition, including an archive of children's speech from various languages, programs for data analysis, and instructional materials.

circumfix: an affix that surrounds the root, with one part before it and another after it; circumfixes add meanings beyond those of the components.

citation form: the common, "dictionary" form of a word, with little or no inflection.

classifier: a word class whose members serve to classify a noun by shape, animacy, function and/or other criteria.

clause: a syntactic unit typically consisting of a verb (in some languages within a verb phrase), its noun phrase arguments, and adverbial elements (usually adverbs and adpositional phrases).

clause chain: a syntactic construction made up of one or more non-final clauses followed by a final clause; verbs in non-final clauses are marked by special suffixes, sometimes indicating switch reference.

climax: the culmination of a narrative plot, typically at the end of a **narrative**; something unusual or unexpected which makes the narrative worth listening to and telling.

clitic: a morpheme which is phonologically bound but which is able to combine with a broader range of stems than an **affix**; clitics frequently are not restricted to attaching to words from a

single lexical class and have semantic scope over phrases as opposed to words; an **enclitic** is bound to the end of a word while a **proclitic** is bound to the beginning of a word.

closed syllable: a syllable that ends in a consonant.

closed word class: a word class, whose members are often small in number, which is resistant to new members.

co-articulation: an articulatory overlap between sounds in actual speech so that speech organs are preparing to produce the next sound while still producing the first.

co-construction: the process by which a linguistic unit, such as an utterance, conversation, or narrative, is produced by more than one person.

coda: a consonant or consonant cluster that follows the nucleus within the syllable.

coded content: the meanings conventionally associated with a linguistic form; contrasts with **utterance meaning**.

codeswitching: the use of two or more languages in the same interaction or utterance, while conforming to the phonological and grammatical system of each language.

cognates: words in genealogically related languages that are descended from the same word in a common parent language, e.g., Breton *dek*, Irish *déich*, Latvian *desmit*, Czech *deset*, Greek *deka*, Farsi *dah*, Hindi *das*, Dutch *tien*, Frisian *tsien*, Norwegian *ti*, Icelandic *tíu*, and English *ten*.

cognition: the mental processes that take in information from the environment, use it to form **mental representations**, and apply this stored knowledge in activities such as learning, thinking, speaking, and remembering.

cognitive linguistics: the study of how language is related to how humans learn and process information.

collocations: pairs of words that are frequently used together, and may be learned, processed, and produced as a chunk, e.g., *light lunch, pretty much, right now*, etc.

communicative competence: the knowledge of grammatical rules as well as the ability to use them in culturally appropriate ways; includes grammatical and sociolinguisitic competence.

community of practice: a social group that jointly engages in culturally meaningful activities and often develops distinctive ways of speaking.

comparative: an adjective, adverb, or similar morpheme that compares one thing to another; for example, the *-er* suffix in *an elephant is bigger than a mouse*, or the word *more* in *she has more money now*; see also ***superlative***.

comparative method: a procedure by which sounds, morphemes, and vocabulary of an earlier language can be reconstructed by comparing forms in the daughter languages.

complement clauses: dependent clauses that function as noun-phrase arguments of verbs.

complementary antonyms (aka complemetaries): a pair of expressions that make systematically and absolutely opposite contributions to the meaning of an expressed proposition: e.g., *on/off, once/never, real/imaginary*; can neither both be true nor both be false at any time; one is always true, and the other false.

complementary distribution: in phonology, a distributional pattern that occurs when two phonetically similar sounds do not occur in the same phonetic environment; indicates that the two sounds are allophones of a single phoneme.

complex predicate: two or more words that act as a single predicate of a single clause; the clause has only one set of arguments.

complex sentence: a sentence with more than one clause.

complicating action: a sequence of events in a **narrative** which are told after the introduction and which lead to the climax.

compositionality (principle of): the idea that the meaning of a complex expression should be a regular function of the meanings of its parts.

compositional semantics: the study of how the meanings of complex expressions are built up from, or otherwise related to, the senses of their individual parts; see also ***lexical semantics***.

compound: a word composed of two roots, stems, or words.

computational linguistics: the study of language and computers; includes speech recognition (computers recognizing human speech) and speech synthesis (computers producing speech).

conceptual metaphor: a figure of thought that allows one complex frame to be conceptualized in terms of another frame; e.g., UP is GOOD (the evaluative frame associated with *good* is conceptualized in terms of the spatial frame associated with *up*).

concordance: an index of all the words in a corpus along with their immediate linguistic contexts and some information about the frequency and location of each.

conditioned sound change: a sound change that occurs only in certain environments; for example, Old English *k* has been lost in present-day English, but only at the beginning of words before *n*, as in *knight* or *knuckle*.

conjunctions: a class of words, typically particles, which conjoin two or more words, phrases, or clauses at the same level of structure.

connotation: any effect or association arising from the use of a meaningful expression, aside from its reference; contrasts with an expression's **denotation**, that is, its effects on reference.

consonant cluster: a group of two or three consonant sounds with no intervening vowels; also called a consonant blend.

consonant harmony: a type of assimilation in which one consonant is produced with the same place or manner of articulation as a nearby consonant; see ***vowel harmony***.

constituency test: an argument used to prove that a particular combination of words constitutes a syntactic **constituent**; common constituency tests include cohesiveness, replacement by a pronoun, fixed ordering of elements, and agreement.

constituent: a subpart of a higher unit.

constituent structure: the constituents of a unit and their structural relationships.

construal: the process of understanding an expressed meaning; the imaginative enactment of propositional contents in the mind of a language user.

constructed dialogue: a stretch of speech which intends to quote or reproduce the speech of another person but does not necessarily repeat the exact words of the quoted person.

constructionism: a newer approach to sociocultural linguistics which examines how speakers use linguistic variants to index social meaning and views language as creating social identity; contrast with **correlationism**.

constructions: fixed grammatical patterns associated with particular functions.

contact: see ***language contact***.

content question: a question that requires informative content in the answer, rather than a simple 'yes' or 'no' (e.g., *where did you go?*); also known as 'wh-questions' based on the spelling patterns of the English interrogative pronouns *who, what, where, when, which*, and *why*.

context: the interactional, physical, cultural, and social environment in which utterances are produced.

continuity hypothesis: the hypothesis in nativist acquisition theory that children have the same syntactic categories and rules as adults from the outset.

contrary antonyms (aka contraries): a pair of lexemes or other expressions that denote opposite ends on a scale of alternatives: e.g., *short/tall, quiet/loud, eager/shy*; cannot both be true at any time, but both may be false.

contrastive distribution: the situation in which two or more sounds occur in the same position in otherwise identical words and the words have different meanings (i.e., the sounds occur in **minimal pairs**); sounds that are in contrastive distribution are separate phonemes; e.g., the English words *pat* and *bat* illustrate that /p/ and /b/ are in contrastive distribution and so constitute separate phonemes in English.

convention: a customary way of doing something in a community; an arbitrary behavior that people adhere to because they expect others to do the same.

conversational topic: a sequence of related ideas expressed through substantive intonation units.

converse antonyms (aka converses): a pair of lexemes or other expressions that denote the same situation from differing or "opposite" perspectives, e.g., *give/take, learn/teach, above/below*.

coordination: the combination of two independent elements of the same type using a conjunction; in clause-combining, refers to the formation of a complex sentence by linking two clauses using a conjunction; contrasts with **subordination**.

copula: a special type of verb, such as *be* in English, which denotes a relation between two noun phrases (e.g., *he is a teacher*) or between a noun phrase and an adjective (e.g., *he is tall*).

copula clause: a clause which relates a copula subject to a copula complement, usually using a copula verb.

copula complement: a noun or adjective which is related to the subject in a copula clause.

copula subject: the subject noun phrase of a copula clause, which is related to another noun or an adjective.

core argument: an argument that has a direct grammatical relationship with a verb.

coreference/coreferential: two or more morphemes, words, or other linguistic forms that index (i.e., point to, refer to) the same entity (i.e., the referent, thing referred to).

corpora: see ***corpus***.

corpus: (pl. *corpora*) a database containing collected recordings of spoken or written language.

corpus linguistics: a methodology for linguistic analysis which examines statistically significant patterns over very large sets of discourse data with the help of computers.

corpus planning: a phase of **language planning** in which the "body" of the language is developed, such as its writing system, vocabulary, and grammar.

correlationism: a traditional approach to sociocultural linguistics which seeks correlations between linguistic variants and social categories and views language as a reflection of social identity; contrast with **constructionism**.

correspondence set: in historical reconstructions, a group of sounds taken from cognate words or morphemes that are hypothesized to have descended from a single source.

creaky voice: irregular relaxed vibrations superimposed on normal voicing, often evident at the ends of spoken sentences.

creole: a pidgin which is learned by children as a native language and in the process undergoes significant development in order to meet the communicative needs of native speakers; e.g., Tok Pisin and Haitian Creole.

Creolist hypothesis: a position on the origin of African-American English, suggesting that the variety developed out of creole language(s) formed by enslaved Africans in contact situations.

