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Frederic Nimmermann

Congruency, Expectations and Consumer Behavior in Digital Environments

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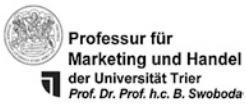

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Springer Gabler

Frederic Nimmermann
University of Siegen
Siegen, Germany

Dissertation, University of Siegen, 2019

ISSN 2626-3327 ISSN 2626-3335 (electronic)
Handel und Internationales Marketing Retailing and International Marketing
ISBN 978-3-658-28420-6 ISBN 978-3-658-28421-3 (eBook)
https://doi.org/10.1007/978-3-658-28421-3

Springer Gabler

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The registered company address is: Abraham-Lincoln-Str. 46, 65189 Wiesbaden, Germany

Acknowledgments: A letter to myself.

Dear Future Me,

what a surprise that you are reading again your dissertation. I hope you will always remember the people around you, who contributed during this time to your work and life. No matter if colleagues, superiors, friends, family or especially your better half: they all shaped memories regarding a more than important stage of your life and contributed considerably to the success of your doctorate. So please always remember...

... your supervisor, Prof. Dr. Hanna Schramm-Klein, who always gave you important impulses for your scientific work and a corresponding freedom to shape your research as you wanted, who gave you constructive criticism, but who also knew when she had to encourage you, who opened new perspectives for your professional life and who helped you to discover a little more of this world,

... the advisory committee members of your dissertation, Prof. Dr. Marcus Schweitzer, who supported the final preparation of this dissertation with meaningful ideas in the run-up to completion and, above all, showed a considerable degree of flexibility in terms of his time and also Prof. Dr. Arndt Werner, who was available at short notice for your disputation and took over the chairmanship of the associated committee,

... Carmen Richter, who has always been the good soul at the chair and has supported you in your tasks in everyday university madness, who was your no. 1 proofreader and who was always available for a good “cup of coffee-chat”,

... your colleagues (and partially co-authors) at that time, Florian Neus, Robér Rollin, Florentine Frentz, Theresia Mennekes, Anne Fota, Katja Wagner, Tobias Röding and especially your scientific mentors PD Dr. Sascha Steinmann, Dr. Gerhard Wagner and Dr. Gunnar Mau, for the exciting lunchtime roundtables, the joint adventures at conferences and the support in professional as well as private life questions,

... to your parents, Fabienne and Wilhelm Nimmermann, who always kept your back free for your studies, put their own wishes aside to support you and found the right words even in difficult moments,

... and especially your fiancée, Jana Freund, for her continuous support in the last years: her patience, especially in difficult times, her encouragement, her willingness for discussions and feedback on your research and also her endless support in the years before that led to the dissertation in the first place. Be grateful for every moment with her. Right now, you are.

Your connection to people in your life and their contribution to your work and private life always only make sense in retrospect. Hence, future me and everybody else reading these lines, stay open for new things, behave in a way that creates new possibilities and as someone famous once said: “stay hungry, stay foolish”.

Siegen, Frederic Nimmermann

Contents

Tables

Figures

List of Abbreviations

Ad ..... advertisement
AI ..... artificial intelligence
ANCOVA ..... analysis of covariance
ANOVA ..... Analysis of variance
AP ..... average playtime
app ..... application
AVE ..... average variance extracted
B ..... regression coefficient
BIF ..... Behavior Identification Form
CASA ..... Computers Are Social Actors
CG ..... congruency
CL ..... construal level
CLT ..... construal level theory
DLC ..... downloadable content
DV ..... dependent variable
ECA ..... embodied conversational agents
ECT ..... expectation-confirmation theory
ESL ..... Electronic Sports League
eSports ..... electronic sports
EU LCS ..... European League of Legends Championship Series
F ..... F-statistic
GPS ..... Global Positioning System
H ..... hypothesis
HCI ..... Human Computer Interaction
IPA ..... intelligent personal assistants
LLCI ..... lower level of confidence interval
M ..... mean
MANCOVA ..... multivariate analysis of covariance
MANOVA ..... multivariate analysis of variance
MIA ..... mental imagery ability
MS ..... mean squares
MSSC ..... motivation scale for sports consumption
N ..... number of sample size

n ..... number of sub-sample size
η^2 ..... Eta-squared
n.s. ..... not significant
(Ne)WOM ..... (negative electronic) Word of Mouth
NFI ..... normed fit index
NOV ..... number of owners of the video game
p ..... p-value
p. ..... page
PAD ..... Pleasure-Arousal-Dominance
PD ..... psychological distance
PLS ..... partial least squares
PR ..... price
R ..... Pearson's r (correlation coefficient)
R^2 ..... R-squared (coefficient of determination)
RQ ..... research question
SD ..... standard deviation
SEM ..... structural equation model
sig. ..... significance level
SPSS ..... Statistical Package for the Social Sciences
SRMR ..... standardized root mean square residual
t ..... t-statistic
ULCI ..... upper level of confidence interval
UTAUT2 ..... unified theory of acceptance and use of technology 2
VIF ..... variance inflation factor
VVIQ ..... Vividness of Visual Imagery Questionnaire
α ..... Cronbach's alpha
β ..... beta (standardized coefficient)

1 Introduction

1.1 Empirical Relevance of Digital Environments

Digital environments are "virtual or cyber-generated environments that [be] can accessed or created through the use of one or more digital devices such as a computer, tablet, or a mobile phone" (Dowell, 2019, p. 128). Environments such as the internet have become one of the most important marketplaces in the world (Kemp, 2018) and offer challenges due to developments in digital marketing (Leeflang et al., 2014). Hence, a general objective for research is, to get a more profound view on how digital environments affect consumers (Stephen, 2016). Consequently, because of the importance of digital environments for consumers and businesses, this thesis strives to deepen knowledge in this area.

In general, digital environments such as streaming services, video games, or the web itself with its digital shopping stores and chat and discussion communities have affected the daily lives of consumers tremendously. More than four billion consumers use the web on a daily basis with an estimated yearly growth of 7% globally (Kemp, 2018). Hence, these environments affect how consumers form their overall daily life (e.g., what consumers do) and on which devices they rely on, on a day-to-day basis, e.g., smartphones or laptops. More than 5.135 billion consumers use mobile, web-enabled devices such as smartphones and spend around six hours per day using the web and related services, such as streaming, online shopping, or gaming (Kemp, 2018). Forecasts predict that more than 80% of all internet users in the United States will access digital video content on platforms such as YouTube or streaming providers such as Netflix daily in 2019 (Statista, 2019a; 2019c). Phenomena such as electronic sports (eSports) support this rise of streaming services. With more than 385 million viewers worldwide, eSports are one of the most important streaming service topics (Freeman and Wohn, 2017; Hamari and Sjöblom, 2017). In particular, an average viewing session in streaming services is about 40 minutes long, which has increased by 50% from 2018 (Aslam, 2019). Another example of digital environments is the use of video games; two-thirds of all US citizens regularly play video games (Entertainment Software Association, 2016). In general, 2.4 billion consumers worldwide will play video games in 2019, due to the use of mobile devices (McDonald, 2019). As an additional example, more than 45% of all internet users use the web regularly for online shopping, resulting in more than 1.7 billion consumers purchasing fashion, electronics, food, travel, digital services, and toys on the web (Kemp, 2018).

F. Nimmermann, *Congruency, Expectations and Consumer Behavior in Digital Environments*, Handel und Internationales Marketing Retailing and International Marketing, https://doi.org/10.1007/978-3-658-28421-3_1

However, the rise of these digital environments not only affects consumers, but also how a business aligns its activities, e.g., its advertising efforts, products, and services, based on this usage. This example of e-commerce has enormous potential for retail companies in terms of participation. E-commerce sales worldwide are predicted to raise more than 3,453 billion US dollars in 2019 (Statista, 2019b). With the huge impact of video games on leisure activities, it is not surprising that video games contribute to almost 53 billion US dollars in spending in terms of video game sales (Kemp, 2018). Based on the usage of streaming services or social media, which have a worldwide user base of more than 3.196 billion users (Chaffey, 2019), these digital environments offer outstanding advertising opportunities. Hence, brands and companies are keen to spend more than 37 billion US dollars in video and social media advertising in 2022, representing a growth of 130% in only five years (Foye, 2018).

1.2 Central Domains and Theoretical Foundation in the Context of Digital Environments

In summary, digital environments already have a huge impact on consumers and businesses alike and considering the growth of each subareas (e.g., streaming consumption), one can assume that these environments will continue to have a considerable influence and achieve ubiquity in the years to come (Hootsuite, 2019). Generally, in recent years new advances in internet technology can be summarized by the transformation into Web 2.0 and even further to Web 3.0 due to the emergence of semantic web technologies and their impact on how consumers interact with digital environments (Berners-Lee et al., 2001; Garrigos Simon et al., 2012). This digital revolution within digital environments creates tremendous challenges for business and research alike, such as consequences of new digital channels and media (Leeflang et al., 2014). Garrigos-Simon et al. (2012) stress that progress in these technologies and the increasing expansion and use of digital environments are leading to remarkable shifts regarding effective business activities. Hence, the overall assumption is that digital environments are evolving and that these transformations not only impact business but also affect consumers' "attitudes, beliefs, and practices" (Barassi and Treré, 2012, p. 1270). Research needs to examine consumers' media practices to provide more accurate analyses of the diverse use of digital environments and its impact on social contexts and lived experiences (Barassi and Treré, 2012). Thus, these assumptions lead to a need for a holistic approach for research in digital marketing, including manifold subareas and relevant topics related to information acquisition, processing and decision aids in digital environments, and shoppers' behavior and advertising (Kannan and Li, 2016; Yuping, 2019). To do so, this thesis investigates both dimensions of digital environments: "environment–integral" (digital environments that influence behavior from within) or

"environment–incidental" (digital environments that influence behavior in unrelated environments). These are of particular relevance (Stephen, 2016, p. 18) when addressing digital environments using a more holistic approach.

Based on this reasoning, digital environments still offer a broad range of general research objectives that address key issues in central domains (Keller, 2014; Mela, 2018; Roy et al., 2016; Sheoran et al., 2018; Stephen, 2016). The thesis sets itself the goal to focus on central domains, which are marked by their ubiquity in consumers' daily lives and which form primary consumer behavior in digital environments (or are, at least, directly related to that behavior) (Bawden and Robinson, 2008; Kemp, 2018). For instance, based on previous reasoning and empirical relevance, e-commerce (i.e., digital shopping) is a key element of digital environment usage (Kemp, 2018). However, consumers shopping online are exposed to related advertising, they seek new information prior to a purchase or interact with platforms using digital assistants (Stephen, 2016). Another example is the use of new media forms and topics, such as using streaming services for digital gaming broadcasts (Hamari and Sjöblom, 2017); these, yet again, affect how consumers are exposed to different forms of advertising or information processing. Hence, these central domains are related to each other and can play a particularly important role in each of the areas under review. It seems feasible to obtain a more profound understanding of consumer behavior and processing in these central domains. Consequently, this thesis seeks to contribute to the following general research objectives in key digital domains:

- **Advertising:** investigating the advertising processing of consumers in digital environments (e.g., Bishop et al., 2015);
- **E-Commerce:** investigating shoppers' information processing in the case of online shopping (e.g., Yoo and Kim, 2014);
- **(Mobile) Conversational Agents:** investigating the interaction with the digital voice assistants of those environments (e.g., Seeger et al., 2017);
- **Complaint-Management:** enhancing the understanding of complaint management for information-seeking web consumers (e.g., Zhang et al., 2010);
- **New Media Forms:** broadening the knowledge regarding the differences in motivation for electronic sports consumption between offline (event on-site) and digital environments (event stream) (e.g., Hamari and Sjöblom, 2017); and
- **Digital Gaming:** the impact of social elements of an online community in digital environments as success drivers for video games (e.g., Butler et al., 2014).

In recent years, research has already addressed the different phenomena of these environments to enhance knowledge on consumer behavior in these contexts and has called for further investigation (Lamberton and Stephen, 2016). This is, likewise, in line

with general calls for research in marketing (e.g., Keller, 2014; Mela, 2018). It is against this backdrop that this thesis seeks to understand how the developments and specific phenomena in digital environments affect consumer behavior and processing. Hence, it aims to addresses these research objectives by taking relevant specific phenomenon in each subarea into account. Focusing on these research objectives, this thesis builds on two fundamental assumptions, which are related to each other (Maille and Fleck, 2011): consumer expectations (e.g., Oliver, 1977) and congruency effects (e.g., Osgood and Tannenbaum, 1955). In general, these theoretical approaches are of particular importance in marketing-related research (e.g., Maille and Fleck, 2011; Spreng and Olshavsky, 1993) and offer explanations for the effects under review in this thesis.

Very briefly, consumers create expectations prior to an action such as buying or searching for information (Oliver, 1977). If these expectations are fulfilled, resulting in positive disconfirmation, consumers have a sense of satisfaction or, in cases of negative disconfirmation, dissatisfaction (Oliver, 1980). Research offers multiple approaches for explaining these comparison standards (Spreng and Olshavsky, 1993), such as the value–percept disparity, in which the comparison is facilitated in a "[…] response triggered by a cognitive-evaluative process in which the perceptions of (or beliefs about) an object, action, or condition are compared to one's values (or needs, wants, desires)" (Westbrook and Reilly, 1983, p. 258). Hence, consumers are exposed to their own expectations and behave accordingly (Spreng and Olshavsky, 1993). Regarding these comparisons, congruence effects are in line with these assumptions by taking consistency models into account (Tannenbaum, 1967). In general, congruence refers to the matching of or similarity between objects, i.e., objects are consistent with each other or at least have a structural correspondence based on knowledge and related expectations (Maille and Fleck, 2011). In particular, literature stresses the importance of schemata (i.e., prior knowledge structure) because of their impact on the evaluation of congruence due to consumer expectations (Mandler, 1982; Stayman et al., 1992). The positive effects of congruence can be explained based on the assumption that individuals value the harmony of the given combination in general, or the specific elements of combined objects (e.g., context and ads) (Osgood and Tannenbaum, 1955). Hence, in both cases, the literature proposes that the convergence of assumptions or perceptions lead to more positive processing and evaluation; these, in turn, lead to favorable outcomes such as the positive behavior of consumers.

In summary, this thesis investigates phenomena in digital environments that affect consumer behavior as well as attitudinal responses; however, these phenomena are based on cognitive processing and evaluations, which are based on the general assumptions of expectations and congruency effects. These fundamental assumptions are depicted in Figure 1.2-1.

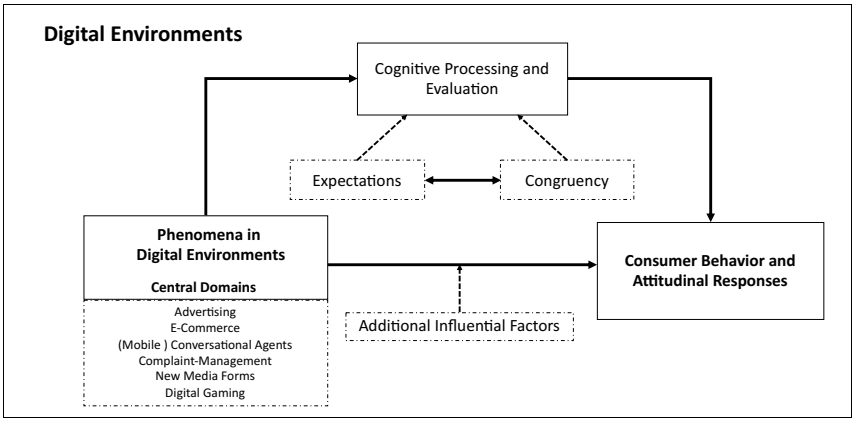

Figure 1.2-1. General Conceptual Framework

While this theoretical framework proposes the basic concept of this thesis, each essay is accompanied by a well-grounded research framework related to its specific context and builds on its corresponding research questions. More precisely, these assumptions play a particularly important role in this thesis, because congruency and expectation effects are based on general assumptions for consumer behavior, either directly, e.g., congruency effects in advertising in essay 1 or expectations regarding service recovery in essay 4, or indirectly, such as expectations due to different motivations, as in essay 5. However, specific research questions addressing the previously mentioned central domains shape the foundation of each essay, which will be presented in the following chapter.

1.3 Research Gaps in Central Domains of Digital Environments

Based on previous reasoning, this thesis focuses on central domains and phenomena within digital environments. The main and subordinate purpose is, therefore, to obtain a more profound understanding about the consumers in these environments. In general, the thesis follows three main and subordinate research goals (see Table 1.3-1): first, this thesis strives for a deeper understanding of consumers' cognitive processing in digital environments because previous research indicates peculiarities regarding the selection and processing of information (e.g., Ismagilova et al., 2019; Metzger and Flanagin, 2013; Yuping, 2019). Second, this thesis investigates the role of expectations in digital environments, which lead to decision making in choice and behavior based on previous research that stresses the general importance of those aspirations to explain consumer

behavior regarding digital environments or technology (e.g., Burke, 2002; Butler et al., 2014; Hennig-Thurau and Walsh, 2004; Venkatesh et al., 2012). Third and final, since previous literature stresses the importance of dissimilarities between digital and analog environments (e.g., Stephen, 2016; Yoo and Kim, 2014; Zhang and Byon, 2017), this thesis investigates how these particularities shape the behavior of consumers for specific subjects.

Table 1.3-1. General Research Goals

Topics of Interest *A profounder understanding of…*	**Essay 1**	**Essay 2**	**Essay 3**	**Essay 4**	**Essay 5**	**Essay 6**
… consumers' cognitive processing in digital environments.	✓	✓		✓		
… expectations affecting choice and behavior in digital environments.			✓	✓		✓
… differences of digital environments to analogues ones.		✓			✓	

These research goals are in line with the proposed relationships in the general conceptual framework (see Figure 1.2-1): in essence, the thesis discusses how cognitive processing in various sub-areas of digital environments is influenced by expectations and congruence effects. However, it strives to do so by examining important research gaps within the six central domains. These domains, consolidated within digital environments, each have specific research questions, so that an overview can be successively presented in the following chapter.

Congruency effects are an important issue in the first domain, which is related to advertising (Dahlen et al., 2008). Research in this domain stresses the importance of contextual congruency between advertisements and the actual context in which it is shown (Yuping, 2019). In particular, studies in this domain show effects of ad-context congruency in different digital environments such as the web or in video games. Thematic congruency generates positive reactions to an advertisement (Moore et al., 2005), positive attitudes towards the advertised brand (Choi and Rifon, 2002), and stronger purchase intentions (Jeong and King, 2010). Research has also shown positive effects of incongruency, for instance, with regard to memory effects; however, this seems heavily dependent on incongruency operationalization (e.g., Dahlen et al., 2008; Halkias and Kokkinaki, 2014; Moore et al., 2005). However, due to the rise of digital environments, and, thus, advertising in different contexts (e.g., video streams or mobile games with different topics, genres, and content) it is difficult for advertisers to guarantee a thematic congruence between their products or services and the actual context (Li and Lo, 2014). Consequently, it is not surprising that literature calls for additional research to achieve maximum advertising effectiveness (Yuping, 2019) and

in particular, a deeper understanding of interaction between digital context and advertisements (Mela, 2018).

The previously mentioned effects can be explained by schema theory, which postulates that incoming information that does not match pre-existing knowledge, and, thus, cannot be processed in relation to preexisting knowledge, leads to a perception of incongruency (Mandler, 1982). In particular, a high level of incongruence and the need for strong cognitive adjustments to fit incoming information in previous knowledge, leads to frustrated consumers and negative evaluations (d Astous and Bitz, 1995). However, research shows that cognitive flexibility helps find possible connections within given knowledge and, thus, can enhance the resolution of incongruence (Jhang et al., 2012; Meyers-Levy and Tybout, 1989). Hence, an important research objective is to find ways to enhance this resolution. Surprisingly, the impact of psychological distance as anchors (e.g., in time) for digital advertisements has not yet been analyzed. Based on construal level theory, it is psychological distance that leads to concrete or abstract mental construal in consumers (Trope and Liberman, 2010). Transferring the basic assumptions of schema (incongruity) theory (Mandler, 1982) to the study, this thesis proposes that an abstract mental construal leads to an enhanced resolution of incongruency in a digital context, whereas a concrete mental construal is more effective in processing congruent information. Thus, in the domain of advertising, this thesis investigates how psychological distances might be used to enhance the resolution of digital incongruent advertisements. Hence, the first research question arises:

- How do psychological distances affect the congruency perception and processing of advertisements in digital environments?

Effects of vividness and mental imagery are of particularly importance for retailing in digital environments such as the internet (Jiang and Benbasat, 2007; Yoo and Kim, 2014), which is the second domain investigated in this thesis. The lack of haptic and gustatory information, e.g., being able to a touch a given product in online environments can lead to purchase cancellations due to reduced confidence in decision making (Peck and Childers, 2003). However, research stresses a higher purchase probability for products that are presented with higher sensory richness (e.g., Steinmann et al., 2014; Van Der Heide et al., 2013). Yet, product pictures represent a substantial source of sensory information in an online store (Yoo and Kim, 2014). Thus, online retailers try to tackle this issue by offering vivid product presentations (e.g., a product picture) and higher sensory richness, which, in turn, lead to more positive outcomes (Coyle and Thorson, 2001). This can be explained by the effects of mental imagery, i.e., a mental event involving the visualization of a concept or relationship (Lutz and Lutz, 1978). Here, mental imagery reflects the process by which a sensory experience is represented

in the consumers' working memory (MacInnis and Price, 1987). Shoppers experience the gratification that arises from consuming alternative products presented more vividly, which, in turn, leads to more favorable outcomes for retailers (Coyle and Thorson, 2001).

However, while most research about online retailing has focused on individual elements of web environments (Chung et al., 2018), such as interactivity (e.g., Xu and Sundar, 2012), sensory stimuli in general (e.g., Parsons and Conroy, 2006) and vividness in particular (e.g., Steinmann et al., 2014), surprisingly, one key element has been ignored by taking mental imagery into account: delivery time as moderator. Previous research concerning delivery time mostly interprets it as a barrier to e-commerce (e.g., Chen et al., 2010; Li et al., 2014). However, this thesis investigates delivery time as a form of psychological distance. Previous research has shown that psychological distance might shape how information heuristics affect consumer behavior (Braga et al., 2015). Hence, by taking the construal level theory into account, the thesis proposes that temporal distance might shape the way that abstract or concrete information are preferred in the context of online retailing. In particular, it proposes that abstract information is preferred due to a high mental construal evoked by a high (temporal) psychological distance and vice versa. Thus, the second research question arises:

- How do psychological distances shape preferences in processing concrete or abstract product information on online stores?

As well as the internet, digital environments also affect consumer behavior in the analog world (Lamberton and Stephen, 2016). Hence, taking a more holistic approach to digital environments into account, another research question deals with digital voice assistants and the impact of human-like elements on the behavioral intentions of consumers. In general, striving for the most realistic human-like design of conversional agents is seen as a desirable goal in research (Seeger et al., 2017). According to the media equation theory (Reeves and Nass, 1996), consumers apply social norms based on interactions with humans when interacting with various media such as computers and robots. So far, research has shown that a well-balanced anthropomorphic phenomenon, known as the "persona effect", is believed to have promoted the credibility of non-human actors and how they positively affect consumers' attitudes toward the system (Lester et al., 1997). These assumptions are in line with the Computers Are Social Actors (CASA) paradigm, which proposes that consumers apply identical social heuristics used for human interactions with computers (Nass and Moon, 2000) and, consequently, reflects the human–human trust perspective (Nass et al., 1994). The CASA paradigm represents an established theoretical basis for research with an interest in understanding how to enhance the trustworthiness of digital agents (Riedl et al., 2014; Seeger et al., 2017). This leads to consumers being more responsive toward computers than they would be

to a person (Nass et al., 1994) and pay attention to presenting one's self positively (Sproull et al., 1996).

However, in studies regarding interactions with visual agents, consumers also showed nervousness toward overly intense observations by the agent (Brahnam and De Angeli, 2012). Research has also shown negative effects of anthropomorphism in case of robots (MacDorman and Ishiguro, 2006). In particular, these results are coherent with the so-called Uncanny Valley Paradox (Mori, 1970), which describes the effect in which a human-like design leads to an improvement in users' perceptions but only to a certain degree and only until the similarity is so strong that it is perceived uncanny (Mori, 1970; Mori et al., 2012). Consequently, the design of the robot is inconsistent because, on the one hand, it is congruent with a real human, but on the other, it is already too advanced to be clearly classified as robotic. This creates a situation in which the robot cannot (immediately) be assigned to a category, so that the Uncanny Valley effect arises (Mori, 1970). Hence, a research question arises about how beneficial human-like elements are based on these contradicting views about the accepted use of voice assistants. This question contributes to technology acceptance models such as unified theory of acceptance and use of technology (UTAUT2) (Venkatesh et al., 2012) because human-like elements are not yet part of these considerations, and, thus, allow a more holistic view of this technology. So here, the third research question arises:

- How does a perceived congruency due to human-like elements of digital voice assistants and actual users affect intentions to use such technology?

Digital environments offer a broad range of information that consumers consider prior to a purchase decision (Hennig-Thurau and Walsh, 2004); this is the fourth area of specification in this thesis. In general, research on complaint handling has developed strategies regarding its management, i.e., how a company should respond to a complaint that is related to dimensions of redress, timeliness, facilitation, apology, credibility, and attentiveness (Davidow, 2003). Research stresses the importance of those established dimensions and considers their impact on consumer behavior (e.g., Einwiller and Steilen, 2015; Estelami, 2000; Sparks and McColl-Kennedy, 2001). Research shows that an effective use of complaint strategies and successful complaint handling cannot only recover the satisfaction of the complaint (Homburg and Fürst, 2007), but also lead to an increase in the satisfaction level of the complainant regarding the company, which goes beyond a level at which no service failure happened, and thus, leads to the so-called service recovery paradox (McCollough et al., 2000).

Research in this context has mostly focused on the actual complainant. The recent years of digitalization have had an impact on general methods of communication (Deighton

and Kornfeld, 2009), which means that these complaints are also publicly available on the internet (Hennig-Thurau et al., 2010) and are almost infinitely accessible (Duan et al., 2008). Hence, research should distinguish in the context of these strategies between the actual complainant and those consumers who seek information prior to a purchase (Hennig-Thurau and Walsh, 2004). Previous theoretical concepts, such as expectation confirmation theory (e.g., Oliver, 1980; Oliver and DeSarbo, 1988), justice theories (e.g., Bies and Moag, 1987; Blodgett et al., 1997; Cook and Hegtvedt, 1983), and cognitive dissonance theory (Festinger, 1957) offer potential explanations for the underlying effects of the processing of companies' answers to complainant research. Specifically, a congruency between the consumers' expectations of how the company should answer and how the actual service recovery (i.e., the response to a complaint) shapes attitudinal and behavioral outcomes (Homburg and Fürst, 2005). While these theoretical assumptions might also hold true for the silent observer, the weighting and processing might differ due to different motivations (Hennig-Thurau and Walsh, 2004; Hennig-Thurau et al., 2004) and reference points (Smith et al., 1999). Thus, the fourth research question addresses the expectations of consumers and how a company should answer to a service failure of an unknown complainant and the corresponding processing and related behavior. Hence, the fourth research question arises:

- How do "silent observers" of a public consumer complaint process the answer of a company by considering established service recovery strategies?

Recent years have extended traditional means for consumers' digital consumption, such as streaming services (Bründl et al., 2017). The fifth domain of this thesis deals with the opportunity for event consumption in digital environments and the related underlying motivation of consumers. Previous research has investigated leisure motivation (Beard and Ragheb, 1983), which has been extensively drawn out to different event forms (Li and Petrick, 2005), such as festivals (e.g., Nicholson and Pearce, 2001), universal expositions (Lee, Lee and Wicks, 2004), concerts (e.g., Kulczynski et al., 2016), or sports consumption in general (Trail and James, 2001) and literature stressed the differences between these event forms. However, technological developments and advances in digital environments led to complete new event forms (Zhang and Byon, 2017) and related industries such as eSports (Freeman and Wohn, 2017; Hamari and Sjöblom, 2017).