Critical Period Hypothesis (CPH): the view that there is a biologically determined period for language to be learned naturally and perfectly; also referred to as the "sensitive period."

cross-sectional research: in first language acquisition, research which compares children in different age groups at a single point in time, either in their spontaneous speech or in their performance of an experimental task.

cuneiform: a writing system used in ancient Mesopotamia; the word cuneiform means 'wedge-shaped' and refers to signs made with a stylus on wet clay.

dative: a nominal case used with semantic recipient noun phrases of ditransitive verbs.

daughter languages: the genetically related languages within a family that are descended from a common "parent" language.

death: see ***language death***.

decategorialization: a process by which a word from a major lexical class, such as a noun, verb, or adjective, loses characteristics typical of that class, particularly inflection, e.g., English modals, which have developed from full verbs, but no longer show agreement: *He will have run*, not *He will-s ha-s run*.

declension: a traditional grammar term for the phonological forms that result from morphological case inflections.

definite: grammatical marking on a noun phrase which indicates identifiability, i.e., the speaker believes the addressee will be able to identify the referent; can be marked using an article (e.g., English *the*); contrasts with **indefinite**.

deictic expressions: words or constructions that point to some aspect of an utterance context, e.g., the place and time of an utterance (*here, now*), speaker (*I*), addressee (*you*).

deixis: a symbolic pointing relation between a linguistic sign and its context of utterance.

deletion: the phonological process by which a sound is lost (i.e., deleted).

demonstrative: a small closed class of words that occur in the noun phrase and that have a deictic ("pointing") function; typically differentiates **proximal** (e.g., *this*) and **distal** (e.g., *that*), in addition to other categories.

demonstrative pronoun: a demonstrative that occurs in the syntactic position of a pronoun, e.g., *that* in *That bothers me*.

denotation: the thing, state, or event that a linguistic expression refers to in the real world, or, more precisely, in some large set of possible worlds; the potential referents of an expression.

dense sampling: in language acquisition research, obtaining more frequent samples of child speech than is customary, e.g., at least five hours per week.

dental: a sound made by placing the tip of the tongue against the back of the upper teeth.

dependent: an element that modifies and is structurally subordinate to a head; can refer to words, phrases, and clauses.

derivation: a morphological process that creates new lexemes; derivational processes may change the word class of the stem they are added to, e.g., *govern/govern-ment* (verb → noun), though this is not always the case.

descriptive: an approach to language that describes how people actually use language without evaluating language use as either "right" or "wrong"; contrasts with **prescriptive**.

determiner: a cover term for a set of word classes that can occupy a single slot in a noun phrase; in English these include articles, demonstratives, and possessives.

diachrony: referring to two (*dia-*) or more points in time (*-chrony*); an example of a diachronic description would be a comparison of the vowel system of Old English with the vowel system of English today; contrasts with **synchrony**.

dialect: a variety of a language that is characteristic of a group defined on the basis of geographic or social factors, and that is mutually intelligible with other dialects of the same language despite differences in phonology or grammar.

dialect continuum: a situation in which speakers of adjacent language varieties can understand each other, but speakers of geographically separated varieties cannot.

dictionary: a standard way of representing a mental or social **lexicon** as a list of lexemes ordered alphabetically by spelling, each with information about its uses, its senses, and its pronunciations.

differential object marking: a case-marking pattern, common cross-linguistically, where objects only take a case-marker if they have certain semantic or discourse properties; an example is Spanish, in which only some objects are marked with the accusative preposition *a*.

diffusion: the spread of linguistic features from one language to another.

diglossia: a multidialectal or multilingual situation in which two varieties of speech (either dialects or languages) are used in different social domains; if three or more languages or dialects are involved, the term **multiglossia** is used.

digraph: an orthographic representation of a single sound with two orthographic characters (letters or symbols); e.g., *ng* for the English velar nasal consonant.

diphthong: a combination of vowels that functions as a single unit in the sound system; contrasts with **monophthong**.

direct object: a grammatical relation based on morphosyntactic behavior shared by the object of transitive verbs and the non-recipient object of ditransitive verbs.

discourse: a stretch of language larger than a phrase or sentence, such as a narrative or conversation; (the study of) spontaneous speech in its natural context.

discourse analysis: analysis of how speakers use linguistic structures in stretches of language larger than the sentence for the purposes of communication; includes language and interaction, conversational analysis, information structuring, etc.

discourse marker: a lexical item that is independent of the grammar of the clause but performs discourse-level or interactional functions.

discourse-marker switch: codeswitching that occurs at a discourse marker.

discourse particle: a **particle** with discourse-interactional functions, such as *oh, hmm*, or *yeah*.

dissimilation: the phonological process by which one sound becomes less like another nearby sound.

distal demonstrative: a demonstrative word that indicates things farther from the speaker and hearer (e.g., English *that*).

distributive: a grammatical category (typically in the verb) that indicates that an action occurs repeatedly across multiple individual participants.

ditransitive: verbs that take three core arguments.

double-object construction: a construction in English and some other languages in which the two objects of a ditransitive verb are positioned directly following the verb, with the semantic recipient first; e.g., *John gave Fred the book*.

dual: a grammatical number category specifying two; contrasts with **singular** (one) and **plural** (many).

ejective: an obstruent (usually a stop) made with glottal closure accompanying closure in the oral cavity; the glottis is raised to compress the trapped air, producing a characteristic "popping" sound upon release.

electroglottography (EGG): a technique that uses electrodes on the neck to examine the contact between vocal folds during the production of voiced sounds.

electromagnetic articulography (EMA): a technique employing sensors activated by an electromagnetic field to determine the movement of articulators in the mouth during speech.

ellipsis: this is when a linguistic unit, such as a word, phrase, or clause, is not uttered; the unexpressed unit can be understood in the speech context by the listener without explicit mention.

embed: in syntax, the positioning of a phrase, clause, or sentence as a constituent of another element of lesser or equal complexity; e.g., a clause that functions as a constituent of a noun phrase (such as a relative clause) is said to be embedded within the noun phrase.

emotive content: those aspects of an expression's meaning that reflect a speaker's attitude toward or evaluation of what is spoken about.
empirical: based on observable or experimental data.
enclitic: a **clitic** which occurs on the right edge of the word that it is bound to.
encyclopedias and encyclopedic knowledge: the mental encyclopedia contains knowledge that supplements the lexicon and includes information ***not*** included in a lexeme's semantic contents; more generally, encyclopedic knowledge encompasses both general and expert knowledge about the world.
endangerment: when a language begins to lose speakers, often from population loss or **language shift**, and becomes threatened with obsolescence or death.
endonym: a name for a language used by speakers of that language; also called an autonym; contrasts with **exonym**.
entailment: a relation between two propositions, P and Q, such that if P is true and P entails Q, then Q must also be true.
ergative: a grammatical relation based on morphosyntactic behavior (frequently case) unique to the more agentive argument of transitive and ditransitive verbs; ergative case thus marks the more agent-like argument of a transitive verb; opposed to **absolutive**.
ergative-absolutive: a language system organized on the basis of ergative and absolutive grammatical relations; see also ***nominative-accusative***.
ethnonym: the name applied to the people of a given ethnic group.
evaluative device: in narrative research, the particular linguistic and non-linguistic strategies, such as repetition, that the narrator uses to highlight the significance or point of the story, i.e., why it is worth telling.
evaluative function: in narrative research, the function of conveying the significance or point of the story, i.e., why it is worth telling.
evidential: a grammatical category (sometimes a word class) whose members indicate the source and/or certainty of knowledge communicated in a statement.
exclusive: a category used in first-person plural reference to include the speaker and at least one other, but not the hearer; contrasts with **inclusive**.
excrescence: the sporadic insertion of a consonant resulting from a tiny shift in the timing of articulatory movements; e.g., the insertion of a [t] before the final [s] in the English word *prince*.
exonym: a name for a language used by outsiders, not by speakers of that language; contrasts with **endonym**.
expansion: in language acquisition, a caregiver utterance that provides a fuller, more grammatical version of a preceding child utterance that is incomplete or ungrammatical.
experiencer: a semantic case role denoting an entity that experiences a physical or emotional state.
experimental research: a type of study in which the researcher manipulates linguistic or contextual features to observe the effects on the performance of a particular task.
explicated inferences: a type of pragmatic inference that is required in order to determine the explicit message of an utterance.
explicature: the linguistic code enriched by **explicated inferences** in order to "fill in the blanks" and obtain the full message of an utterance.
expression: a reusable linguistic form.
extralinguistic competence: the ability to use knowledge of the world (not included in the linguistic system) to interpret the meaning of utterances.
eye dialect: the technique of using alternative spellings for words to indicate how they sound.

family tree or Stammbaum: a schematic representation of the relationships among languages in a family, that is, all of those languages descended from a common ancestral language; typically represented in a branching "tree" structure.

fictive motion: the depiction of a static situation – like a road over some terrain, or a sloping roof – as a path that one imaginatively travels; e.g., *The road winds through the mountains, The roof slopes gently* (*up/down*).

figure: an entity that is profiled with respect to a **ground**.

finite: a clause or verb with marking that indicates tense, aspect, mood, and/or evidentiality; contrasts with **non-finite**.

first language acquisition: the process by which young children come to know and use the language(s) of their caregivers.

first person: refers to the speaker; *I*.

flap: a sound produced with extremely short complete closure at the alveolar ridge; differentiated from an alveolar stop by the extreme shortness of the closure for the flap; sometimes also referred to as a **tap**.

forensic linguistics: the examination of linguistic evidence in legal proceedings.

formal theory: linguistic theories that analyze structures independently of function, instead constructing a formal model of linguistic knowledge based on abstract categories, structures, and principles; the model is posited to represent a single Universal Grammar taken to be part of humankind's genetic endowment.

fortition: the phonological process by which consonants take on greater obstruction or become "stronger," as when a fricative becomes a stop.

fossilization: in second language acquisition, an end-state of acquisition in which the learner's L2, still not native-like in certain respects, does not develop further; this state can apply to linguistic items or to subsystems of the learner's L2, such as the phonological system; that is, other subsystems, such as syntax, may continue to develop.

fragmentary intonation units: an intonation unit which is not completed, such as when interrupted or when restarting a word or phrase; also known as fragmentary phrases.

frame, semantic: the background knowledge associated with an expression, distinct from its **profile**.

frame elements: the participants and relations in a semantic frame.

free morpheme: a morpheme that can stand on its own as a word, e.g., English *house* or *of*.

free variation: the situation in which two or more allophones of a phoneme may occur in the same word without creating a difference in meaning.

fricative: a sound in which the two articulators are close together, but not so tightly occluded that no air can escape through the mouth.