However, while there is established research regarding motivation for event sport consumption (Kirkup and Sutherland, 2015), there is a specific research gap in dealing with eSports. Following the uses and gratification theory (Katz, Blumler, et al., 1973), consumers decide on consumption based on their interests (e.g., context) and needs (e.g., escape from reality or entertainment) offered by the media (Hamari et al., 2018). The decision regarding a medium, thus, depends on user expectations and the satisfaction of

the needs of the media offer; therefore, developing congruency between expectations and fulfillment (Severin and Tankard, 2013). However, while digital consumption forms such as streaming services are popular for many sports forms, eSports are rooted in digital environments, whereas classic sports (e.g., soccer or basketball) originate from an analog world of consumption (Hamari and Sjöblom, 2017; Zhang and Byon, 2017). Consequently, one can observe a shift from pure digital consumption to alternatives, such as a digital consumption in an offline environment, which might fulfill different needs. Even though research has already investigated differences in offline and online event consumption, indicating differences between these environments, it is mostly based on specific forms of sports (e.g., Hu et al., 2017; Seo and Green, 2008; Zhang and Byon, 2017), research in the context of eSports is scarce. Hamari and Sjöblom (2017) introduced an adapted motivation scale for consumption, especially for eSports. Building on that idea, Pizzo et al. (2017) analyzed the differences between sports and eSports consumption in relation to a given sports theme. However, research has not yet distinguished between the two forms of consumption based on the environment (i.e., digital vs. analog) for eSports. Hence, a more profound understanding of those environments contributes to building a foundation for further efforts on theory and model building of future research (Li and Petrick, 2005). Thus, the fifth research question arises:

- How does event participation motivation as spectators differ between analog and digital environments for eSports?

Finally, digital environments offer opportunities for leisure activities, in which gaming has become one of the most important possibilities and the final domain under research in this thesis. Despite the importance of video games, success drivers of video games have not yet been sufficiently empirically investigated. In general, research proposes that the success of a video game depends on the high number of users of a specific video game console, e.g., Xbox or PlayStation (Gretz, 2010). Surely, a high number of users of a specific video game console has a positive effect on the sales volume of video games due to the user base (Gallaugher and Wang, 2002). However, the quality offered in video games seems to be an even more important factor (Anderson et al., 2014; Lee, 2013). In fact, research interprets video games as hedonic products (e.g., Lin, 2010; Turel et al., 2010), so quality can only be assessed by a consumer after a purchase is process. Thus, video games as hedonic products portray economic risks for new users (Voss et al., 2003); consumers rely on third-party information to reduce risk (Hennig-Thurau and Walsh, 2004). Previous research shows that consumers rely on the reputation of the developer and reviews from journalists (Cox, 2013), which affect consumers' expectations and video game sales (Binken and Stremersch, 2009). The game genre, the

actual pricing, and the promotion effect shape the actual success of a video game in a similar way to that of movies (Cox, 2013; Hennig-Thurau et al., 2012; Marchand, 2016).

Nevertheless, the role of newer features such as social interactions with other gamers while playing video games have been ignored as potential success drivers so far. However, the way video games are consumed by users through social media, online forums, and multiplayer features has changed dramatically within the last ten years (Marchand and Hennig-Thurau, 2013). Social interaction, knowledge-sharing, and lively discussions are essential factors of any online community (Butler, 2001; Wasko and Faraj, 2005) and the video game community thrives on the same principles. In this context, network effect theories (e.g., Beck, 2006) suggest that the value for consumers of a membership in a network is "positively affected when another user joins and enlarges the network" (Katz and Shapiro, 1994, p. 94). Consequently, the benefits of consuming a product such a video game depend positively on the total number of owners who purchased it, because it enhances the product due to its incentive for the provision of complementary products or services (Church et al., 2008). Hence, through new online multiplayer features, in-app purchases, and communication channels, users have been able to update video games, add new features, and share their passion with people from different countries and continents. Video games are no longer just a product that a user buys for a fixed price and enjoys playing on their own or with known friends. The perceived utility of these multiplayer and communication features goes beyond the traditional gaming experience as it enhances interpersonal relationships (Ledbetter and Kuznekoff, 2011). Such relationships satisfy a fundamental need for relatedness through interpersonal social interactions within the virtual world (Downie et al., 2008). However, these social interactions have not been empirically analyzed in this context. Transferring the basic assumption of Oliver's (1977) expectation–confirmation theory to this setting, the thesis investigates the impact of social interactions on video game success (e.g., number of owners) to set ground for a more holistic approach in video game success research. Thus, another research question arises:

- How do social interactions shape the success of a video game in comparison to classical video game elements?

Based on previous reasoning, this thesis strives to answer relevant research questions in central domains of digital environments. Investigating these specific questions and phenomena in each area adds meaningful knowledge to previous research and sets new foundations for further research. These research questions are in line with practical issues in digital worlds, so that both academia and practitioners profit from the results and implications of the thesis.

2 Structure and Content of the Essays

2.1 Focus of the Essays

The primary goal of this work is to enhance understanding of the central domains of consumers' cognitive processing, their behavior in digital environments, and, moreover, how expectations and congruence explain and shape the central consumer related outcomes as proposed in the general conceptual framework. All six essays (see Table 2.1-1) focus on specific topics in digital environments, by dealing with relevant questions for practice, and, in particular, by taking important marketing academia-related research questions into account.

Table 2.1-1. Essay Overview

Essay Title	Subarea of Digital Environments
Does Mental Construal Influence the Perception of Incongruent Advertisement? The Role of Psychological Distance in Ad Processing	Digital Advertising
Vividness of Product Images in Online Stores: The Role of Delivery Time	Online Retailing
Is It Human? The Role of Anthropomorphism as a Driver for the Successful Acceptance of Digital Voice Assistants	Digital Voice Assistants
Online Complaints in the Eye of the Beholder: Optimal Handling of Consumer Complaints on the Internet	Online Complaint Management
Differences and Similarities in Motivation for Offline and Online eSports Event Consumption	Digital Sports Consumption
The Need for a Community: The Impact of Social Features on Video Game Success	Online Communities

This chapter contains an overview over the central essays included in this thesis by presenting extended abstracts of the content. The first essay focuses on the role of psychological distances based on the construal level theory (Trope and Liberman, 2010) for processing advertisements in streaming services and mobile games. In particular, the essay focuses on how context incongruent brands profit from abstract mental construal, and, thus, a broader schemata of consumers. The second essay addresses the impact of delivery time as a psychological distance on the effects of a congruence between concrete or abstract mental construal, and more or fewer vivid product images in online stores. Essay three investigates the role of anthropomorphism for the acceptance of digital voice assistants, i.e., how the congruence between the assistant's voice and

F. Nimmermann, *Congruency, Expectations and Consumer Behavior in Digital Environments*, Handel und Internationales Marketing Retailing and International Marketing, https://doi.org/10.1007/978-3-658-28421-3_2

human-like characteristics impacts the intention to use a given assistant. The fourth essay focusses on the effects of different complaint-handling strategies of businesses in online environments, while, at the same time, shifting the perception of these strategies to the "silent observer" and their expectations in comparison with well-established research regarding the complainant. The fifth essay addresses the difference in motivation for online and offline event consumption for eSport events and which expectations towards these events are shaped (e.g., possibilities of social interaction). The last and sixth essay targets the influence of social features in video games for their success and how this might affect consumers' expectations for the introduction of new video games. In the following subchapters, the purpose, the central research questions, and the methodology of each essay are summarized. The main results and contributions are also presented.

2.2 Essay 1 - Does Mental Construal Influence the Perception of Incongruent Advertisement? The Role of Psychological Distance in Ad Processing

The purpose of the first essay is to introduce psychological distances as a novel influential factor for perception advertisements in digital environments, and, thus, broadening the knowledge for research and practice for advertising processing.

Increasing digitalization in recent years has had a large impact on consumers' consumption of services in digital environments. eSports have earned, with more than 385 million viewers worldwide, the role of one of the most important streaming service topics (Freeman and Wohn, 2017; Hamari and Sjöblom, 2017). Generally, digital gaming is one of the most popular forms of entertainment (Herrewijn and Poels, 2015) and this industry has become one of the largest entertainment industries (McDonald, 2017). This highlights the potential of advertising in these environments, and, therefore, their importance for both marketing research and practice. In this context, the thematic congruence of streaming or game content (e.g., automobile blog or racing game) and advertisement (e.g., automobile advertising) is of particular importance and is regarded as one of the most important criteria for the selection of an advertising medium (Dahlen et al., 2008). Based on schemata, research stresses the importance of a contextual advertising congruence because it leads to positive effects on consumer behavior and evaluations of advertising (e.g., Bishop et al., 2015; Moore et al., 2005). In contrast, incongruity usually leads to negative behavior and evaluations (Halkias and Kokkinaki, 2014). This can be explained due to the ease of categorization of the advertising input and context to previous knowledge, (e.g., a jeans advertisement on a fashion website), and, thus, an enhanced and more fluent advertising processing (e.g., Halkias and Kokkinaki, 2014; Mandler, 1982; Verberckmoes et al., 2016). In contrast, incongruency needs a higher level of cognitive processing to find a link between context and

advertising at all, which leads to more challenging categorization and, thus, more negative evaluations (Houston et al., 1987).

Due to the heterogeneity of the content of each of these services (e.g., YouTube) or the implementation of dynamic advertising systems in mobile games, it is a challenge for advertisers to display in a congruent context. Surprisingly, there is a research gap in the literature regarding the influence of schema incongruence and how to support the resolution of incongruence among consumers to counteract this challenge. Hence, based on construal level theory (Trope and Liberman, 2010), this essay postulates a relationship between mental abstraction levels due to invoked psychological distances from the advertisement and context congruence evaluation. Here, in conjunction with a high construal level and associated with a more abstract mental level, consumers should more easily find the "link" between a context-incongruent brand and the environment, so is more likely that a higher level of congruence is perceived. Conversely, in the case of a context-congruent brand, a concrete level of abstraction should, additionally, reinforce the obvious schema links. To close the research gap and verify the assumptions regarding the effects of psychological distances, three experiments (2x3 between-subject design) were carried out in the context of advertising in two streaming services and in a racing game for mobile devices. In all three experiments, respondents had to evaluate a given advertisement in a congruent (vs. medium congruent vs. incongruent) context. In the first experiment (soccer stream, N = 228), the construal level was operationalized as the disposition of the participants, whereas in the follow-up experiments the psychological distance (temporal "long vs. short" and geographical "far vs. near") in the context of an event announcement (experiment 2, streaming service, N = 214) and announcement of a game expansion (experiment 3, mobile racing game, N = 221) was artificially stimulated. To analyze and interpret the data of the three experiments, analysis of variance (ANOVA), related contrast tests, and regression analyses were conducted.

The preliminary study (experiment 1) confirmed the general impact of different level of mental construal on the congruence evaluation. Results of the two consecutive follow-up experiments show the successful altering of the mental level of abstraction due to a low vs. high psychological distance from the advertisement and, therefore, different evaluations of the three brands (low, medium, and high congruence within the context) depicted in the experiments. Lower and, thus, more concrete mental abstraction levels promoted the perception of advertising of context-congruent brands, whereas a high level of mental construal was beneficial in case of an incongruent brand (e.g., advertising jeans in a racing game). These effects are not only observable in case of congruency processing, but also for the overall processing of the advertisement, e.g., the

advertisement's credibility. Thus, matching a given level of congruency with an analog level of mental construal, due to a specific level of psychological distance, leads to a more positive advertising process and positively affects behavioral outcomes.One main contribution of the first essay is its expansion of marketing knowledge by introducing psychological distances as a novel influential factor for the processing of congruency, especially in the case of advertising in digital environments such as streaming services and mobile games. Practitioners benefit from new advertising strategies; brands desiring to advertise in an incongruent context (e.g., due to a favorable target group) or in a less controllable environment (e.g., YouTube videos) should advertise in a psychologically distanced and, thus, more abstract context, to promote the ease of the incongruent advertisement's cognitive processing and, therefore, positively support its effects.

2.3 Essay 2 - Vividness of Product Images in Online Stores: The Role of Delivery Time

The purpose of the second essay is to investigate the role of delivery time as psychological distance for consumers' processing of product presentations in online stores, broadening understanding of online shopping by considering delivery time not only as a barrier for e-commerce, but as an important moderator for attitudinal and behavioral responses of shoppers.

E-commerce is one of the most important growth sectors worldwide: global retail e-commerce sales are expected to reach the mark $ 4.878 billion by 2021 (eMarketer, 2018). Thus, retailers see an extraordinary incentive to participate in this sector. However, online retailers have to optimize their stores, e.g., product presentations, in the best possible way to attract online shoppers. Here, product images of a given product are particularly important, as, in contrast to brick and mortar stores, the sensory richness is heavily reduced. Products on online stores cannot be touched or smelled, which is a major challenge for online retailing (Yoo and Kim, 2014). However, research has shown that a more pronounced sensory richness (e.g., a higher degree of haptics) leads to a higher level of purchase confidence, which results in more positive behavioral outcomes (e.g., Müller, 2013; Van Der Heide et al., 2013). One explanation offered by research is that a higher level of sensory richness, which is the representational richness of a mediated environment, leads to a higher level of vividness for a given product (Steuer, 1992). Here, the mental imagery reflects the process by which a sensory experience is represented in consumers' working memory (MacInnis and Price, 1987). Based on this reasoning, shoppers experience a higher level of consumption gratification arising from products presented more vividly in contrast to a less vivid presentation, which is assumed to lead to more favorable behavioral outcomes and thus, concluding that in an

online environment a higher level of vividness of product images leads to more positive consumer responses (Coyle and Thorson, 2001).