fronting: a **phonological error pattern** in which a child moves consonants forward in the mouth; e.g., pronouncing car [kaɹ] as [da] by replacing velar [k] with alveolar [d].

full reduplication: see ***reduplication***.

function: the purpose for which a linguistic structure is used in context.

functional continuity: the persistence of the same function (e.g., direct listener's attention) over time, even though that function may be expressed by different non-linguistic or linguistic forms as time passes.

functional discourse-based theories of first language acquisition: theories that attribute the process of first language acquisition to general cognitive abilities such as learning and analogy; contrast with **nativist theories**.

functional discourse-based theory: linguistic theories based on the premise that language is shaped by its role as a tool of human communication, including its embedding in general

human cognition and its role in human social, cultural, and communicative interaction; focuses on both formal and functional properties of language; takes naturally occurring discourse as the primary source of data that has bearing on the central questions of the field.

fundamental frequency: the rate of vocal fold vibration, perceived as pitch.

fusional: a morphological structure in which the boundaries between morphemes are no longer clear-cut; the English plural noun *feet* shows fusional structure: it is difficult to separate the root 'foot' from the plural suffix (see the Seneca Language Profile [LP13] for an excellent example of a fusional language).

gemination: the process by which a consonant is doubled or lengthened; the consonant is referred to as a **geminate**.

gender: see ***grammatical gender***.

genealogical (or genetic) relationship: the relationship among all languages and dialects descended from the same parent language; English and German are genealogically related, but not English and Japanese.

generalization: a gradual process of change in which a particular linguistic form is applied in an increasing number of cases, so that the frequency of the form increases and its function/meaning becomes more general; used in discussing language change and language acquisition.

generic masculine: the use of masculine linguistic forms, such as the pronoun *he*, to refer to an unspecified person.

genetic relationship: see ***genealogical relationship***.

genitive: a nominal case used when the noun is a possessor (*brother's book*) or when the noun holds a similar relationship with another noun.

genre: a variety of discourse; includes written or spoken, fiction, nonfiction, storytelling, conversation, interviews, email, text messaging, newspaper articles, etc.

gerund: a noun derived from a verb; frequently gerunds serve as verbal complements, as in *I enjoy learning languages*, where the gerund *learning* is part of the object complement, or *Swimming laps can be tiring*, where *swimming* is the verb of the subject complement.

given information: information that is activated in the listener's mind because it has just been mentioned or is obvious in context; therefore it is information that the speaker assumes to be already in the focal consciousness of the addressee.

gliding: in language acquisition, a **phonological error pattern** in which a child substitutes the glides [j] or [w] for liquids [l] and [ɹ], e.g., pronouncing *lap* [læp] as [jæp]; see ***phonological error pattern***.

gloss: the translated representation of a morpheme's meaning; frequently won't capture the full meaning of a morpheme, due to translational issues.

glottal: referring to the glottis or vocal folds; a sound made with the glottis as the place of articulation.

glottalization: a secondary articulation involving the production of a glottal constriction in conjunction with one or more non-glottal segments.

glottal stop: a stoppage of voicing created by blocking off all airflow through the larynx by closing the **glottis**.

glottis: within the larynx, the space between the vocal cords which opens and closes when the vocal cords vibrate; controls **voicing** and other aspects of phonation.

goal: a semantic case role denoting the endpoint of a motion trajectory.

grammar: the morphology and syntax of a language, also known as morphosyntax. (Note: This is a complex term used in a number of ways in linguistics; this definition is the one used most frequently within this book.)

grammatical borrowing: a borrowing of grammatical elements such as syntactic structures, derivational affixes, or lexemes from a grammatical word class.

grammatical gender: a grammatical system that classifies nouns into two or more types, which trigger distinct patterns of agreement on articles, adjectives, verbs, or other word classes.

grammatical relations: relationships between core arguments and verbs and that are marked by particular grammatical behaviors, such as agreement, case-markers, or constraints on ordering.

grammatical word classes: those classes whose words have more abstract meanings; often grammatically obligatory; contrasts with **lexical word classes**.

grammaticalization (also known as grammaticization): the development of a lexical item, such as a noun or verb, into a grammatical morpheme, or the shift of a grammatical morpheme into a more grammatical morpheme.

grapheme: a single written character used in the orthographic system of a language; does not necessarily correspond to a single phoneme.

Great Vowel Shift: a series of changes in English beginning around 1400 by which originally long vowels were raised, that is, pronounced with the tongue rising higher in the mouth.

Grice's Maxims: the set of four maxims (rules) that Grice claims interactional participants follow in order to cooperatively reach understanding; includes the maxims of **Quantity** (speakers should provide just enough information, neither too much nor too little), **Quality** (speakers must assert truthful and well-supported information), **Relevance** (speakers must make their contributions relevant to the ongoing interaction), and **Manner** (speakers must be brief, clear, unambiguous, and orderly).

ground: a reference point or reference situation against which a **figure** is profiled.

habitual: an **aspect** indicating that an event occurred, occurs, or will occur repeatedly and with some regularity.

habitual *be*: in African-American English, the use of uninflected *be* as an aspectual marker indicating habitual or repeated activity, rather than as a copula.

hard palate: the hard portion of the upper surface of the mouth behind the alveolar ridge.

harsh voice: irregular vibrations superimposed on normal voicing by a tense larynx.

head: the element that determines the syntactic function of a phrase (e.g., a phrase headed by a noun is called a **noun phrase** and occupies the syntactic position of a noun within a clause); must be present for its modifiers or **dependents** to appear.

head noun: the noun in a noun phrase; typically mentioned in contrast to its **dependents**; sometimes specifically refers to the noun modified by a dependent relative clause.

heavy syllable: a complex syllable in a **weight-sensitive stress** system; depending on the language, syllables are heavy when they have a syllable-final coda consonant, a long vowel, or a diphthong; contrasts with light syllable.

height: a parameter for describing vowel sounds based on height of the tongue during articulation; one of three main dimensions for describing vowels; may be *high, low*, or *mid*.

historical linguistics: the study of how languages change over time, how languages are related, and how they have descended from a language spoken in the past; includes the study of language contact.

homonyms: lexemes or expressions that share the same form (in spelling, in pronunciation, or in both) but have different senses; e.g., *sea* and *see*.

hypernym: a term, *a*, which is less specific than some other term, *b*, and which therefore has a broader denotation; thus *move* is a hypernym of *walk*, and *cook* is a hypernym of *fry*.

hyponym: a term, *a*, which is more specific than some other term, *b*, and which therefore has a narrower denotation; thus, *amble* is a hyponym of *walk*, and *mumble* is a hyponym of *speak* (the relation among hyponyms is called **hyponymy**).

iambic feet: units composed of a sequence of two syllables, the second of which is stressed.

icon: a type of sign for which the signifier somehow resembles its signified; contrasts with **index** and **symbol**.

identifiability: whether the speaker assumes an idea is given, accessible, or new to the addressee.

identity: the social positioning of self and other, including demographic categories, styles, relational roles, interactional roles, stances, and personas.

ideology of language acquisition: the beliefs held by an individual or social group about how children acquire language, e.g., by imitating adult speech.

ideophone: a word class where the words convey a sensory perception of a color, a smell, a shape, an action, etc.; often exhibits phonological and morphological peculiarities; a well-known subset of ideophones are **onomatopoeic** words, i.e., words that imitate a sound.

idiom: a multi-word expression whose meaning cannot be simply constructed from the meaning of its parts.

idiomaticity: relating to one or more idioms, complex expressions with conventional senses (meanings) that cannot be predicted from the senses of their parts, i.e., where the sense is not entirely compositional.

imagery: any visual, auditory, tactile, olfactory, or somato-sensory associations that a linguistic expression may have.

imperfective: an **aspect** used to present a situation from an internal viewpoint, so that it is portrayed as though in progress, repeated, or habitually recurring; contrasts with **perfective**.

implicature: a type of pragmatic inference that the speaker intends the addressee to infer based on a set of contextually available assumptions; unlike logical inferences, implicatures are only plausible, but do not follow necessarily; also referred to as **particularized conversational implicature**.

implosive: a type of voiced stop consonant produced by moving the glottis downward (thus creating a vacuum) before releasing the stop; implosives are written in the IPA by adding a hook to the top of the letter, e.g., [ɓ], [ɗ], [ɠ].

inceptive: an **aspect** indicating the beginning of an activity or entrance into a state.

inclusive: a category used in first-person plural reference to include the speaker, hearer, and perhaps others; contrasts with **exclusive**.

indefinite: grammatical marking on a noun phrase that indicates non-identifiability, i.e., the speaker does not believe the addressee will be able to identify the referent; can be marked using an article (e.g., English *a*); contrasts with **definite**.

index (i) (noun): in semantics, a type of sign for which the **signifier** and the **signified** are somehow physically or causally connected; contrasts with **icon** and **symbol**.

index (ii) (verb): in sociocultural linguistics, to use language symbolically to convey a social meaning.

indexicality: the use of language to convey a context-specific meaning.

indirect object: a grammatical relation pertaining only to the recipient object of ditransitive verbs.

Indo-European: a large language family descended from a single prehistoric language, reconstructed as **Proto-Indo-European**. Indo-European languages include Germanic languages (like English, German, Yiddish, and Swedish), Romance languages (like Spanish, Portuguese, and French), Indo-Iranian languages (like Hindi-Urdu, Bengali, and Persian),

Slavic languages (like Russian and Macedonian), and other languages, including Greek (see Figure 12.1).

infix: an affix that appears inside of the root (not just inside of the word).

inflection: morphological processes that do not create new lexemes (mental dictionary entries), but simply add grammatical meaning such as past tense, plural number, or case.

insertion: the phonological process by which a sound is added (i.e., inserted).

insertion switching: codeswitching of a lexical item within a single clause.

instrument (or instrumental): a semantic case role denoting an entity that is used to perform an action.

intensity: the strength of a sound wave, perceived as loudness.

interactional meaning: those aspects of an expression's meaning that serve to build the flow of discourse or to manage relations among the discourse participants.

interactional role: a role within social interaction that performs a specific linguistic activity such as narrating, asking a question, etc.

Interaction Hypothesis: a hypothesis proposed by Long (1996) which claims that language development is promoted by the interactions between speakers through **negotiation for meaning**, particularly the types of negotiation that trigger interactional adjustments by the L1 (or more competent) speaker.

interdental: a consonant sound made by placing the tip of the tongue between the upper and lower teeth.

interference: in language contact, changes to a language made due to incomplete acquisition by speakers of other languages.

interlanguage: the L2 language system created by a learner; the combination of structural elements of a language learner's first and second languages that results from the learner's incomplete mastery of the second language.

internal reconstruction: a method used in historical linguistics that works exclusively with forms in a single language rather than comparing forms across languages.

interrogative pronoun: an interrogative word ("question word") that occurs in the syntactic position of a pronoun, e.g., *who* in *Who came to the house?*

intersectionality: an individual's or group's experience of multiple simultaneous forms of marginalization and oppression based on social categories, which may affect language production and perception.

inter-speaker variation: systematic variation between speakers or across groups of speakers, often due to social factors.

intersubjective: occurring across separate conscious minds through shared experience and consensus.

intonation: the changes in fundamental frequency (perceived as pitch) that occur during a phrase or utterance; adds meaning to spoken discourse.

intonation unit: a segment of speech characterized by a single coherent pitch contour, often by declining pitch, volume, and/or rapidity, as well as by preceding and following pauses; also called **prosodic phrase**.

intransitive: verbs that take at most one core argument.

intra-speaker variation: variation within the speech of one person, often due to stylistic factors.

isolating or analytic: a morphological structure in which each word has very few morphemes, usually just one, i.e., there are no or only several affixes or clitics; common in a number of Southeast Asian languages, such as Vietnamese; contrasts with **synthetic** or **polysynthetic**.

item and arrangement: a type of morphological description that specifies the environment where each of two or more allomorphs occurs.

item and process: a type of morphological description that posits a basic form of each allomorph and then states a set of processes (phonological rules) that derive each of the non-basic allomorphs.

L1: one's first language, often called one's native language or mother tongue.

L2: one's non-native second language, learned as an adolescent or adult.

labeled tree diagram: a schematic representation of the hierarchical structure of a phrase, clause, or sentence; includes a labeled node for each phrase and labels for word classes.

labiodental: a sound that involves a narrowing or complete closure between the upper teeth and the lower lip.

language: a mode of communication used by humans, usually spoken but also written or signed; distinguished from a **dialect** by **mutual intelligibility**: speakers of two separate languages are unable to understand each other.

language acquisition: (the study of) how language is learned, includes **first language acquisition** (the study of how children learn their native language) and **second language acquisition** (the study of how speakers learn a language that is not their native tongue).

language and the brain: the field that examines the neurological basis of language.

language change: a language innovation that spreads throughout a speech community to become a regular feature of the language.

language conservation: efforts to keep a language alive within a speech community through finding ways to promote its use; often includes development of materials to be used in education, as well as activities leading to language documentation.

language contact: the situation in which speakers of two or more distinct languages interact with each other, leading to changes in one or more of the languages.

language death: the loss of a language that occurs when the last speaker of the language dies and the language ceases to be a symbolic marker of identity for the community.

language documentation: the creation of an extensive record of a language and how it is used by the speech community; typically involves creation of an analyzed archive of recordings of authentic speech and frequently the production of a dictionary and grammar.

language family: all of the languages and dialects that have developed from a single, common ancestral language.

language ideology: culturally shared ideas about language and its users that advantage some groups of speakers over others.

language of thought: the building blocks of (pre-linguistic) human conceptual structure, which allow us to imagine and think about the world in general, and which constitute the ultimate source for the semantic content of linguistic expressions.

language planning: the deliberate and systematic development and promotion of a language, usually through government-sponsored institutions and policies.

language revitalization: efforts on the part of communities whose languages have been entirely lost or significantly reduced to increase the number of speakers and domains of use.

language shift: the process in which members of a speech community adopt a different language and discontinue speaking their original language.

language transmission: the passing on of a language from one generation to the next.

larynx: the part of the vocal tract that contains the vocal folds; located behind the thyroid cartilage (or Adam's apple).

lateral: a sound produced with a closure only in the center of the mouth so that air flows over the side(s) of the tongue; contrasts with **central**.

lative: a grammatical case that indicates motion toward a location.
lax: a phonetic property of vowels produced with tongue positioned toward the center of the vowel space; contrasts with **tense**; tense vowels tend to be shorter than lax vowels.
lenition: the phonological process by which consonants become less consonant-like and more vowel-like, e.g., shifts from voiceless to voiced stops (such as p > b), stops to fricatives (b > v), and fricatives to glides (v > w); also known as "weakening."
lexeme: a vocabulary item in the mental lexicon; a single lexeme, e.g., English *freeze*, might have several word forms, such as *freeze, freezes, freezing, froze*, and *frozen*.
lexical borrowing: (verb) the phonological and grammatical integration of a lexical item from one language into another language; (noun) a loanword from a lexical word class.
lexical bundles: expressions that recur; sometimes idiomatic; may have a range of structures.
lexical collocations: particular lexemes or expressions which are common throughout a given **linguistic area**.
lexicalization: the addition of a morphological formation to the mental lexicon as a single unit, or a recognizable vocabulary item (lexical item); e.g., *inappropriateness* is lexicalized, whereas *inelegantness* is not, though it could become lexicalized if it were used often enough.
lexically conditioned: allomorphs whose occurrence (distribution) cannot be predicted on the basis of the sounds around them, but simply must be learned with the individual word, e.g., the plurals *mice* and *alumni*.
lexical overextension: in language acquisition, a type of error in which a word is applied to a larger number of referents than is appropriate in adult speech; see ***referent*** and ***overextension***.
lexical semantics: the study of the kinds of meanings associated with individual expressions, including morphemes, lexemes, and idioms; contrasts with **compositional semantics**.
lexical suffix: a suffix that expresses a concrete lexical meaning rather than an abstract grammatical function.
lexical underextension: in first language acquisition, a type of error in which a word is applied to a smaller set of referents than is appropriate in adult speech; see ***referent*** and ***underextension***.
lexical word classes: those classes whose words typically convey a wide range of concrete and often specific meanings; contrasts with **grammatical word classes**.
lexicon: the mental dictionary; the speaker's knowledge of the words of a language and how they are used.
lexifier: in a situation of creolization, a language that provides vocabulary used in the pidgin that becomes a creole; see also ***superstrate***.
light syllable: a type of syllable in a **weight-sensitive stress** system; typically if a syllable ends in a short vowel without a coda consonant, it is considered light; contrast with **heavy syllable**.
lingua franca: a language used as a frequent means of communication between speakers of multiple other languages; frequently used in commerce.
linguist: a person who examines the structures of languages and the principles underlying those structures; one who practices linguistics.
linguistic activism: direct action to challenge social inequality on the basis of language.
linguistic analysis: the process of recognizing and analyzing systematic patterns in languages.
linguistic area: a geographic region with languages from two or more different language families that have shared linguistic features due to borrowing or diffusion; also known as a **Sprachbund**.
linguistic exogamy: marriage to a person who speaks a different language.

linguistic feature: a specific form used by a speaker at any linguistic level, including the pronunciation of a specific vowel or consonant, the use of a particular grammatical structure, a certain lexical choice, or a particular interactional practice.

linguistic ownership: a language ideology that views linguistic varieties as cultural property.

linguistic paleontology: the reconstruction of aspects of the life and culture of the speakers of a proto-language based on reconstructed vocabulary.

linguistic repertoire: the range of linguistic varieties available to a speaker.

linguistic typologist: a linguist who studies the classifications of languages based on structure and looks for relationships between structural types.

linguistic typology: a subfield of linguistics concerned with describing and classifying linguistic structures in the world's languages, with finding correlations between structures, and with classifying languages based on their structural types.

linguistic variety: a cover term for any type of linguistic system with characteristic phonological, grammatical, and lexical features, including languages, dialects, registers, and styles.

linguistics: the scientific study of language.

lip rounding: a parameter for describing vowel sounds based on whether the lips are rounded during articulation; may be *rounded* or *unrounded*.

liquid: a category of sounds which includes lateral approximants and r-type sounds.

loanword: a word that has been borrowed into one language from another language; see ***borrowing***.

local process: a phonological process governed by an adjacent environment; contrasts with **non-local** or **long-distance process**.

locative: a semantic relation of location and/or the grammatical marking of location by case; refers to static location when contrasting with categories of source and/or goal.

logogram: a written character which represents a whole word.

long-distance process: a phonological process governed by a non-adjacent environment (e.g., **vowel harmony**); also called a **non-local process**; contrasts with **local process**.

longitudinal research: in first language acquisition, a type of research which follows the language development of one or more individual children over time.

magnetic resonance imaging (MRI): an imaging technique used to examine dynamic properties of the speech organs in the neck and head.

main clause: a grammatical structure that consists of an independent verb plus optional elements such as noun phrases, adverbs, and particles; compare **matrix clause**.

main verb: the **verb** that carries the more concrete semantic information about the action, state, or relation described in a clause.

manner of articulation: the degree of narrowness of the constriction in the vocal tract involved in producing sound; can vary from slight narrowing (for approximants) to complete blockage (for stops).

matrix clause: the grammatically primary clause in a complex sentence; the head clause upon which other clauses are dependent; similar to a **main clause**, but also implies a relationship with a dependent clause.

mean intensity: the arithmetic average of intensity measurements over a phrase.

mental representation: forms of stored information/knowledge in the mind, including imaginal forms such as mental images, symbolic forms such as words and grammatical constructions, and physiological forms such as patterns of neural activation in the brain.