This assumption highlights a research gap, because research surprisingly ignores one central characteristic of online stores as a factor that not only produces transactions costs but leads to a psychological distance: the delivery time. Based on construal level theory (Trope et al., 2007), research suggests a connection between temporal distances (e.g., delivery time) and the mental construal of consumers (Trope and Liberman, 2010) and moreover, that consumers tend to overcome psychological distances by creating analog mental representations (Lynch and Zauberman, 2007). In addition, research indicates relationships between these mental abstraction levels and the heuristics used by consumers (e.g., more abstract information) (Braga et al., 2015). However, it is unknown how this affects the preferences for different levels of product image vividness by considering created mental representations. Thus, this essay investigates the impact of different mental abstraction levels (i.e., based on the delivery time) on the preference of different product images on online stores and their relationship to behavioral and attitudinal outcomes of shoppers.

To close the research gap and verify assumptions regarding effects of temporal distances on product image processing, this essay contains two consecutive experiments. Both experiments followed a 2x2 between-subject design with the delivery time of the experimental factors (high vs. low) and vividness of the product images (high vs. low). In both experiments, participants had to evaluate a product on an artificial online store and answer questions regarding their attitudinal and behavioral responses, correspondingly. Here, the products were depicted in different combinations of vividness and delivery times. In the first experiment (N = 256), respondents had to evaluate a chocolate bar as a hedonic product, which was wrapped (low vividness condition) and unwrapped (high vividness condition). The first experiment investigated whether the proposed effects held true and how mental imagery was affected by a congruence through an abstract (vs. concrete) mental construal and a more abstract (vs. concrete) product image due to their vividness. The second experiment (N = 365) extended this by adding a more utilitarian product (i.e., a printer) in addition to a hedonic product (i.e., a coffee machine) for robustness tests of the results regarding different product categories. The second study expanded on the findings regarding the mediating effects of mental imagery and shed light on potential boundaries in which the effects disappeared. To analyze and interpret the data of the two experiments, analysis of (co-) variance (ANCOVA) and related contrast tests were used. Potential moderating effects were investigated using regression analyses.

The results of the first study showed that a higher delivery time leads to a higher construal level, which leads to the conclusion that delivery time should be interpreted as psychological distance. While results do not show an expected main effect of the vividness (i.e., higher vividness is more favorable), results suggest that matching the delivery time with a corresponding vividness level of the product image might be suitable in case of low delivery time, and, thus, more concrete mental construal, because consumers prefer a higher level of vividness in product images. In contrast, in the case of a long delivery time and, therefore, processing with a higher level of mental construal, a product image that is less vivid and more abstract leads to a more favorable outcome. Results of the second study confirm the previous ones and testing both for a more hedonic and utilitarian product indicates an independency of the effects regarding the product category. In addition, results show that ownership imagery as a subdimension of mental imagery is affected by the interplay of delivery time and level of vividness; however, surprisingly, consumption imagery is only affected by the direct effects of vividness. Finally, results also suggest that the proposed effects only occur if the prospective shopper has the ability for analog imagination. In cases of low mental imagery ability, results indicate that the effects of the interplay of delivery time and vividness disappear.

The main contribution of the second essay is that it shows that the delivery time in online stores should not been seen only as a barrier during the shopping process but as an important moderator that affects the processing during shopping and, thus, attitudinal and behavioral responses. Previous research indicates the effects of psychological distances in offline contexts (e.g., perception of assortment), which opens further research questions in digital shopping environments, i.e., which effects of delivery time and other psychological distances go beyond affecting perceptions of vividness. For online retailers, this study shows that it seems beneficial to implement a dynamic product image rotation based on delivery time, so that more concrete or abstract product images are given to prospective shoppers.

2.4 Essay 3 - Is It Human? The Role of Anthropomorphism as a Driver for the Successful Acceptance of Digital Voice Assistants

The third essay focuses on the impact of the human-like characteristics of digital voice assistants in comparison to classical drivers of technology acceptance on the intention to use those smart assistants.

Digital voice assistants such as Apple’s Siri or Amazon’s Alexa are revolutionizing access to web content (e.g., shopping or weather information) and the use of smart technology (e.g., smart home devices). These assistants show tremendous growth; in the first three quarters of 2017, more than 17 million smart speakers were delivered

worldwide and another 16 million during the holiday season (Gibbs, 2018). Experts estimate that by 2020, half of online searches worldwide will be made using the voice (Olson, 2016), which also indicates a shift in consumers' overall use of technology.

In general, intelligent personal assistants are applications that use inputs such as the user's voice or contextual information (e.g., GPS position) to assist in (verbally) answering natural language questions, as well as making recommendations and performing actions (Hauswald et al., 2015). Thus, assistants such as Siri use certain skills such as determining actions, solving problems, drawing inferences, and returning with a verbal corresponding solution or action for the user (Hayes-Roth, 1995). Here, a recent study shows that vocal interaction can actually trigger emotions (Horstmann et al., 2018). Thus, dealing with voice assistants not only indicates an interaction with technology per se, but an interaction with a human-like receiver and sender and, therefore, a duality of technology. Anthropomorphism, hence, seems of particularly importance; it is defined as the tendency to attribute the actual or perceived behavior of non-human actors, human characteristics, motivations, intentions, or emotions (Epley et al., 2007). Literature regarding, e.g., embodied conversational agents such as robots, indicates that anthropomorphism usually plays a key role in influencing the behavior of consumers interacting with these agents (Becker et al., 2007; Fridin and Belokopytov, 2014). Goudey and Bonnin (2016) show that a partially anthropomorphic appearance improves acceptance by consumers with practical experience of analogous technology. Waytz et al. show (2014) that anthropomorphism increases the overall trust in using the given technology. Hence, there are consequences of adding human characteristics to machines.

Research does not yet offer studies that address the previously mentioned duality and there are no empirical insights into anthropomorphism concerning digital conversational agents and the assistants' voice, or how it influences the intention to use a given assistant in comparison to classic technology drivers. Past research is mostly related to conversational agents dealing with technological aspects of the software (e.g., Bellegarda, 2013; Harris, 2005). Previous research refers to the effect of personification or the integration of emotions in the design of conversational agents, but without considering the users' acceptance (e.g., Callejas et al., 2011). The use of natural language in studies concerning digital conversational agents and the anthropomorphism of the voice is usually of minor importance. Thus, identifying a research gap, the fifth essay addresses three central research questions regarding the duality of voice assistants: first, which role does anthropomorphism take for the acceptance of digital voice assistants? Second, which drivers of anthropomorphism (i.e., perceived sociability, animacy and human-like fit) are the most important to affect the likability of the

assistant? Third, how does anthropomorphism compare with regard to the importance of the intention to use a digital voice assistant in comparison to classical technology drivers?

To address these research questions, a quantitative online survey was conducted (N = 283). First, participants had to answer questions regarding regular technology acceptance drivers such as habit or performance expectancy based on the unified theory of acceptance and use of technology. Second, participants had to evaluate potential anthropomorphism drivers such as perceived sociability, animacy, and a human-like fit considering the voice of the voice assistant. In addition, participants had to evaluate how these drivers affect the likeability of the assistant. In order to ensure a preexisting experience of the participants with voice assistants, e.g., on a smartphone, participants were asked how familiar they are with voice assistants, how often they use them or watch someone using this technology, and with which assistants they are dealing (e.g., Siri, Alexa, Google Assistant, Cortana, Bixby, or others) on a regular basis. To analyze and interpret the data of the survey, structural equation modeling, based on partial least squares approach, was used.

First of all, results show that most drivers of the classical technology acceptance approach (e.g., performance expectancy or habit) also hold true for digital voice assistants. As expected, results show that the higher the expected performance of the voice assistant and the higher the hedonic motivation of the consumer, the higher the intention to use a given assistant. However, the previous habit also substantially affect behavioral intentions. Four of the classical drivers (i.e., social influence, effort expectancy, facilitating conditions, and price value) show no significant impact on the intention to use a given assistant. Second, results also show a significant impact of all three predicted anthropomorphism drivers (i.e., perceived sociability, animacy and a perceived human-like fit) on the likeability of a voice assistant. This significantly influences the behavioral intention and, thus, confirms the importance of anthropomorphism for the acceptance of digital voice assistants.

The central contribution of the third essay is it shows that when studying voice assistant acceptance using a more holistic approach regarding technology acceptance, drivers for this kind of technology go beyond the classical drivers of the unified theory of acceptance and use of technology and, therefore, a "conservative" view of technology is not sufficient. For future research, this essay offers a broad range of implications. For instance, human characteristics might be interpreted and valued differently depending on cultural background (House, 2004). Hence, multicultural research should be sought to ensure comparability and obtain a more complete view on the impact of anthropomorphism elements based on different cultural backgrounds. Future research could further investigate additional factors that are not covered in the study, such as the

importance of being extensible by other devices in smart home technology. Besides, the essay also offers a broad range of implications for management, such as showing that it is not sufficient to only focus on the services of a voice assistant, but also to optimize the verbal interaction with the consumer. Implementing humor to conversations, which is a human trait, might enhance the overall experience with a voice assistant.

2.5 Essay 4 - Online Complaints in the Eye of the Beholder: Optimal Handling of Consumer Complaints on the Internet

The objective of the fourth essay is to investigate different complaint-handling strategies in a digital environment (e.g., addressing a consumer complaint on a rating platform) by focusing on the "silent observer," who seeks additional information regarding products or services.

Dissatisfied consumers represent a potential hazard to a company and its business operations (Cheng et al., 2006). However, literature shows that effective complaint management can, not only limit these potential threats (Homburg and Fürst, 2007) but also lead successful problem solutions to increase the complainant's satisfaction level with the company. This can even go beyond a level in which there is no service failure, thus, leading to the so-called service recovery paradox (McCollough et al., 2000). Strategies regarding complaint management, i.e., how a company should answer to a complaint, are well investigated in literature (Davidow, 2003) and research shows their importance considering the impact on consumer behavior (e.g., Collie et al., 2000; Conlon and Murray, 1996; Estelami, 2000; Sparks and McColl-Kennedy, 2001), although these strategies focus only on the actual complainant. The recent years of digitalization has had an impact on general modes of communication (Deighton and Kornfeld, 2009), so that these complaints are expressed and made public on the internet (Hennig-Thurau et al., 2010). Dissatisfied customers may post their complaint online to warn others against buying a particular product or service (Hennig-Thurau et al., 2004). This form of negative electronic word-of-mouth (NeWOM) can be accessed anywhere, at any time, via a broad internet audience (Cheung et al., 2008) and it is almost infinitely accessible (Duan et al., 2008). Above all, this audience includes prospective customers who search for information about a product or brand with the intention of assessing its quality and forming their attitudes and preferences prior to making a purchase decision (Hennig-Thurau and Walsh, 2004). Thus, this form of complaint is even more of a hazard for businesses because it affects potential costumers (Chevalier and Mayzlin, 2006).

If one takes the strategies to answer to these complaints as the status quo, it is unclear how prospective customers, who search for information on the web, are affected by the

public answers of a given company and, thus, lead to a research gap. Based on previous reasoning, an organizational response to a public complaint on the internet might go beyond the complaint handling and satisfaction recovery of the complainant, because it might entail additional effects on the attitudes, intentions, and behavior of prospective customers who simply observe the conversation between an organization and a customer in a complaint-handling setting.

To address this research gap, an explorative unifactorial between-subject experiment (N = 233) with nine treatments in total has been conducted. The participants of the study were asked to recall the last time they bought a product from an online store and to transfer themselves mentally to a depicted scenario. Here, respondents were told that they found the product was cheaper in an unknown online store; however, on a website on which other customers discuss this specific shop, they found a (negative) customer experience report, which was depicted in the questionnaire afterwards. This report was followed by a response of the online shop formulated in accordance with one of the eight types of organizational responses contained in the research framework (Davidow, 2003). In addition, a positive review was added as a control group. After being exposed to the scenario, respondents had to evaluate the online store based on the customer's review and the corresponding response by the company. To analyze and interpret the data of the experiment, analysis of (co-)variance (ANCOVA) and corresponding contrast tests were used.

The results of the experiment demonstrate that the answer of a company to a public complaint affects the prospective customer who seeks additional information prior to a purchase. Both attitudinal and behavioral intentions vary based on the response of the company. Here, the essay offers three central results regarding the use of the common strategies by taking the silent observer into account. First, offering an apology and redress is not only one of the most powerful strategies for the complainant (Davidow, 2003), it is also for the prospective customer. Here, the positive impact of the answer regarding consumer-related variables even surpasses the control group with the absence of a problem, so an effect similar to the service-recovery paradox occurs. Second, in contrast to how it affects the complainant, the strategy of a request for a private contact (i.e., by phone or mail), leads the observer of the complaint handling to an outcome, which is even worse than the passive handling of the given complaint, i.e., no answer at all (Homburg and Fürst, 2007). Even so, this strategy is characterized by a high level of attentiveness and, thus, is powerful to address the complainant, it does not offer additional information to the silent observer because of the absence of an answer (i.e., more than a request for contact). Hence, in this case, results show a gap between a favorable strategy in case of the complainant in comparison to the prospective customer. Third, if a redress is not possible and cannot be offered, the worst and best strategies do

not differ significantly in terms of their effect on behavior, so companies have a variety of answer strategies to select from. The central contribution of the third essay is that it shows that strategies regarding an answer to a complaint that are based on well-established research also affect public digital environments and prospective customers. Thus, the status quo should be further analyzed by considering the aspect of public complaints, which are accessible by almost everyone. This essay offers implications for companies on how to answer complaints by not only respecting the complainant but also by considering stimulating consumers who seek additional information prior to making a purchase decision.

2.6 Essay 5 - Differences and Similarities in Motivation for Offline and Online eSports Event Consumption

The fifth essay focuses on the dimensions of consumers' motivation to participate at an eSports event in an offline or digital online environment based on the motivation scale for sports consumption (MSSC) and, hereby, identify the central differences and similarities that might lead to the consumption of one these event forms.