merger: the merger of two phonemes into one, e.g., the vowels of English *beat* and *beet* were originally separate phonemes that underwent merger.

metaphor: the extension of an expression typically used in one semantic domain to use in another, e.g., the term *leap*, which refers to a kind of jump, is now often used metaphorically in such expressions as *a leap of faith*; based on analogical reasoning.

metaphorical extension: the process by which an existing word or construction from one domain is used to express a concept in another. For example, body parts can be used to express spatial relationships, as in English back or head (of the line).

metathesis: the phonological process by which two sounds are transposed.

metonymy: a kind of semantic shift whereby the meaning of a word, expression, or construction comes to refer to an associated object or situation; e.g., *be going to* shifting from denoting a motion event to denoting future tense or purpose.

minimal pair: a pair of words with different meanings, which differ in only one sound occurring in the same environment; used to determine whether two sounds are phonemes in a language.

minimal set: a set of more than two words with different meanings that differ in only one sound occurring in the same environment.

monitor: a cognitive process of an L2 learner; the learner's cognitive "watchdog" that consciously reviews what the learner has said in the L2 and monitors it for correctness.

monolingual: a person who speaks one language, or a society in which only one language is spoken (the latter situation is rare); contrasts with **bilingual** and **multilingual**.

monophthong: a vowel produced with a single articulatory configuration; contrasts with **diphthong**.

mood: a grammatical category marking the probability or reality of an utterance (e.g., declarative, subjunctive, interrogative, etc.).

morpheme: the smallest meaningful part of a word; includes roots, affixes, clitics, and particles.

morphology: the study of the internal structure of words and the principles underlying such structuring.

morphosyntactic behavior: the patterns of morphological and syntactic occurrence and positioning of a word; can be used to determine word class.

morphosyntax: the morphology and syntax of a language and their interaction; also known as grammar.

multilingual: a person who speaks three or more languages or a society in which multiple languages are spoken; contrasts with **monolingual** and **bilingual**.

mutual intelligibility: the ability of speakers of two or more language varieties to understand each other (a possible criterion for distinguishing language from dialect).

narrative: the relation of a sequence of events, traditionally following a **narrative schema**.

narrative co-construction: the production of a narrative by more than one person; see ***co-construction***.

narrative schema: a pattern of storytelling that introduces characters, places elements in space and time, and progresses through events toward the climax.

narrow phonetic transcription: a phonetic transcription that seeks to record as much detail as possible, for example, transcribing nasalized vowels before nasal consonants where a **broad phonetic transcription** might not.

nasal: a sound produced with air passing through the nose; contrasts with **oral**.

nativist theories: theories of first language acquisition based upon the view that innate grammatical structures (**Universal Grammar**) are required to explain the process of first language acquisition; contrast with **functional discourse-based theories of first language acquisition**.

natural class: a group of sounds sharing one or more phonetic features that pattern together in a phonological system; to be a natural class, a group of sounds must share one or more phonetic features and must include all of the sounds in that language which share those features.

near-minimal pair: a pair of words that differ in more than one sound, but in which the sounds immediately adjacent to the target sounds are the same in both words; used to determine whether two sounds are phonemes in a language when no minimal pair can be found.

negation: syntactic or morphological marking of negative meaning (i.e., 'not').

negative concord: the marking of negation in more than one possible grammatical position.

negotiation for meaning: a type of linguistic interaction to facilitate communication; L2 learners signal difficulty in understanding their interlocutor, using conversational strategies to seek clarification or elaboration.

neurology: the study of the nervous system; for linguistics, the primary neurological domain of relevance is the brain.

neutralization (verb: neutralize): when a linguistic distinction that is made in one context is not made – i.e., is neutralized – in another; for example, in German the phonemic distinction between /t/ and /d/ is neutralized in word-final position (only /t/ is found), and in Spanish the distinction between masculine and feminine gender is neutralized (not made) in first-person and second-person pronouns.

new activation state: an idea which the addressee is unlikely to be focused on and which the speaker introduces into the discourse, thus activating it.

new information: information a speaker assumes is not already in the focal consciousness of the addressee, since it is being mentioned for the first time or is not obvious in context.

nominal: a cover term for nouns and noun-like expressions; in Finnish, these include nouns, pronouns, and adjectives.

nominalizer: an affix that creates nouns; the English suffixes *-ness, -ity*, and *-hood* are all nominalizers: *sweet/sweet-ness, scarce/scarc-ity, woman/woman-hood*.

nominative: a grammatical **case** that marks noun phrases that occur as subjects of clauses.

nominative-accusative: a language system which treats the subjects of both transitive and intransitive verbs similarly, and distinguishes them from objects of transitive verbs; see also ***ergative-absolutive***.

nonce formation: the first innovative production of a new word through compounding or derivation.

non-finite: a clause or verb that lacks marking for tense, aspect, mood, and/or evidentiality that is found in other clauses in the same language; contrasts with **finite**.

nonrestrictive relative clause: a relative clause that does not aid in the identification of the referent of the head noun but provides further information about it.

nonrhotic: relating to the pronunciation of the English phoneme /r/ as a vowel.

noun: a grammatically defined word class, whose members can function as the heads of **noun phrases**; typically denote entities or concepts.

noun incorporation: the addition of a noun root to modify the meaning of the verb root.

noun phrase: a syntactic constituent headed by a noun or pronoun; optionally includes one or more dependent modifiers.

nucleus: the most prominent (or loudest) part of the syllable; typically filled by a vowel; also called the **syllable peak**.

number: a grammatical category which differentiates **singular, plural**, and sometimes **dual** or other number categories.

numeral: a word class often distinct from other quantifiers whose members indicate an exact quantity.

numeral classifier: a **classifier** that occurs in expressions with numerals and sometimes other **determiners**.

object: a grammatical relation based on morphosyntactic behavior pertaining to the less agentive arguments of transitive and ditransitive verbs; includes **direct objects** and **indirect objects**.

object complement: a complement clause that functions as the grammatical object of a verb.

object of an adposition (preposition/postposition): a noun phrase dependent on an adposition in an adpositional phrase.

objective: unbiased; independent of preconceptions or evaluative judgments.

obligatory context: a linguistic context in which the use of a particular morpheme is required in order for the utterance to be grammatically correct.

oblique argument: an argument that does not have a direct grammatical relationship with a verb; oblique arguments typically convey information external to the strict verbal semantics (such as spatial, temporal, or logical relations), so are often "optional" elements of the clause.

observational study: in language acquisition research, a type of study in which the researcher makes a written, audio, or video record of children's naturally occurring communicative behaviors.

obsolescence: an extreme state of language endangerment.

obstruent: a category of sounds which includes oral stops, affricates, and fricatives.

online creation of natural discourse: the process in which conversation partners articulate their thoughts and navigate social interaction in real time.

onomatopoeia: sound symbolism in words; terms for birds and certain other animals, whose names in some way mimics their calls, as well as terms for various actions and sound effects.

onset: a consonant or consonant cluster that precedes the nucleus within the syllable.

open syllable: a syllable that ends in a vowel.

open word class: a class into which one can easily incorporate new members through borrowing or other word-formation processes.

Optimal Relevance: in pragmatics, when a relevant utterance achieves a balance between the quantity of contextual cues informing the utterance and the mental effort necessary to process those cues.

oral: a sound produced with air passing through the mouth only; contrasts with **nasal**.

orthography: writing system; see also ***practical orthography***.

overextension: in language acquisition, a type of error in which a linguistic form or construction is used in a larger number of contexts than is appropriate in adult speech; see ***lexical overextension***.

overregularization: in language acquisition, a type of error in which the regular form of a morpheme is used in cases that require an irregular form, e.g., *goed* instead of *went*.

palatal: a sound made with the tongue contacting the center of the hard palate.

palatalization: a phonological process by which a non-palatal consonant takes on a palatal or palato-alveolar articulation; typically triggered by high vowels, front vowels, or the palatal approximant.

palato-alveolar: a sound made with the tongue contacting the area just behind the alveolar ridge; also known as **postalveolar**.

palatography: a technique in which charcoal or cocoa powder is used to examine contact patterns between the tongue and the upper surface of the mouth during speech.

paradigm: the set of forms that includes all possible morphological variants of a single word.

paradox: a sentence that expresses two propositions both of which cannot be simultaneously true; a useful device for testing the entailments of lexemes.

partial reduplication: see ***reduplication***.

particle: an independent word which does not inflect (i.e., which has only a single morphological form).

particle verb: in English, compound verbs containing a verb plus a particle that historically developed from a preposition but no longer functions as one.

particularized conversational implicature: a type of pragmatic inference that the speaker intends the addressee to infer based on a set of contextually available assumptions; unlike logical inferences, PCIs are only plausible, but do not follow necessarily; also called ***implicature***.

passive (voice): a construction which allows the semantic patient to function as the grammatical subject of an intransitive clause; agentive arguments are either unexpressed or placed in an adpositional phrase; contrasts with **active (voice)**.

passive articulator: an articulator which remains stationary in the production of a sound; contrasts with **active articulator**; includes teeth, upper surface of the vocal tract, etc.

patient: a semantic case role denoting an entity that undergoes a change of state as the result of an activity or event.

penultimate syllable: the second to last syllable in a word; also called the **penult**.

perceptual salience: an explanatory factor for phonological processes, based on the observation that phonologies tend to be constructed in a way that increases the perceptual distinctness of sounds from one another.

perfective: an aspect that presents a situation as a bounded and completed whole; contrasts with **imperfective**.

persona: a social type that may be associated with particular personal attributes and/or with a broader social group.

personal pronoun: a word class whose members refer to a first-person referent (the speaker), a second-person referent (the addressee), or a third-person referent (someone other than the speaker and addressee, but not semantically specific); typically distinguishes singular and plural (e.g., *I, we*); constitutes the sole element of a noun phrase.