Increasing digitalization in recent years has had a large impact on consumers' consumption phenomena, in, or arising from, digital environments. For instance, eSports are already a key phenomenon, which can be roughly defined as "a form of sports where the primary aspects of the sport are facilitated by electronic systems" (Hamari and Sjöblom, 2017). In particular, eSports have earned the role of one of the most important streaming topics with more than 385 million viewers worldwide (Freeman and Wohn, 2017; Hamari and Sjöblom, 2017). However, eSports offline events, often hosted in big arenas, allow thousands of eSports fans who are willing to leave the purely digital environment of streams to consume eSports content in a completely new setting (Hallmann and Giel, 2017). The content, i.e., following teams competing in a digital environment, is identical in both the stream and offline event. However, many of the surrounding factors vary (e.g., the perception of cheering spectators) and might change the overall experience (Zhang and Byon, 2017). Although research has focused on aspects of general eSports consumptions, it does not deal with different forms of eSports consumption.

In this context, digital consumption forms, such as streaming services, are popular for many sports forms. However, eSports roots in digital environments, whereas classical sports (e.g., soccer) originate from an analog world of consumption (Hamari and Sjöblom, 2017; Zhang and Byon, 2017). Hence, one might observe a shift in the case of eSports from pure digital consumption to analogous opportunities of consumption (e.g., event on-site). Literature has offered approaches to classify eSports in relation to other

digital phenomena, as well as traditional sports and related differences (Hallmann and Giel, 2017; Macey and Hamari, 2017). Research has also worked out motivation dimensions of general eSports consumption: For instance, Hamari and Sjöblom (2017) established a motivation scale that is especially tailored to eSports. Building on that idea, Pizzo et al. (2017)analyzed the differences between sports and eSports consumption for a specific sports form such as soccer.

However, while research indicates the differences between offline and online consumption for regular sports and the motivation to follow an event (e.g., Seo and Green, 2008; Zhang and Byon, 2017), surprisingly, a comparison of the two previously described forms of eSports consumption has not yet been made. In this context, the uses and gratification theory (Katz, Blumler, et al., 1973) proposes that consumers decide on the basis of interests (e.g., formats) and needs (e.g., information seeking) from which media form is consumed (Hamari et al., 2018). Consequently, the actual decision for a medium depends on user expectations and fulfilment, leading to a satisfaction of the needs by the media offer (Severin and Tankard, 2013). Hence, based on potential different needs (Katz, Blumler, et al., 1973), the question arises as to what motivates consumers to attend an event on-site or to follow the given stream online and choose a specific media form. This is of particular interest, because traditional sports have made the transition to being additionally consumable in digital environments (e.g., streams), whereas, in comparison, eSports originate from these digital environments and are now present in offline environments.

To address this research question, a study (N = 636) at an EU LCS Event in Berlin was conducted in early 2018. The event was one the biggest competitions for League of Legends, one of the most important eSports games (Cocke, 2018). Riot Games, the organizer of the event, offered exclusive live coverage of the event through lolsports, YouTube, and Twitch.tv and, thus, the online availability of this event via streams is an alternative to attending the event on-site. Therefore, the survey distinguished between recipients who visited the event on-site (n = 155) and consumers who followed the event via one of the streams (n = 482). Here, participants had to answer questions based on the MSSC for eSports (Hamari and Sjöblom, 2017). Participants gave insights into their attitudinal responses to the event and potential behavioral responses for upcoming events. To analyze and interpret the experiment data, students' t-tests were used.

The results showed a difference between motivation for sports consumption for those who visited the event on site and those who consumed the matches via a digital streaming service. Social elements seem to foster the decision to participate in an offline environment, e.g., to be part of a cheering crowd, the dimensions of learning new skills, gaining knowledge, and a higher level of achievement. However, elements that can be observed more in more detail on screens at home via stream led to an online

consumption decision. Surprisingly, both forms of event consumption had no impact on the attitude towards the event. However, the overall satisfaction was more pronounced in case of offline consumption. Finally, the results showed that, in both cases, further online consumption is very likely, although an intention for offline consumption was far more pronounced in the case of those who were already at the on-site event. The results showed that a specific motivation was underlying the current consumption decision form, which might also affect future consumption decisions in the case of eSports.

The central contribution of the fourth essay is to show that, while the actual content of an eSports event is similar in both cases of consumption (i.e., offline vs. online), the surroundings seem to determine which consumption form one might decide upon based on his motivation for sports consumption. Hence, further research should consider that motivation for eSports consumption does not only shape the general intention to watch a given match or event (Hamari and Sjöblom, 2017), but also the form that is chosen in which to consume. Therefore, research should distinguish between offline consumption and a participation in digital environments by respecting each influential factor that surrounds these environments and that might have an impact on consumer behavior. Practice should promote the elements that support the specific motivation of online and offline participants and, thus, optimize their consumption experiences in the chosen environment.

2.7 Essay 6 - The Need for a Community: The Impact of Social Features on Video Game Success

The sixth essay focusses on the impact of social features in comparison to more common core elements (e.g., price) of video games on their success based on market data from one of the most important gaming platforms.

Video games have become tremendously popular: the industry is one of the largest entertainment industries globally, with an increase from $101 billion in 2016 to an expected $129 billion in 2020 (McDonald, 2017). Two thirds of all US citizens play video games on a regular basis (Entertainment Software Association, 2016). Herrewijn and Poels (2015) regard digital gaming as one of the most popular forms of entertainment.

Despite their popularity, the success drivers of video games have not yet been sufficiently empirically investigated, although this an important issue for developers. The production costs of video games also increased tremendously due to new hardware technologies and state-of-the-art game mechanics, graphics, and sound effects. The production budget of “Grand Theft Auto V,” one of the most successful video games of

all time, was around $250 million (IMDB, 2016); thus, creating such high-quality games is linked to a considerable financial risk for developers. However, taking this risk can certainly pay off; video games that end up being successful can generate more than 300% of their original production costs (Clements and Ohashi, 2005). The previously mentioned video game "Grand Theft Auto V" generated about $800 million in revenue within the first 24 hours of its release (IGN, 2013).

There is high uncertainty among developers regarding which type of video game or core elements should be considered (e.g., in-app purchases); thus far, success drivers of video games have not been entirely empirically identified. Research has shown that the success of a given video game depends on a high number of users of a specific video game console (Gretz, 2010) and on the reputation of the developer and reviews from journalists (Cox, 2013). Here, Binken and Stremersch (2009) showed a direct positive effect of professional reviews on the expectation and sales of video games. The game genre, actual pricing, and promotion effect, similar to movies, render the actual success of a video game (Cox, 2013; Hennig-Thurau et al., 2012; Marchand, 2016). However, surprisingly, the role of newer social features (e.g., multiplayer and social [surrounding] interactions with other users while playing the video game or in forums on given platforms such as Steam) have been ignored as potential success drivers, or have been only partially investigated for the success of other game features, e.g., multiplayer for in-game sales (Marchand, 2016). However, it is not only the core features that might impact the expectation and satisfaction towards a video game but also the community's respective social features that have formed around a video game. The perceived utility of those social features goes beyond the traditional gaming experience as it enhances interpersonal relationships, which satisfy a fundamental need for relatedness through interpersonal social interactions within the virtual world (Downie et al., 2008; Ledbetter and Kuznekoff, 2011). These assumptions are in line with network effect theories (e.g., Beck, 2006), which propose that the value of membership for consumers in a network is positively influenced when new consumers join and expand it (Katz and Shapiro, 1994). Consequently, the benefits of consuming such a video game depend on the total number of consumers who purchase it (Church et al., 2008). Thus, video games might no longer be just a product that consumers buy for a fixed price and enjoy playing on their own. Social interaction, such as knowledge-sharing and lively discussions are essential factors of any online community and the video game community thrives on the same principles (Butler, 2001; Wasko and Faraj, 2005). Transferring the basic assumption of Oliver's (1977) expectation–confirmation theory to this setting, the research question arises regarding how social features affect the success of a given video game and how these features affect the average playtime, which could positively affect revenue over time (e.g., due to in-game purchases) (Marchand, 2016).

In terms of a response to the research question, market data seems the most feasible method. although publishers and developers do not make sales records of video games publicly accessible. For this reason, most recent studies (Cox, 2013; Marchand, 2016) that have examined success drivers of video games have collected data from third-party websites such as vgchartz.com. Unfortunately, it is not possible to check the validity of such data. Thus, to address this research question, the analysis of market data based on 401 video games from the Steam platform has been conducted. Steam offers popular video games as well as features for communication and social interactions among its users. Therefore, data (e.g., number of positive votes, price or social features) from the popular platform Steam directly via steamdb was used (Steam, 2018). If social drivers (e.g., a multiplayer feature) affects the expectations of users and fulfils them, they should influence the satisfaction with a given videogame, which, in turn, should be verifiable by the predicted relationships in the essay through the market analysis of the number of owners and the average playtime as the dependent variables. To analyze and interpret the market data, structural equation modelling based on the partial least squares approach was used. Results of the analyses confirm the predicted impact of social features on video games success. Both for the number of owners of a video game and its average play time, the multiplayer feature had a positive impact. Positive votes (i.e., reviews) of other gamers on that platform affected the actual number of owners of a given videogame positively, whereas the average playtime was positively influenced by lively discussion threads. The results also indicate the impact of the more common core elements such as genre, developer reputation and additional (in-game) content from the developer on both success variables. Furthermore, results remain stable when controlling the price and days since release.

The central contribution of this last essay is that it sheds light on the success drivers of video games by taking into consideration the market data from a given platform. For research, results of this essay suggest that video games are more than just a product bought by a user at a fixed price that they enjoy playing alone. Instead, they become more a social experience in which people from all over the world play together, communicate, and share knowledge. Thus, future research should investigate video game research-related content through the lens of social interactions. For practice, it is important to acknowledge that even video games with a specific single player experience might also benefit from social features, because both discussion threads (e.g., for additional free content) and positive votes of other gamers positively affect the success of such a game. Thus, with this in mind, even developers of single-player games should be keen on stimulating their user base on participation in social surroundings, positively affecting their published games.

2.8 Overview of Essays and Related Research Characteristics

Table 2.8-1 provides an overview of the six essays and the corresponding research characteristics. For each essay, the research objective is summarized and information about the research design is provided. The sample size for each study as well as various methodologies used is illustrated. In summary, more than 2,400 respondents were acquired to participate in online surveys or experimental studies and more than 400 video games were investigated in the last essay to test causal relationships proposed in the underlying conceptual frameworks, to expand the knowledge for research and propose meaningful implications for practice in digital environments.

Table 2.8-1. Summary of Essays and Research Characteristics

	Objective	**Design**	**Sample Size**	**Methodology**
Essay 1	Investigating the impact of psychological distances on congruency processing and evaluation	Study 1–3: Online Experiments	Study 1: N = 228 Study 2: N = 214 Study 3: N = 221	(M)ANOVA, Planned Contrast Tests
Essay 2	Investigating the congruency of mental construal and visual stimulus on behavior	Study 1–2: Online Experiments	Study 1: N = 256 Study 2: N = 365	AN(C)OVA, Planned Contrast Tests
Essay 3	Investigate the impact of human-like characteristics of smart assistants on technology acceptance	Online Survey	N = 283	PLS-SEM
Essay 4	Investigate the impact of complaint handling strategies on prospective customers in an online environment	Online Experiment	N = 233	(M)AN(C)OVA Planned Contrast Tests
Essay 5	Identify differences and similarities in motivation for eSports consumption in offline vs. digital environments	Field Study and Online Survey	N = 636 offline n = 155 online n = 481	t-tests
Essay 6	Investigate the impact of social elements on video game success	Market Data	N = 401 (video games)	PLS-SEM

3 Essays

3.1 Does Mental Construal Influence the Perception of Incongruent Advertisement? The Role of Psychological Distance in Ad Processing

3.1.1 Introduction

Digitalization has had a large impact on consumers' consumption of digital services, the use of digital ecosystems in general and numerous phenomena within these environments. For instance, "eSports" (electronic sports) is an important phenomenon within the rise of streaming services. With more than 385 million viewers worldwide, eSports is one of the most important streaming service topics (Freeman and Wohn, 2017; Hamari and Sjöblom, 2017). A second phenomenon is mobile games. Herrewijn and Poels (2015) regard digital gaming as one of the most popular forms of entertainment. This industry has become one of the largest entertainment industries globally, with an increase from $101 billion in 2016 to an expected $129 billion in 2020 (McDonald, 2017). However, while both environments are attractive advertising surroundings, both have a potential common hazard: they are often context-incongruent to a broad range of brands.

Thematic congruence is often regarded as one of the most important criteria for media selection and related advertising success (Dahlen et al., 2008; Shamdasani et al., 2001). The results of previous studies indicate that incongruent ads or sponsorship efforts may generate feelings of frustration and ultimately lead consumers to ignore the sponsor's message or advertisement (Halkias and Kokkinaki, 2014; Meyers-Levy and Tybout, 1989). Research, thus, has well documented the positive effects of ad-context congruency regarding the role of congruency for advertising success in different media environments (e.g., traditional media, web or videogames). Thematic congruency generates positive attitudes towards the advertised brand (Choi and Rifon, 2002), positive effects on ad perception (Cho, 2003), positive reactions to the ad (Moore et al., 2005) and stronger purchase intentions (Jeong and King, 2010). For instance, Chang et al. (2010) propose that for in-game advertising, it is important that congruency and integration between the context of the game and the advertisement are given to generate positive outcomes. Summing up, congruity between ads and content seems to foster positive advertising outcomes (Bishop et al., 2015; Halkias and Kokkinaki, 2013), while incongruency might have a negative impact on attitudes towards the ad (Lee and Mason, 1999) and on product evaluations (Meyers-Levy and Tybout, 1989; Segev et al., 2014).

F. Nimmermann, *Congruency, Expectations and Consumer Behavior in Digital Environments*, Handel und Internationales Marketing Retailing and International Marketing, https://doi.org/10.1007/978-3-658-28421-3_3

Hence, the research question arises, what opportunities do brands have to enhance advertising perception and to support consumers in resolving incongruity? According to schema theory, information that consumers received and which do not match pre-existing knowledge and thus, cannot be processed in relation to preexisting knowledge, lead to a perception of incongruency (Mandler, 1982). However, research shows that cognitive flexibility helps to find possible connections within the given knowledge (Jhang et al., 2012) and thus, can enhance the resolution of incongruence, for instance, in the case of brand extensions (Kim and John, 2008; Meyers-Levy and Tybout, 1989). Here, construal level theory (CLT) postulates that psychological distance influences consumers' mental degree of abstraction (i.e., their construal level); thus, the greater the psychological distance (e.g., time distance between own reference point and distant event) , the higher the construal level is and their level of abstraction (Trope et al., 2007). Hence, we argue that brands in incongruent advertising environments could use the findings regarding the effects of psychological distances to enhance the perception of their advertisement.

Surprisingly, the impact of psychological distance as an anchor (e.g., in time) for advertisements has not been analyzed yet. Transferring the basic assumptions of schema (incongruity) theory (Mandler, 1982) to the context of our study, we assume that incongruent advertisements, anchored to a high level of psychological distance, should be processed by consumers with a higher level of abstraction, thus, with more ease and a higher level of perceived congruency, which in turn should positively influence consumer behavior.

With this study, we contribute in numerous ways to knowledge in the field of advertising and consumer behavior, especially in the context of advertising in streaming services and mobile gaming apps: Based on the assumptions and implications of the CLT we investigate the impact of psychological distance on advertising processing and consumer-related outcome variables. We systematically manipulate context congruency (congruent, moderately congruent and incongruent) and the psychological distance (distant vs. near time and space anchors) in three experimental studies. We focus our discussion on a specific type of advertising environment, and we regard streaming services and mobile games as very important examples for digital advertising ecosystems because of the significant investments of businesses in this part of the advertising industry (Foye, 2018). We thereby expand the findings of previous studies in the field of advertising research by showing (1) how the level of mental abstraction influences the perceived congruency of brands and their advertising within a given digital context, (2) how the level of mental abstraction influences the overall advertisement evaluation, and (3) by investigating the impact of psychological distance on these relationships. Hereby, we derive implications for formulating strategies for

brand placement in digital environments via sponsorship or advertisement in incongruent settings.

3.1.2 Literature Review and Hypotheses Development

Conceptual Model

Our conceptual model (see Figure 3.1-1) builds on congruence theory, schema theory and construal level theory. In general, we believe that the level of context congruity has an impact on brand and advertising perception and on consumer behavior outcomes such as interest in more information. However, we suppose that psychological distance moderates the overall evaluation of contextual advertising and brand congruence as well as the relationships between the level of congruence and the outcome variables under review.

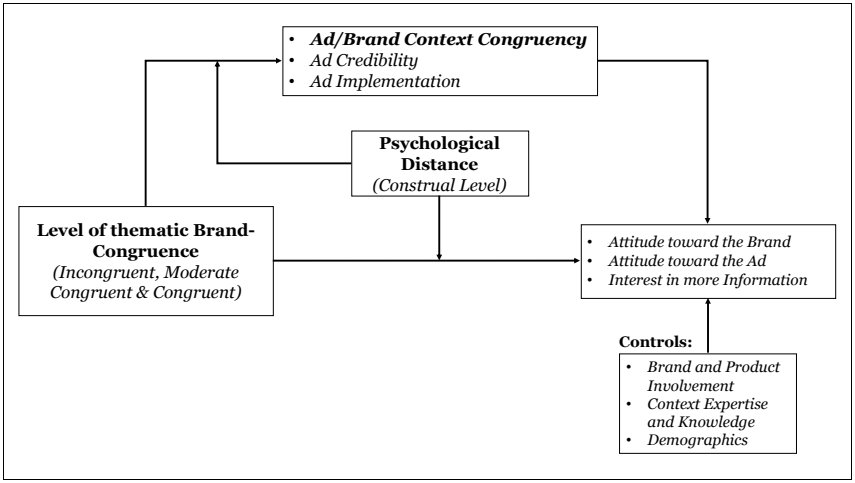

Figure 3.1-1. Conceptual Model

Effects of Congruency

Thematic congruence between an advertised brand and the overall context is often interpreted as one of the most important criteria for media selection (e.g., King et al., 2004; Moorman et al., 2002). Congruence refers to a matching of or a similarity between objects, i.e., objects are consistent with each other or at least have a structural correspondence (e.g., Maille and Fleck, 2011; Voorveld and Valkenburg, 2014). In the related research, the concept of fit is often used as synonym for congruence (Speed and

Thompson, 2000). Following congruence (congruity) theory (Osgood and Tannenbaum, 1955), individuals value the harmony of the given combination in general or of specific elements of combined objects (e.g., context and ad).

Thus, context congruence is important when analyzing media context (Maille and Fleck, 2011). For instance, congruence between banner-ads and the content of a website lead to more positive attitudes towards the ad, the website and actual consumer behavior, such as the intention to click on the ad or to purchase the advertised brands (e.g., Moore et al., 2005). Very similar results were observed with regard to thematic congruence between ads and magazine topics (e.g., Moorman et al., 2002). For example, a match between the ad and the context of the magazine, e.g., a car ad in a car magazine, leads to a higher level of advertising effectiveness and positively affects brand attitudes and associations. However, few research in this context also found opposing effects and thus, positive effects of incongruency on central outcome variables which might be explained by the level of incongruency (e.g., Dahlen et al., 2008). Nonetheless, the majority stresses that ads that are perceived as contextual have been shown to exert greater immediate effects on consumers' responses to the advertised brand or product than non-contextual ads (Guitart and Hervet, 2017). Moreover, for the case of video embedded ads, incongruent ad context improves ad memorability (Furnham et al., 2002). Perceived congruence, however, exerts positive effects when ads are directly embedded in the actual content, such as mid-roll video advertisements with a more concrete connection to the content (Li et al., 2014). For in-game advertising, Chang et al. (2010) show that it is important that the genre, which shapes the context of the game, matches the included advertisements in order to produce a positive behavioral response. Thus, while memory effects may be enhanced by placing brands in incongruous game settings, this may negatively influence brand attitudes (Lee and Faber, 2007). Generally, the sponsorship literature shows that higher levels of perceived congruence between a sponsor and the sponsored event evoke a positive image transfer, i.e., transferring positive attributes from the event to the brand perception (e.g., Mazodier and Merunka, 2011; Zdravkovic and Till, 2015). These results of previous research imply that if brands do not have natural links to the sponsored objects, marketers have to strengthen these links, e.g., by explaining the relationships or even by creating them artificially (Cornwell et al., 2006). Contextual advertising thus seems to be more effective than incongruent advertising. In contrast, a high level of incongruence and the need for strong cognitive adjustments lead to frustration of consumers and negative evaluations (d Astous and Bitz, 1995). In sum, congruence might be one of the most powerful predictors of persuasion (Mazodier and Quester, 2014) and even so positive effects of incongruency on e.g., memory have been found (e.g., Dahlen et al., 2008; Moorman et al., 2002), traditional views of persuasive congruent communication should not be entirely replaced by incongruent advertising (Halkias and Kokkinaki, 2014).

The effects discussed above are likely to be impacted by a number of consumer characteristics, such as the relevance of ads and products, i.e., involvement, expertise and general relevance (e.g., Bishop et al., 2015; Lee and Faber, 2007; Verberckmoes et al., 2016). For instance, highly involved consumers may be more motivated to process incongruence because they are highly engaged in elaborate product evaluation (Petty and Cacioppo, 1986). In this context, De Pelsmacker, Geuens, and Anckaert (2002) show that context–advertising incongruence (e.g., in television or magazines) has a positive influence on advertising effectiveness for respondents with high involvement. Hence, highly involved consumers should be more likely to resolve brand–advertising incongruence (Mazodier and Merunka, 2011).

In addition to these aspects mainly rooted in congruity theory, schemata congruence literature provides further explanations with regard to variables that might mediate or moderate the relationship between congruence or incongruence and related advertising effects (Mazodier and Quester, 2014). Researchers have observed strong relationships between congruence and schemata (e.g., Halkias and Kokkinaki, 2014; Torn, 2012; Verberckmoes et al., 2016). Literature stresses the importance of schemata because of their impact on the evaluation of congruence due to consumer expectations (Mandler, 1982; Stayman et al., 1992). Following schema theory, it is schemata that allow consumers to efficiently encode, store, and decode the information they encounter and the processing of incoming information follows certain patterns (Anderson, 1976). When consumers face new experiences, present schemas are triggered and new information is stored in relation to the existing patterns (Beals, 1998). Mandler (1982) argues that if the received information fits into consumers' existing knowledge structures, this information is 'schema congruent' (e.g., a jeans manufacturer ad within a fashion website). However, if the information cannot be completely resolved by available patterns, the information is 'schema-incongruent' (e.g., the same jeans ad within a racing game). Thus, during the resolving process, which occurs when information does not fit into prior existing schemas, consumers must use greater effort to decode incoming information (Houston et al., 1987; Jeong and King, 2010). In contrast, when information is congruent with expectations, consumers can engage in simpler and easier processing (Sujan et al., 1986). Thus, research has exposed additional consumer characteristics that play a role in the overall advertising processing regarding congruence, but it has surprisingly neglected factors that influence the role of overall schemata that help consumers resolve negative effects of incongruence. For instance, studies in the context of product evaluation show that increasing analogical reasoning relates positively to product and brand congruence (e.g., emphasise benefits of the unusual composition) (Jhang et al., 2012). Furthermore, by triggering congruence, such

as by articulation (e.g., "proud sponsor since" or general explanations), consumers' evaluation of the alignability of two objects (e.g., event and sponsor) can be enhanced (e.g., Olson and Thjømøe, 2011). Thus, if ads are atypical in regard to existing schemata and thus mismatch consumers' expectations (e.g., Stayman et al., 1992), they should be met by broader categories within consumers' schemata to support finding a match at all. Therefore, mental abstraction, which can be explained using psychological distances based on construal level theory, would be beneficial.

Construal Level

In a low-level construal, consumers process information on a more concrete level and are focusing their environment in great detail (e.g., a tree with all its branches and leaves). In a high construal, consumers are looking at the "bigger picture" rather than focusing on details (e.g., seeing the whole forest and not each tree for itself). The construal level is directly connected to psychological distance, with high distance evoking high levels of mental abstraction and vice versa (Trope and Liberman, 2010). Psychological distance is egocentric: "Its reference point is the self, here and now, and the different ways in which an object might be removed from that point — in time, space, social distance, and hypothetically" (Trope and Liberman, 2010, p. 440). Accordingly, with greater temporal or geographical distance, a stimulus cannot be directly experienced and is thus psychologically distant (Trope et al., 2007). Thus, greater temporal or geographical distance results in a higher construal level for the consumer, while a lower temporal or geographical distance leads to a lower construal level (Trope and Liberman, 2010). However, each dimension of psychological distance leads to an equal increase or decrease in total psychological distance (e.g., time distances do not mandatory lead to a higher psychological distance than hypothetical distances) (Trope and Liberman, 2012). In this context, Kim and John (2008) have shown that mental construal might play an important role when consumers form their perceptions of fit-importance between the brand and the extensions. However, here mental construal has only been studied as an a priori factor influencing consumers, while any impact on schemata regarding the processing of a perceived congruence has been neglected.

Hypotheses

In general, we propose that, following construal level theory, when advertisers use different anchors (temporal and/or spatial) before placing an advertisement, different levels of psychological distance are likely to be triggered. For example, if advertisers use an announcement that refers to time-related and/or geographic distance before they place an ad (e.g., introducing a distant upcoming event), this should evoke a high construal level, while a near anchoring should lead to a low construal level. In addition, the positive effects of ad-context and thematic congruency and their positive impact on consumer attitudes and behavior towards the ad and advertised brands have to be taken

into account in the context of our study. Based on previous reasoning, we conclude that incongruent information creates a challenging task for consumers, representing a puzzle that consumers need to solve. A more thorough processing leads to enhanced confidence in "resolution judgments", which is understood by consumers as a greater liking of the ad and the brand and advertising credibility (Lee 2000, p. 55). On the basis of our literature review, we conclude that thematically congruent brands (e.g., a watch manufacturer ad in a watch magazine) provide attributes that are directly related to pre-existing category knowledge. Consumers are able to immediately understand an ad via existing associations with regard to the related context in which the ad is included. On the other hand, incongruity requires forming new associations within these categories (Jhang et al., 2012). While these aspects are more or less common knowledge, in our analyses, we focus on the relevance of construal level for these relationships.

The construal level affects the categorizing abilities of consumers. A high construal level evokes broader but fewer categories, whereas a lower mental abstraction level leads to narrower but more numerous categories (Liberman et al., 2002). More precisely, consumers in a high construal level create more abstract and noticeably broader groups to categorize a given input. Transferring this general idea to schemata, we argue that a high construal level supports consumers in finding easier and even more numerous connections within these categories because they consider the "bigger picture" (Trope and Liberman, 2012). Consequently, a more distant anchor might lead one to categorize the advertising information into fewer, broader categories. Furthermore, research has shown that when consumers include a temporal orientation, i.e., future thinking, this is likely to impact their creativity in imagination (Chiu, 2012). Hence, in the case of a higher level of psychological distance, the context becomes more abstract, and it is therefore easier for consumers to categorize the thematically incongruent advertised brand and/or the ad into more diffuse contexts.