perspective: one of several ways of construing a situation.

pharyngeal: a consonant articulated with the root of the tongue against the back wall of the pharynx.

pharynx: the part of the vocal tract above the larynx and behind the oral cavity (roughly the throat above the larynx).

phoneme: a sound that is used in a language to contrast words with different meanings.

phonetics: the physical properties of sounds in language and the study of those properties.

phonological erosion: the process by which a linguistic form loses phonetic material, e.g., loss of phonetic segments or loss of syllable stress or complete syllables, when undergoing **grammaticalization** within a particular construction.

phonological error pattern: in language acquisition, a consistent difference between the adult and child pronunciation of a phonological unit such as a syllable or speech sound.

phonologically conditioned: allomorphs whose occurrence (distribution) can be predicted on the basis of the sounds around them, e.g., occurrence of the English plural allomorphs /-s/, /-z/, and /-əz/ can be predicted based on their phonological environment.

phonological process: an alteration in phonetic structure due to the phonological properties of the form or its environment (e.g., deletion of a vowel that is adjacent to another vowel; devoicing of a consonant word-finally).

phonology: the systematic patterns of sounds in language and the study of those patterns.
phrasal accent: the most prominent part of a phrase.
phrasal constituent: a grammatically coherent subpart of a sentence, consisting of a head and any dependent modifiers; the phrase as a whole acts as a single syntactic unit; the lexical category of the head determines the phrase type, e.g., a phrasal constituent with a noun at its head is a noun phrase.
phrase: a structurally defined subpart of a sentence, including a head and optional dependents; used in Chapter 10 for a sequence of words within a single intonation unit.
pidgin: a simplified form of linguistic communication used for limited communication between adult speakers of two (or more) mutually unintelligible languages; consists of grammatical and lexical elements from both languages.
pitch: the perception of a sound on a scale of low to high; correlates with **fundamental frequency**.
pitch contour: in prosody, a pitch pattern characterized by rises and falls.
place of articulation: the location within the vocal tract at which air flow is obstructed to produce a sound; refers to the articulator(s) involved in producing the sound (e.g., bilabial, dental, alveolar, etc.).
plural: a grammatical number category indicating many; contrasts with singular and sometimes with dual.
polar question: a question that one could answer with a simple "yes" or "no" response; contrasts with content questions (also known as wh-questions) that ask for a specific piece of information, such as when something will or did occur.
polyglot: a person who speaks many languages.
polysemy: the property of having multiple, distinct, and incompatible senses.
polysynthetic: a morphological structure in which words tend to have large numbers of morphemes; characteristic of many languages of North America and the Caucasus; contrasts with **isolating**.
possessive: a grammatical case or construction that indicates possession.
postalveolar: a sound made with the tongue contacting the area just behind the alveolar ridge; also known as **palato-alveolar**.
postposition: see ***adposition***.
postpositional phrase: see ***adpositional phrase***.
postvocalic /r/: the pronunciation of /r/ after a vowel; in American English, the *r*-less variant is found in African-American English and in the Southern and Eastern United States.
poverty of the stimulus: in nativist linguistic theory, the argument that the speech children hear does not provide sufficient evidence for them to acquire fundamental aspects of linguistic structure through learning; it is therefore assumed that the necessary syntactic information must be innately available as part of **Universal Grammar**.
practical orthography: a set of conventions for writing a particular language (including rules for spelling, word division, punctuation, etc.).
pragmatic interpretation: the process of applying contextual information to draw inferences, in order to arrive at the intended meaning of a linguistic utterance.
pragmatics: the study of how context shapes our use and interpretation of linguistic expressions; the competence to draw from context plausible inferences, which complement linguistic meanings.
predicate (i) (noun): (syntax) the central structural element of a clause, typically a verb, that determines the number and type of core arguments of the clause; (traditional) the portion

of the clause that conveys information about the subject (e.g., the state or activity), typically consisting of the verb, its objects, adverbials, adjectives, or other modifiers.

predicate (ii) (verb): (semantics) the part of a proposition that is actually proposed, "put forth," i.e., predicated about a subject.

predicate adjective: an adjective that occurs as the primary element of the predicate, e.g., *He is tall*.

predicate nominal: a noun phrase that occurs as the primary element of the predicate, e.g., *He is a millionaire*.

prefix: an affix that occurs before the root, e.g., the English negative *un-* 'not.'

preposition: see ***adposition***.

prepositional phrase: see ***adpositional phrase***.

prescriptive: an approach to language that sets out rules for "proper" grammar and classifies the use of particular linguistic features as "right" or "wrong"; contrasts with **descriptive**.

presupposition: a background proposition that comes embedded in the use of a construction, and which gets expressed without being asserted.

primary stress: the syllable in a word that has the most acoustic prominence; contrasts with **secondary stress** and **unstressed**.

principle of compositionality: the meanings of complex expressions depend on the meanings of their parts, and individual expressions have stable meanings that combine in regular ways.

principle of language variation: variability is inherent in language; that is, it is normal and expected for speakers to change the way they speak because of social, situational, linguistic, and other factors.

principle of linguistic diversity: in most places around the world, it is typical and unremarkable for multiple languages to be used within a single community, by a single individual, within a single interaction, and sometimes within a single utterance.

Principle of Relevance: the principle proposed by Sperber and Wilson to replace Grice's Maxims; states that people are automatically geared toward searching for maximally relevant information and that linguistic acts specifically come with a presumption of relevance.

productivity: in morphology, the degree to which a particular morphological formation is used by speakers to create new words; the English suffix *-hood* of *mother-hood* is no longer very productive, but the suffix *-ness* of words like *happi-ness* is highly productive.

profile: the primary figure, or focus of attention within a larger conceptual structure, or **frame**; the profile is what an expression designates within a frame.

progressive: an **aspect** that indicates an event is in progress or ongoing.

prominence: the effect of causing a portion of speech to stand out because of its higher pitch, volume, lengthening, and/or special voice quality.

pronoun: a word class whose members constitute the sole element of a noun phrase, and so do not co-occur with modifiers.

proposition: a basic unit of thought; something which one could believe or know, which could be true or false.

propositional content: those aspects of an expression's meaning that affect the truth conditions of an expressed proposition.

propositional schema: an abstract representation of the detailed meaning of a lexical item, presented as a set of propositions that the word contributes to an utterance.

propositional semantics: the study of how meanings of individual elements combine in clauses and sentences.

prosodic phrase: see ***intonation unit***.

prosodic styles: particular prosodic patterns associated with particular individuals or with particular speech usages such as oratory or acting.

prosody: the variations in pitch, volume, timing, and voice quality that overlay linguistic utterances.

Proto-Indo-European: a reconstruction of the Indo-European language; the language ancestral to English and all other languages genealogically related to it.

proto-language: a reconstruction of the common parent language ancestral to a group of related languages.

prototype: a salient exemplar or subtype of a category.

prototype effect: a way of reasoning about a category based on one or a few especially salient models or exemplars.

pro-verb: a verb that can substitute for a verb phrase; e.g., English *do*.

proximal demonstrative: a demonstrative that indicates things closer to the speaker (e.g., English *this*); contrasts with **distal demonstrative** that indicates things closer to the addressee (e.g., English *that*).

psycholinguistics: a branch of both linguistics and psychology that studies the relationship between language behavior and psychological processes, especially the process of language acquisition.

recipient: a semantic case role denoting an entity that receives a theme.

recursion: the ability for a phrasal constituent to embed another phrasal constituent of the same type within it; e.g., the English prepositional phrases in *the cat on the pillow in the corner of the room*.

reduplication: a morphological process, found in many languages, in which all **(full reduplication)** or part **(partial reduplication)** of a morpheme is repeated to signal a certain meaning.

reference: the relation between a linguistic expression and its potential referents.

referential: a term used to describe noun phrases that refer to a particular entity. For example, *My sister wants to marry a lumberjack* has both a referential interpretation (she wants to marry a particular lumberjack) and a non-referential or generic interpretation (she wants to marry someone with that occupation, but doesn't have anyone specific in mind).

referential function: a term used in narrative research for the function of recounting who did what to whom, i.e., the sequence of events that constitute the plot of the narrative (its primary referential content); contrasts with **evaluative function**.

referents: the "real-world" objects of thought and language; people, objects, and situations that exist independently of human language, but toward which human language may be directed.

referent tracking: the lexical, prosodic, and grammatical means used by speakers to ensure that their interlocutors can correctly identify referents in a discourse.

register: a variety that is associated with the specialized activities of a particular group.

regulatory intonation unit: an intonation unit containing an utterance that regulates the flow of information in discourse, such as *okay, yeah*, and *hm*; also known as regulatory phrases; contrasts with **substantive intonation unit**.

relational role: a social or cultural role that carries with it a set of social rights, obligations, relationships, and areas of expertise.

relative clause: a dependent clause embedded in a noun phrase that modifies a noun.

renewal: the refreshment of language through the replacement of words and grammatical constructions whose impact has faded through frequent use.

retroflex: a place of articulation for consonants, produced with the tip of the tongue curled backwards toward the roof of the mouth behind the alveolar ridge.

reversive antonyms (aka reversives): lexemes or constructions denoting motion or change in opposite directions; e.g., *melt:freeze, come:go, buy:sell*.

rhotic: relating to the pronunciation of /ɹ/.

root: the main morpheme of a word, the foundation to which other morphemes may be added; roots typically carry the core meaning of the word, e.g., *late* in English *be-late-d-ly*.

scaffolding: in language acquisition, caregiver behaviors that support young children's use of language before they are capable of performing independently, e.g., adult questions that support a child's telling of a story.

schwa: a mid-central lax unrounded vowel, closest to the neutral position of the tongue at rest, as in the first vowel of *apart*; represented in the IPA as [ə].

script: in semantics, a dynamic frame, consisting of a series of events or scenarios that unfold through time.