Consumers in higher construal levels make decisions on the basis of abstract information, while consumers in lower construal levels promote concrete information (Braga et al., 2015). Moreover, consumers connect non-alignable information to a more abstract mindset (Malkoc et al., 2010). Therefore, higher-order information is preferred in the case of high-level construals, whereas concrete attributes are more effectively processed in the case of low-level construals (Hernandez et al., 2015). Following this reasoning, we suppose that more-concrete information should be more positively recognized in the context of thematically congruent brands and with a concrete level of mental abstraction due to the direct effects of congruence on the overall perception of brand and advertisement, whereas a more abstract construal level supports the resolution

of incongruence helps the individual recognize more positively abstract information. Finally, based on previous reasoning, we argue that a more successful processing of ad incongruity has positive effects on consumer perceptions, attitudes and behavior. We therefore expect a connection between the context in which advertisements are placed and ad effectiveness. However, we suppose that different construal levels impact the role of consumers' congruence perception, i.e., congruity between the ad and the advertising context, in building positive consumer attitudes towards the brand and its advertising and in forming consumer behavior. Based on this theoretical reasoning, we strive in our analyses to answer the following two general hypotheses:

H1*: The psychological distances moderates the perceived contextual brand and advertising congruence such that (a) a thematically incongruent brand and advertising is enhanced in case of high psychological distance (i.e., high construal level) and (b) a thematically congruent brand and advertising perception is enhanced in case of low psychological distance (i.e., low construal level).*

H2*: The psychological distance positively moderates the effect of congruency on the attitude toward the brand and consumer behavior such that (a) the effect is enhanced by a high psychological distance in the case of a thematically incongruent brand and (b) the effect is enhanced by a low psychological distance in the case of a thematically congruent brand.*

3.1.3 Experiments

To verify the proposed hypotheses, we conducted two consecutive experiments that built on one another: The intent of the first study was to gain first insights into whether the impact of an individual's construal level on advertising perception holds true in a 'mature', but digital advertising environment. We therefore used a soccer stream as a contextual background for study 1. The second study was set in an eSports context and was conducted to gain insights into whether the degree of mental abstraction generated by an artificially implemented psychological distance impacts congruence perceptions and helps resolve incongruence, which in turn should affect consumer behavior relevant outcomes. Study 3, set in the context of mobile racing games, gives further insights into the effects of mental construal on the perception and evaluation of the advertisement. The intent behind the changes in setting (soccer stream vs. eSports streams vs. mobile games) was to analyze whether the results remain stable in different advertising environments, especially in digital media.

3.1.3.1 Study 1

Method and procedure

This first study was set in the context of German soccer, a mature advertising environment where a high level of incongruence between advertised brands and the advertising environment is the status quo. Study 1 was intended to test the effects in this established environment, because we suppose that if the effects that are observed in an environment in which such incongruence occurs on regular basis, the hypothesized relations should be supported generally. Hence, to test whether mental construal impacts consumers' fit perception, we conducted an online experiment by means of a 3x2 between-subjects design with the factors 'thematic brand congruence' (incongruent vs. moderately congruent vs. congruent) and 'construal level' (low vs. high). We used a manipulated video of a real soccer broadcast of the German Football League in all conditions. The subjects had to put themselves into the situation of watching this scene on television. The video started by showing players in a regular match. After nine seconds, one team passed the ball back to their goal keeper. During this pass, the video changed to a picture-in-picture view, showing the actual footage of the game being played in just in the upper right corner (approximately 20% of the overall frame size) and a neutral picture of a soccer field as the background. The rest of the screen was used to present the stimuli. The first factor, the brand congruence level, was manipulated by showing a different type of brand in each condition (incongruent vs. moderately congruent vs. congruent) with its specific ad, accompanied by the message that the brand supports the current game. We included three brands in our study to comply with the research recommendation to respect a congruity–incongruity continuum and to go beyond a dichotomous operationalization of incongruity, i.e., congruent versus incongruent (Halkias and Kokkinaki, 2014; Kim and John, 2008; Torn, 2012). Based on a pretest (N = 46, M_{age}=25.67, SD=8.04, 43.5% women) among participants similar to those in the main study, we chose Nike as a congruent brand because of its strong connection to soccer and sports in general. Coca-Cola was chosen as a moderately congruent brand because of its ubiquity in sports advertising and its role as a well-known brand in a broad range of advertising contexts. As an incongruent brand, we included Bosch (i.e., a power tool and household appliance manufacturer), which has no clear direct connection to soccer. The design, i.e., background and colors of the ads, were similar for all treatments. Only the company logo, the advertised product, and the claim in the ad were varied. During the advertisement, the kickoff of the keeper went straight offside to ensure that no "exciting" scene distracted the study participants from the actual advertising. After that, the video changed back to a full-size view of the actual game and faded out after five additional seconds. We opted for this realistic overlay-based advertisement style because of its wide usage in real sports broadcasts (e.g., Formula One). Moreover, using a real video helps the participants to put themselves into a real consumption situation of watching a sports broadcast. Following Slepian et al.

(2015), the second factor, construal level, was measured using a shortened form of the multi-item Behavior Identification Form (BIF) based on the work by Vallacher and Wegner (1987). Respondents were asked to report their construal levels using the BIF. Participants had to describe an activity (e.g., "locking a door") by choosing an option that represented the action abstractly ("securing the house") or concretely ("putting a key in a lock"). A low sum represented a concrete level of abstraction, while high values represented a more abstract construal level. This scale has been shown to be a valid and reliable measure of construal levels (Hernandez et al., 2015). Following Kim and Roedder John (2008), to identify two levels of mental construal, a median split was used. Hence, individuals scoring 4 or above (sum of all answers) were classified as "high" construal; individuals with scores of 3 or below were classified as "low" construal (7 items, 0 = concrete description – 1 = abstract description). Both groups were nearly equal in distribution (58% low construal levels).

The participants in the study were recruited through social media websites, sports-related forums and university newsletters. N = 228 undergraduate respondents and random family members and friends participated in study 1 (n > 30 in each condition; M_{age} = 31.83 SD = 12.83, 136 women). The participants were randomly assigned to one of the three congruence conditions of the online experiment. After they read the introductory page, the respondents initially answered a question on their brand knowledge to ensure an existing fit perception regarding the brands used in the soccer broadcast ("Which of the following brand(s) are you generally familiar with?"). Before the actual experiment, the attitude towards advertising in general was measured by applying a seven-point scale based on Pollay and Mittal (1993) (3 items, e.g., "Generally, I like advertising." 1 = I totally disagree – 7 = I totally agree, Cronbach's α = .874). Thereafter, the respondents received the following introduction to the experiment: "*On the following page, you will see a segment of a soccer game. We kindly ask you to watch the video very attentively until the end. Before you start the video, please imagine that you have followed the match from the start and that the following scene now appears.*" The "next page" button appeared after the video had finished. The participants were able to watch the video as long and as often as they liked, i.e., without any time restrictions. This procedure was chosen to minimize a distortion of the results due to a systematic bias in the experimental design (Bailar et al., 1977). After the video prime, we measured the individuals' construal level using the shortened BIF scale (Vallacher and Wegner, 1987). Moreover, the perceived fit of the brand advertisement within the present context was measured using semantic differentials, as introduced by Becker-Olsen (2003), on a seven-point scale (6 items, e.g., 1 = does not make sense – 7 = makes sense, α = .93). Moreover, age, sex and education level were collected as controls. For a detailed overview in regard to the measures used in this essay, see appendix Table 3.1-7

Results and Discussion

First, the results show that our manipulation of congruence between ad and advertising context was successful ($F(2,222) = 165.80$, $p < .001$). Nike shows the highest level of congruence, while Bosch is perceived as an incongruent advertising brand in the case of soccer games. Moreover, Coca-Cola obtains the intended medium level of congruence evaluation. We were unable to observe a significant main effect of the construal level ($F(1,222) = .009$, $p = .924$), which stresses the importance of the finding "right" match between construal and congruence level. As expected, we can show that while the expected manipulation is generally confirmed, the perceived fit varies in the three congruence conditions with differences in the individual's construal level ($F(2,222) = 4.132$, $p = .017$). Table 3.1-1 depicts these results. Regarding the attitude towards advertising in general, we do not observe any effect ($F(2,222) = 1.315$, $p = .271$), which supports that this attitude does not affect the present results. Moreover, there is no significant impact of our control variables age, sex, and education level on the variables under review in this study.

Table 3.1-1. ANOVA Results (DV = Congruence)

Brand fit post-experiment						
Factors	Congruency (CG)			*F*		
Construal Level (CL)	High	Moderate	Low	*CG*	*CL*	*CG* × *CL*
Low construal level	6.31 (.83)	3.59 (1.47)	2.16 (1.06)	165.80 ***	.009 n.s.	4.132 ** η^2=.036
High construal level	5.90 (1.08)	3.26 (1.52)	2.84 (1.53)			

Post-perceived brand fit towards context, 1 = low perceived congruence, 7 = high perceived congruence (.05 < p < 0.1; **p < .05; ***p < .001; n. s. = not significant); Mean (SD in brackets)*

To determine which state of mental construal produces significant differences within the three levels of congruency, we used multiple t-tests where we successively selected each level of congruency and compared the two construal levels. In case of the congruent brand, we find a significant difference regarding the difference in fit evaluation between a low and high construal level at a $p < .10$ level ($t_{congruent}(80)=1.819$, $p = .074$). However, a closer look at the mean values reveals a significant difference in the case of low congruence ($t_{incongruent}(67)=2.188$, $p = .042$). We do not observe any significant difference in case of moderate incongruence ($t_{medium\_congruent}(77)=.939$, $p = .351$).

The results generally support our assumption, that mental construal impacts the perception of congruency between the ad and the context. Here, due to a match between

incoming information and mental construal (Braga et al., 2015), it seems that in the case of a more concrete mindset, i.e., a low construal level, a brand with a high level of congruence is more positively processed, whereas more-abstract, incongruent information seems indeed to be preferred in the case of high construals. Consumers' categorization flexibility, which is evoked via high construal (Liberman et al., 2002), seems to support the positive impact on fit evaluation in case of incongruence. Nonetheless, in the case of medium congruence, we do not observe any significant effect. However, it seems that medium congruence is more suitable in the case of a low construal level because of the more obvious links, in contrast to full incongruence (see Figure 3.1-2). Nonetheless, in study 1, the construal level is interpreted as a predisposition of consumers.

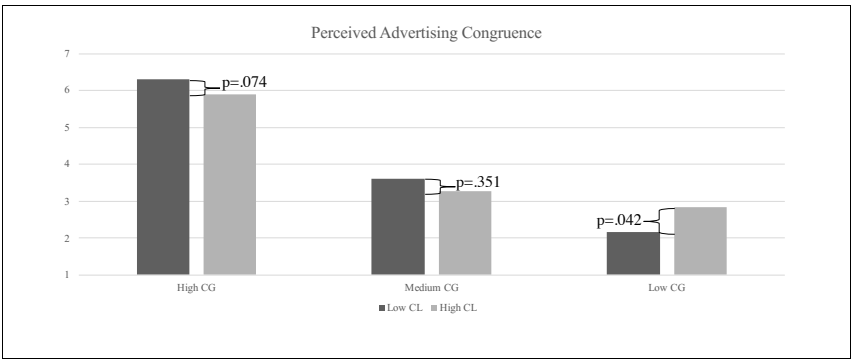

Figure 3.1-2. Inner-condition Differences of Advertising Congruence Perception, CG = congruence, CL = construal level

3.1.3.2 Study 2

Method and procedure

To deepen insights on whether different psychological distance anchoring lead to different mental abstraction levels, in another advertising environment, we performed our second online experiment among German consumers within the context of streaming services, more specifically, in an eSports streaming environment. We used a 3x2 between-subjects design with the factors 'thematic brand congruency' (incongruent vs. moderately congruent vs. congruent) and 'psychological distance' (low vs. high). In all conditions, we used a manipulated video of a real eSports broadcast from ESL ONE Cologne (see Figure 3.1-3). Respondents were asked to put themselves into the situation of watching this scene in a real broadcast within a streaming service.

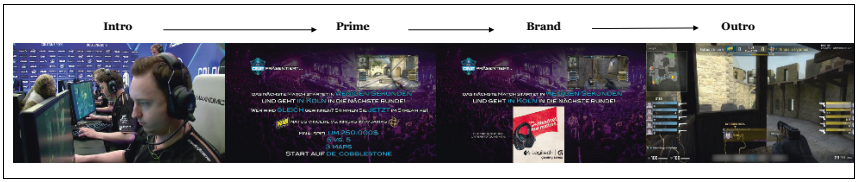

Figure 3.1-3. Schematic flow of the video prime in study 2

The video started by showing players in close-up and then switched to in-game footage showing the athletes' warm-up exercises. During this transition, the video changed to a picture-in-picture view, showing the actual footage of the game being played in the upper right corner (approximately 20% of the overall frame size), with the rest of the screen used to present the stimuli: information about the current or an upcoming event varying within the treatments in accordance with the research design. We manipulated the first factor, psychological distance, by means of temporal and spatial distance anchors. In the low psychological distance condition, the prime contained information about a "local event" (low spatial distance) and that the next match begins in "a few seconds" (low temporal distance). Based on the research of Hernandez, Wright, and Rodrigues (2015), the screen also contained concrete information (attributes) about the next match (map, price, number of players and overall maps). This information was used to evoke a more concrete mental construal of information processing and to give a clearer picture about the event. In the high psychological distance condition, the prime contained information about a yet unspecified event that would occur "in South America" (high spatial distance) and would start "within the given year" (high temporal distance). Afterwards, the participants were asked whether they would like to take part in the upcoming event, "when professional teams will compete against each other for a large prize pool". Beyond that, no concrete information was given. Then, the information faded out, and a brand-related ad was shown for six seconds in the former information area to ensure that the respondents had enough time for a detailed ad perception. The second factor, the congruence level, was manipulated by showing a different type of brand in each condition (incongruent vs. moderately congruent vs. congruent) with its specific ad. Based on a pretest (N = 62, M_{age}=26.90, SD=7.09, 33 women) with participants similar to those in the main study, we chose Logitech as the congruent brand because of their eSports-related hardware. As in study 1, Coca-Cola was again chosen as the moderately congruent brand because of their advertisement ubiquity. Even though Coca-Cola has no direct link with eSports, it is a well-known brand in a broad range of advertising contexts. As the incongruent brand, we choose Levi's, which has been completely absent from eSports advertising. The design, i.e., the

background and colors of the ads, were similar for all treatments. Only the company logo, the advertised product, and the claim in the ad were varied. After that, the video changed back to a full-sized view of the in-game footage and faded out after five additional seconds.