secondary articulations: articulations of consonants that include an additional articulatory gesture overlapping the primary consonant articulation, e.g., the labial gesture causing lip rounding in k^w.

secondary stress: one or more syllables in a word that are less prominent than the syllable with primary stress, but more prominent than unstressed syllables.

second language acquisition (SLA): (the study of) the processes by which people (children and adults) learn any language in addition to their first language.

second person: refers to the addressee; *you*.

segments: a term used in phonetics to indicate individual speech sounds such as vowels, consonants, and syllables; contrasts with **suprasegmentals**.

semantic case roles: semantic (meaning) relationships between verbs and arguments; distinct from grammatical relationships.

semantic content: the meaning of an expression, i.e., its sense.

semanticization: the process by which the meaning of an expression changes from pragmatic status (i.e., contextually inferred) to semantic status (i.e., conventionally encoded and accessed even in the absence of a supporting context).

semantics: the study of how linguistic forms make sense (have meaning); the relation between morphosyntactic forms and their coded semantic content.

sense: the conventional significance (i.e., meaning) of a linguistic sign (such as a word).

sensitive period: a biologically programmed period of time during which, it is hypothesized, young children are able to acquire language most easily and successfully.

sentence: an integrated syntactic unit consisting of at least one clause and optionally adverbials that have scope over the sentence as a whole.

serial verbs: sequences of verbs lacking any conjunctions or affixes that together form a single complex predicate; certain verbs in serial constructions tend to recur and convey grammatical meanings such as aspect, direction, or case.

sibilant: an apical 'hissing' fricative or affricate, such as s, z, ts, dz, ʃ, ʒ, tʃ, and dʒ; sibilants are also described with the feature [+strident].

sign: a linguistic expression, drawing, or other representation associated with a meaning or conception; a sign has two parts: a formal part, that is the **signifier**, and a conceptual part, that is the **signified**.

signified: the content of a **sign**; the conceptual content conventionally associated with a **signifier**.

signifier: the form of a **sign**; that aspect of a sign that expresses a meaning.

signifying: in African-American English, a verbal art and tradition of skilled wordplay that often includes ritualized insult for humorous effect.
singular: a grammatical number category indicating exactly one.
slang: a set of rapidly changing lexical items often associated with youth and casual social contexts.
sociocultural linguistics (also sociolinguistics): the study of the interactional, social, cultural, and political uses and meanings of language.
sociolinguistic justice: self-determination for linguistically subordinated individuals and groups in struggles over language.
sociolinguistic variable: a linguistic feature that varies either across speakers or in the speech of a single speaker.
sociolinguistic variant: one of the alternate forms of the same sociolinguistic variable, conditioned by linguistic and/or social factors.
soft palate: the soft portion of the upper surface of the mouth located behind the hard palate; also known as the **velum**.
sonorant: a category of sound that includes nasals and all approximants, both lateral and central.
sound correspondence: when applying the comparative method to uncover genealogical relationships between languages, the pairing of a sound in one cognate to a phonetically identical or related sound in the same or similar position in another cognate, e.g., the /t/ in English *ten* and the /t/ in Dutch *tien*; the two sounds are said to "correspond."
sound substitution: in language acquisition, a type of **phonological error pattern** in which speech sounds that are difficult to perceive or produce are replaced with ones that are easier to perceive or produce.
source: a semantic case role denoting the beginning point of a motion trajectory.
Southern US English: a variety of English spoken primarily in the Southeastern region of the United States.
spectrogram: a visual display of the acoustic properties of speech in which variations in intensity through time are shown with degrees of shading.
speech act: a social action that a speaker intends to perform by producing an utterance, such as a command, greeting, or request.
speech and hearing sciences: the study of the anatomy and physiology of hearing and communication, including development of speech and language.
speech community: a group of people who share a common language or dialect and cultural practices.
speech pathology: the study and treatment of speech disorders.
speech timing: distribution of speech elements through time, including acceleration, deceleration, and pausing.
spelling reform: a systematic change in the **orthography** for a given language, usually designed and promoted by educational or government institutions, which publishers, print media, and individuals then adopt.
Sprachbund: see ***linguistic area***.
stabilization: in second language acquisition, a plateau stage in a learner's L2 development; unlike **fossilization**, stabilization does not represent an end-state of acquisition but rather a temporary cessation in language development for one or more subsystems.
Stammbaum: see ***family tree***.
stance: an interactional position that linguistically indicates the speaker's attitude toward the talk and toward his or her interlocutors at a given moment.

standard (language): a prestige variety of a language that is implicitly or explicitly recognized as being the norm within a nation, often deliberately engineered and given legal status, and usually taught in schools and used in print and broadcast media.

status planning: a phase of **language planning** to promote the use of a language in society by propagating the language via education and media, shaping public attitudes toward the language, and prescribing its role in society and the domains in which it is used.

stop: a consonant sound that involves a complete closure of the vocal tract.

stopping: in language acquisition, a type of a **phonological error pattern** in which a child replaces a fricative or other type of consonant with a stop, e.g., pronouncing English *see* [si] as [di].

stress: the relative prominence of different syllables in a word; typically measured in terms of duration, intensity, and/or fundamental frequency; includes **primary stress** (the syllable that carries the main stress in the word) and **secondary stress** (stress that is not as strong as the primary stress but stronger than completely unstressed syllables).

stressed *bin*: in African-American English, an aspectual marker used to refer to an event, action, or state that occurred in the remote past.

strident: a noisy sound (typically a fricative or affricate) which involves the funneling of air against the back of the teeth.

structural isomorphism: the similarity in structure that emerges through the gradual convergence of the grammars and lexicons of two languages which coexist in a situation of intensive language contact.

style: a socially distinctive way of doing things, including a distinctive way of using language.

style shifting: an individual speaker's alternation between different varieties of the same language based on social context.

subglottal system: the parts of the vocal tract which provide the air that the upstream articulators manipulate to produce sound; includes the lungs and the trachea.

subject: a grammatical relation based on morphosyntactic behavior shared by the single argument of an intransitive verb and the more agentive argument of a transitive or ditransitive verb, but not shared by other arguments.

subordinating conjunction: a word or affix that marks an adverbial subordinate clause by specifying the semantic relationship between the adverbial clause and the matrix clause (e.g., English if, *because, when, although*).

subordination: in clause combining, the structure that results from having one clause (the **subordinate clause**) inside of and/or dependent on another.

substantive intonation unit: an intonation unit where the utterance conveys referential information, i.e., ideas of events, states, people, or objects; also known as substantive phrases; contrasts with **regulatory intonation unit**.

substrate: the minority language or languages in a situation of intense language contact and typically shift; contributes the grammar and some vocabulary to the creation of a pidgin and creole; contrasts with **superstrate**.

substratum interference: in a situation of language contact, changes to a **target language** that arise from the incomplete acquisition by speakers of minority languages; speakers transfer features of their native languages to the target language and the changes are adopted by the target-language community.

subtopic: a new **topic of conversation** which is related to or slightly shifted from a previous topic.

suffix: an affix that occurs after the root, e.g., the English plural *-s*.

superlative: an adjective, adverb, or similar morpheme that compares one thing to all others in a designated group; for example, the English *-est* suffix in *the elephant is the biggest land mammal*, or the word *most* in *she has the most money of anyone in this room*. See also ***comparative***.

superstrate: the dominant language in a situation of intense language contact; in situations with pidgins and creoles, it usually contributes most of the vocabulary; in the latter sense also known as the **lexifier** language; contrasts with **substrate**.

suppletive: highly irregular allomorphic variation where two (or more) morphological forms of a single root are phonemically unrelated; for example, English *was, am*, and *is* are suppletive forms of the verb *to be*, and *went* is the suppletive past-tense form of the verb *to go*.

supralaryngeal vocal tract: the portion of the vocal tract located above the larynx; contains most of the physiological structures that are manipulated in speech.

suprasegmental: phonetic properties that extend across multiple sounds; includes syllables, stress, tone, intonation, etc.

surface allophones: the phonetic realizations of a phoneme; may be identical to the underlying phoneme or derived by a phonological process.

switching: see ***codeswitching***.

switch reference: a system of verbal affixes that indicate whether the subject of the following clause is the same as, or is different from, the subject of the current clause.

syllabic consonant: a consonant that functions as a syllable peak; e.g., the second syllable of 'little,' [l̩], or the second syllable of 'butter,' [ɹ̩].

syllable: a linguistic grouping that consists of a single peak, which may be flanked on one or both sides by consonants.

syllabogram: a written character that represents a syllable, e.g., *ma, an, nam*.

syllable weight: a classification of syllables by the structure of the coda; **light syllables** typically have only a single vowel in the coda; **heavy syllables** typically have either a long vowel, a diphthong, or a vowel followed by one or more consonants.

syllable peak: the most prominent (or loudest) part of the syllable; typically filled by a vowel; also called the **nucleus**.

symbol: a type of sign for which the relation between the **signifier** and the **signified** is a matter of convention; contrasts with **icon** and **index**.

synchrony: a single point in time (typically the present) for which a language is described; contrasts with **diachrony**.

syncope: the loss of an unstressed vowel in the middle of a word.

synonym: two or more lexemes or other expressions that make the same or similar contributions to the sense of a sentence (the relation among synonyms is called **synonymy**).

syntactic reanalysis: the process by which speakers come to conceive of the syntactic structure of a linguistic expression in a new way, i.e., the process of reinterpreting syntax.

syntax: the set of grammatical structures that allow for the combination of words into phrases and sentences; the study of such structures and the principles underlying them.

synthetic: morphological structure in which each word has several morphemes, usually more than **isolating** languages but fewer than **polysynthetic languages**; characteristic of many Romance languages, as well as Finnish (see Language Profile 4).

tag switching: codeswitching that occurs at a discourse marker.

tap: a sound produced with extremely short complete closure at the alveolar ridge; differentiated from an alveolar stop by the extreme shortness of the closure for the tap; sometimes also referred to as a **flap**.

target language: in a situation of language contact, a dominant language which a minority population acquires.

taxonomy: a lexical field in which lexemes are arranged in a branching hierarchy of inclusion relations; for example, the lexical field of animals includes a branch of dogs which includes a branch of poodles.

template: a schematic representation of a structure; in syntax, used to indicate the possible elements that occur in a phrase, the order in which they may appear, and the optionality of elements; in phonology, typically refers to the possible orderings of consonants and vowels in a syllable; for Semitic languages, an abstract representation of the structure of a word that specifies a particular pattern of vowels and leaves three empty slots for the tri-consonantal root.

temporal: a semantic case role denoting a location in time.

tense (i): a grammatical category which differentiates time (e.g., past, present, future); often (but not always) marked on verbs.

tense (ii): a phonetic property of vowels produced with tongue positioned in the periphery of the vowel space; contrasts with **lax**; tense vowels tend to be longer than lax vowels.

tenseness: with **backness** and **height**, one of three main dimensions for describing vowels, based on peripherality of tongue position and length; encompasses **tense** and **lax**.

terminal pitch contour: a pitch contour associated with the final portion of an intonation unit.

theme: a semantic case role denoting an entity undergoing motion or being located.

third person: refers to an entity other than the speaker or addressee; *he, she, it, they*.

timing: see ***speech timing***.

tone (tonal) language: a language in which fundamental frequency (or its perceptual correlate, pitch) plays an important part in distinguishing between words with different meanings; i.e., languages where pitch is phonemic.

topic (adjective topical): a referent that is important to the surrounding discourse, so is likely to be referred to repeatedly.

transitive: verbs that take two core arguments.

transitivity (i): the property of a verb to take a particular number of arguments.

transitivity (ii): the extent to which a verb expresses an action that affects a participant.

translanguaging: an individual's use of features from their linguistic repertoire as a unified whole, regardless of the source of these features from a linguistic standpoint.

truth conditions: what must be the case for a **proposition** to be true.

typology: see ***linguistic typology***.

typology and universals: the study of how the world's languages are similar and different; includes classification of languages based on structure as well as positing relationships between structural types.

U-shaped learning: a process of language development involving the learning of irregular forms; learners first produce a correct form, then an incorrect form (based on analogy from learning the grammatical system), and finally the correct form again upon learning exceptions to the rules.

ultimate syllable: the last syllable in a word; also called the **ultima**.

ultrasound imaging: an imaging technique employing ultra-high-frequency sound waves to examine dynamic aspects of tongue shape during speech.

uncooperative pragmatic inference: a type of pragmatic inference that is not intended but could be inferred from the context.

underextension: in first language acquisition, a type of error in which a linguistic form or construction is applied to a smaller set of referents than is appropriate in adult speech.

underlying phoneme: the allophone of a phoneme that occurs in the widest array of environments; the allophone taken to be the "basic" form, from which other allophones are derived via phonological processes.

Universal Grammar (UG): in formal linguistic theories, a set of innate linguistic categories, structures, principles, and constraints that form the basis for the grammars of all languages; in nativist theories of language acquisition, UG is hypothesized to account for children's first language acquisition.

utterance: a single instance of speech.

utterance meaning: what a speaker intends to express by his or her use of language in a particular context.

uvular: consonant produced by the back of the tongue coming into contact with or approximating the uvula (the appendage which hangs down in the back of the oral cavity).

vagueness: the quality of having a relatively broad – or broadly undefined – **sense**, and thus encompassing a relatively wide range of possible referents.

variable: see ***sociolinguistic variable***.

variant: see ***sociolinguistic variant***.

variety: see ***linguistic variety***.

velar: a consonant produced by contact between the back of the tongue and the **velum** (soft palate).

velum: the soft portion of the upper surface of the mouth located behind the hard palate; also known as the **soft palate**.

verb: a member of a class of words which function as the grammatical centers of **predicates**; typically denote actions, events, activities, or states.

verbalizer: a derivational affix that creates verbs, e.g., English *-ize*, as in *real-ize* 'make real.'

verb phrase: a syntactic constituent consisting of a verb as the **head** of the phrase, and optional dependents including adverbs, prepositional phrases, object noun phrases, and indirect objects in prepositional phrases.

vernacular: the linguistic variety used in everyday speech in casual settings.

voice: a grammatical construction providing alternate mappings between semantic roles and grammatical relations; includes **active** and **passive**.

voiced consonant or vowel: any consonant or vowel sound produced with vibration of the vocal folds.

voiceless consonant or vowel: any consonant or vowel sound produced without vibration of the vocal folds.

voice quality: a cover term for various modifications of a normal speaking voice.

voicing: the effect produced by the vibration of the vocal folds.

volume: see ***intensity***.

vowel harmony: a type of long-distance assimilation in which all vowels in a word must share a feature (e.g., height or backness).

vowel length: the temporal duration of a vowel, phonemic in some languages.

vowel reduction: the phonological process by which unstressed vowels are converted to schwa-like allophones.

waveform: a visual representation of sound based on its acoustic properties.

weight-sensitive stress: a stress system in a language where the weight or complexity of syllables influences the **stress** patterns; contrasts with **weight-insensitive stress**, where stress is predictably assigned to a given syllable (e.g., initial, final, penultimate) in a word; also referred to as quantity-(in)sensitive stress.

whispering: a voice quality in which the vocal folds in the larynx do not come together as closely as in normal voicing.

"women's language": a language ideology regarding how women are expected to speak.

word: an independent, phonologically coherent linguistic unit containing one or more morphemes, which can fill a particular slot in a sentence.

word class: a set of words that share morphological and syntactic behavior, e.g., **nouns, adjectives**, or **adpositions**.

working memory: a cognitive system for temporarily storing and processing information that has just been experienced or recalled; enables performance of tasks such as language comprehension and production, learning, and problem-solving.

zero auxiliary: the absence of an auxiliary verb that is typically overtly expressed.

zero copula: the absence of a copula verb within a clause, an optional variant in African-American English.

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APPENDIX: IPA Summary Sheet

THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

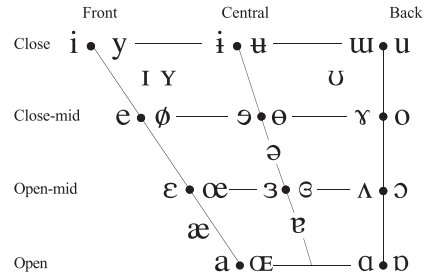
	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k g	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

CONSONANTS (NON-PULMONIC)

Clicks		Voiced implosives		Ejectives	
ʘ	Bilabial	ɓ	Bilabial	’	Examples:
|	Dental	ɗ	Dental/alveolar	pʼ	Bilabial
!	(Post)alveolar	ʄ	Palatal	tʼ	Dental/alveolar
ǂ	Palatoalveolar	ɠ	Velar	kʼ	Velar
‖	Alveolar lateral	ʛ	Uvular	sʼ	Alveolar fricative

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

OTHER SYMBOLS

ʍ	Voiceless labial-velar fricative	ɕ ʑ	Alveolo-palatal fricatives
w	Voiced labial-velar approximant	ɺ	Voiced alveolar lateral flap
ɥ	Voiced labial-palatal approximant	ʄ	Simultaneous ʃ and x
ʜ	Voiceless epiglottal fricative		
ʢ	Voiced epiglottal fricative		
ʡ	Epiglottal plosive		

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.

k͡p t͡s

SUPRASEGMENTALS

ˈ	Primary stress	ˌfoʊnəˈtɪʃən	
ˌ	Secondary stress		
ː	Long	eː	
ˑ	Half-long	eˑ	
˘	Extra-short	ĕ	
|	Minor (foot) group		
‖	Major (intonation) group		
.	Syllable break	ɹi.ækt	
‿	Linking (absence of a break)		

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. ŋ̊

◌̥	Voiceless	n̥ d̥	◌̤	Breathy voiced	b̤ a̤	◌̪	Dental	t̪ d̪
◌̬	Voiced	s̬ t̬	◌̰	Creaky voiced	b̰ a̰	◌̺	Apical	t̺ d̺
◌ʰ	Aspirated	tʰ dʰ	◌̼	Linguolabial	t̼ d̼	◌̻	Laminal	t̻ d̻
◌̹	More rounded	ɔ̹	◌ʷ	Labialized	tʷ dʷ	◌̃	Nasalized	ẽ
◌̜	Less rounded	ɔ̜	◌ʲ	Palatalized	tʲ dʲ	◌ⁿ	Nasal release	dⁿ
◌̟	Advanced	u̟	◌ˠ	Velarized	tˠ dˠ	◌ˡ	Lateral release	dˡ
◌̠	Retracted	e̠	◌ˤ	Pharyngealized	tˤ dˤ	◌̚	No audible release	d̚
◌̈	Centralized	ë	◌̴	Velarized or pharyngealized	ɫ			
◌̽	Mid-centralized	e̽	◌̝	Raised	e̝	(ɹ̝ = voiced alveolar fricative)		
◌̩	Syllabic	n̩	◌̞	Lowered	e̞	(β̞ = voiced bilabial approximant)		
◌̯	Non-syllabic	e̯	◌̘	Advanced Tongue Root	e̘			
◌˞	Rhoticity	ə˞ a˞	◌̙	Retracted Tongue Root	e̙			

TONES AND WORD ACCENTS

LEVEL			CONTOUR	
e̋ or ˥	Extra high		ě or ˧˥	Rising
é ˦	High		ê ˥˩	Falling
ē ˧	Mid		ě ˨˦	High rising
è ˨	Low		ě ˩˧	Low rising
ȅ ˩	Extra low		ě ˦˩˦	Rising-falling
↓	Downstep		↗	Global rise
↑	Upstep		↘	Global fall