Participants for this study were recruited via social media websites, eSports-related forums and university newsletters. N = 214 undergraduates participated in the first study (n > 32 in each condition, M_{age} = 25.59, SD = 4.97, 46,7% females). The participants were randomly assigned to one of the six experimental conditions. After the introductory page, the respondents initially indicated brand knowledge via one question. As a manipulation check, we evaluated their congruence perception regarding the brands used in the video and the eSports environment. Attitude toward the brand was measured via a scale based on Stuart et al. (1987) (5 items; e.g., 1 = not appealing – 7 = appealing, Cronbach's α = .80). Perceived brand and advertising congruence with the present context (i.e., the eSports stream) were measured using semantic differentials as introduced by Becker-Olsen (2003) on a seven-point scale (6 items, e.g., 1 = does not make sense – 7 = makes sense, brand-congruence α = .95, advertisement-congruence α = .96). Moreover, respondents were asked whether, prior to this study, they had seen an eSports broadcast. In addition, respondents' involvement and expertise regarding eSports was documented. Expertise in eSports was measured using a seven-point scale based on Griffith et al. (2004) (3 items; e.g., "I know very much about eSports" 1 = I totally disagree – 7 = I totally agree, α = .92). After they answered questions regarding the constructs mentioned above for all brands, the respondents were introduced to the experiment: "*On the following page, you will see a segment of an eSports stream. We kindly ask you to watch the video very attentively until the end. Before you start the video, please imagine that you have followed the match from the start and that the following scene now appears.*" The "next page" button appeared after the video had finished. The participants were able to watch the video as long and as often as they liked without any time restrictions. The intent was for the participants to have a satisfactory impression of the stream footage. Moreover, this procedure was chosen to minimize distortion of the results due to a systematic bias in the experimental design (Bailar et al., 1977). As a manipulation check for the construal level, the subjects were asked to report their construal levels, again via the shortened multi-item BIF. Afterwards, the respondents had to answer questions regarding the main constructs in order to measure the relative change in congruence perception and attitude. Lastly, the respondents had to recall the brand they had seen and what kind of information was given within the video (next match vs. match in one year). Age, sex and education level were documented as control variables.

To test whether the manipulation of the construal level by the given information of the current event (low temporal and spatial distance) vs. the event next year (high temporal and spatial distance) was successful, we compared respondents' answers on the BIF scale in the two corresponding conditions. The results showed that the manipulation of the construal level was successful: Respondents who saw the information about the current event reported a BIF score of M_{low} = 2.95, SD = 2.03. Respondents who were shown the distant event reported a significant higher construal level (M_{high} = 3.58, SD = 2.11, F(1,212) = 4.872, p = .028). Following Baron and Kenny (1986), the BIF score (effect of the psychological distance) has to be independent from the congruence level of the brand, which our results confirm (F(2,211) = .104, p = .902). Moreover, the results show that the perception of brand and advertising congruence depends on the brand category and the related products (see Table 3.1-2). As intended via our manipulation, Logitech shows the highest level of congruence, while Levi's is interpreted as thematically incongruent pre-experimental manipulation. Coca-Cola is perceived as moderately congruent. Based on these results, we argue that the manipulation of the congruence levels was successful. Moreover, as expected, the pre-experiment congruence does not depend on the construal-level manipulation and therefore shows no interaction effect with the manipulated congruence level ($F_{brand\_congruence}(2, 208)$ = .348, p = .706 & $F_{ad\_congruence}(2, 208)$ = .270, p = .764).

Table 3.1-2. MANOVA Results – Pre-Experiment Brand and Advertising congruence

Factor: Congruence	Brand congruence F(2,211)=87.170***	Advertising congruence F(2,211)=54.056***
Logitech *(high congruence)*	4.88 (1.35)	4.49 (1.18)
Coca-Cola *(moderate congruence)*	3.91 (1.50)	3.50 (1.72)
Levi's *(low congruence)*	2.08 (1.12)	2.19 (1.14)

Pre-perceived brand and advertising congruence with context, 1 = low perceived congruence, 7 = high perceived congruence (.05 < p < 0.1; ** p < .05; *** p < .001; n. s. = not significant); Mean (SD in brackets)*

Results and discussion

To test our hypotheses, we performed a MANOVA with regard to perceived levels of congruence between the brand and advertising and the eSports environment *after* the video stimuli was shown. MANOVA results show that the construal level and the level of congruency interact and that with regard to both aspects of brand and advertising congruence, the psychological distance, in which the consumer evaluates the context congruence, matters (see Table 3.1-3).

Table 3.1-3. MANOVA Results (DV = Congruence)

Post-experiment Brand Congruence						
Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	5.56 (1.36)	3.50 (1.63)	2.01 (1.18)	66.391 ***	1.800 n.s.	3.185 ** η^2=.031
High psychological distance	5.08 (1.50)	4.11 (1.71)	2.74 (1.85)			
Post-experiment Advertising Congruence						
Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	5.20 (1.34)	3.30 (1.77)	2.03 (1.24)	38.413 ***	1.294 n.s.	5.077 ** η^2=.047
High psychological distance	4.45 (1.58)	3.97 (1.88)	2.89 (1.89)			

Post-perceived brand and advertising congruence with context, 1 = low perceived congruence, 7 = high perceived congruence (.05 < p < 0.1; ** p < .05; *** p < .001; n. s. = not significant); Mean (SD in brackets)*

To determine which state of mental abstraction within the three general levels of congruency produces significant differences, we used multiple planned contrast tests where we successively selected each level of congruency and compared the two mental abstraction levels within each congruence level. In the case of brand congruence, the results do not show any differences in the high level of congruence condition (t(64)=1.354, p=.180). In this case, the abstraction level at which the consumer of an eSports stream perceives the brand does not seem to matter. A nearly identical result can be observed in the case of medium congruency (t(64)=1.491, p=.141). In contrast, in the condition with a low level of congruence (t(80)=2.132, p=.036), a high level of psychological distance causes consumers to perceive a higher level of context congruence. For the actual advertising, our results confirm a significant difference for the distinct psychological distance levels for two out of the three congruence conditions and, therefore, an impact of the mental abstraction levels. In the case of high congruence (t(64)=2.088, p=.041), the more distant psychological state even negatively impacts the post-treatment congruence, in contrast to the pre-advertising evaluation. In the cases of

moderate congruence (t(64)=1.475, p=.145) and low congruence (t(80)=2.454, p=.016), a high level of construal – as expected – produces a positive effect. Nevertheless, in the case of medium congruence, the mean difference is not significant.

Because we collected congruence twice, i.e., pre- and post-experiment, we calculated the difference (Δcongruence) between brand-congruence$_{post_video}$ (advertising-congruence$_{post_video}$) and brand-congruence$_{pre_video}$ (advertising-congruence$_{pre_video}$) and again applied planned contrast tests to determine whether the growth or decrease of congruence from pre- to post-measurement within a brand differs significantly due to the psychological distance (see Figure 3.1-4).

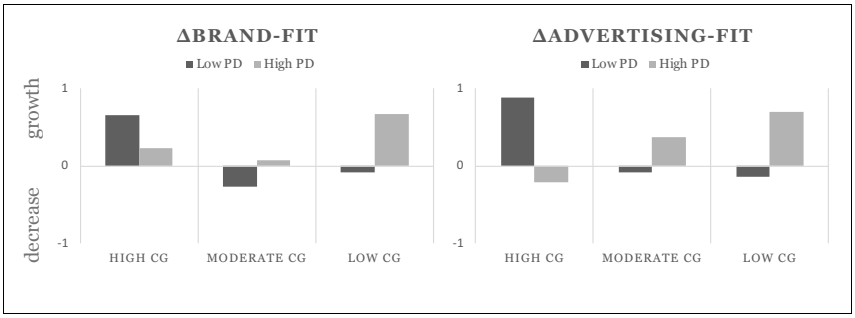

Figure 3.1-4. Delta-Congruence-Perception, CG = congruence, PD = psychological distance

In the case of Δbrand-congruence, we only find a significant difference in the low congruence level condition: $t_{high\_congruence}(64)=1.386$, p=.171, $t_{medium\_congruence}(64)=1.543$, p=.128 and $t_{low\_congruence}(80)=2.735$, p=.008. However, the results show a significant impact of psychological distance in the case of Δadvertising-congruence in all three congruence levels: $t_{high\_congruence}(64)=2.912$, p=.005, $t_{medium\_congruence}(64)=2.004$, p=.049 and $t_{low\_congruence}(80)=2.931$, p=.005. As expected, high-distance temporal anchoring in the case of low congruence leads to a significant growth of perceived congruence, while low-distance temporal anchoring is more favorable in the case of high congruence.

In addition, we conducted two moderation analyses by using PROCESS for SPSS (Hayes, 2017) to reveal any potential moderation effects of the involvement and expertise regarding eSports that could influence the main effect of psychological distance. However, neither involvement in eSports nor eSports expertise influenced the perception of the advertising or brand congruence in the case of eSports streaming services in our data.

The results support H1a and b: Anchoring advertisements to different psychological distances leads to a different processing of perceived congruence. A high consumer construal level seems to support connections within the patterns and makes it simpler to find a link between the context and the advertising brand. This result is in line with previous research where future orientated temporal time frames lead to a more positive evaluation in case of incongruent brand extensions (Jhang et al., 2012). However, supporting a low level of mental construal due to a low psychological distance anchor might moderate perceived congruence negatively in the case of incongruent brands or at least show a more neutral effect. As consumers seek for a match between their construal level and the heuristics used (Braga et al., 2015), the mismatch might lead to less positive evaluations. In the case of a congruent brand, the results show the opposite effect, although the negative effect of a "wrong" construal level, i.e., a high distance anchor, is not crucial. In this second case, it seems more promising to advertise in a more concrete way, e.g., by referring to the psychologically closer anchor. Hence, in both cases the perceived congruence is positively moderated by the psychological distance. More precisely, the results show that only by referring the advertisement to a more distant (vs. close) setting in the same context, the distance moderates the context congruence such that the evaluation of congruency is positively strengthened.

The attitude toward the brand does not differ significantly between high or low construal level conditions in this study. We suppose that the attitude toward the brand is a more consistent construct, and thus, an immediate change via construal level manipulation might be hard to achieve. In contrast, congruence is a present-based perception and is therefore more flexible. This might also explain why we only observe significant interaction effects for brand congruence perception in the case of incongruent brands. The overall brand perception might be more stable, whereas the perception of the congruence between the advertising and the context is more present-based and is therefore susceptible to distance anchoring. Nevertheless, with a higher congruence between ad and context, brand credibility might increase, and the brand will become more favorable (Dahlen and Lange, 2005).

3.1.3.3 Study 3

Method and procedure

To gain a more profound insight into the effects of mental construal on advertising perception, we conducted a third online experiment among German consumers. We tested our hypotheses in this study again by means of a 3x2 between subject design as in the previous experiments, with the factors 'thematic brand congruency' (incongruent vs. moderately congruent vs. congruent) and 'psychological distance' (low vs. high). In this case, we conducted the study in a mobile video game setting to analyze whether the

results hold in this ad environment. We used a manipulated video of a videogame trailer that showed in-game footage through direct screen capturing. Participants were asked to put themselves in the situation of playing the game as the scene depicted in Figure 3.1-5 appeared.

Figure 3.1-5. Schematic flow of the video-prime in experiment 3

The video started by showing the screen for selecting a car. Thereupon, the car was selected, and the game menu changed to a racetrack selection where the player hit the button "Race". The game changed to the real full-sized load-screen for three seconds, followed by a manipulated transition to a full-size information area for a related game add-on (i.e., downloadable content for the game), which we used as prime for 22 seconds. We again manipulated psychological distance by means of the temporal and spatial distance. In the low psychological distance condition, the prime contained information about a game setting called "One Night in Cologne". Moreover, we added the information that the game is available today for "only 0.99 €" at a specific app-store. The window also contained concrete information (attributes) about game features (three new racing tracks in Cologne, two new car-paintworks, a new game mode and a new car). In the high psychological distance condition, the prime anchor contained information about a game add-on that would be released "still this year", with an unspecified price, and would be available "everywhere". The setting was displayed with the title "A Journey to Tokyo". In contrast to the low psychological distance setting, the information area did not contain specific game attributes but rather the benefits of playing the game (e.g., new game modes for a joyful experience). Then, the information faded out and a brand-related ad was shown for six seconds in the former information area. The second factor, brand congruency, was manipulated as in the previous experiments. Based on a pretest (N = 58, M_{age}=23.66, SD=6.83, 55.2% women), we used Volkswagen to represent a congruent brand due to their strong proximity to cars. For comparability with study 1, we used Coca-Cola for moderate incongruence and Levi's as an incongruent brand. The design, i.e., the background and colors of the ads, were equal in all conditions and similar to previous experiments. Again, only the brand logo, the advertised product, and the claim in the ad were exchanged. Moreover, we added a loading animation in the lower right frame for a more realistic impression that

the game was still in a loading segment. After that, the video changed back to a full-sized view of the in-game footage (i.e., the real loading screen for three additional seconds, followed by the racing start sequence). Afterwards, the video faded out. We chose this overlay-based style because there is a trend in video gaming practice to show additional information about the video game within loading screens or even offer mini games to tackle the waiting period (Campbell, 2015).

The procedure in study 3 was analogous to the procedure in study 2, with three central differences: (1) we changed the setting to game-based advertising, (2) we measured the relevant outcome variables only once after the experiment, and (3) we focused in the third experiment on the effects on advertisement perception. The one-time measurement was based on the decision to analyze the moderating effects of psychological distance on ad and congruence perception without a possible bias of self-evaluation adjustment. N = 221 undergraduates participated in the third study (n > 31 in each condition, M_{age} = 26.46, SD = 16.91, 139 women). The structure of the questionnaire was identical: After the start page, the respondents initially answered a question regarding brand knowledge and were randomly assigned to one of the six experimental conditions of the online experiment. Then, the respondents completed measures related to several control variables, including involvement with mobile games, interest in mobile games and brand involvement. Involvement with mobile games was measured by applying a scale based on Segev et al. (2014) (4 items; e.g., "I think of myself as a mobile gamer" 1 = I totally disagree – 7 = I totally agree α = .85). Interest in mobile games was measured on a seven-point scale by Olney et al. (1991) (4 items; e.g., "Mobile games are interesting to me" 1 = I totally disagree – 7 = I totally agree, α = .95). Moreover, brand involvement was measured based on a scale introduced by Voss et al. (2003) (3 items; e.g., "I attach great importance to this brand" 1 = I totally disagree – 7 = I totally agree, α = .86). Afterwards, the respondents were introduced to the experiment, which was identical to study 1, but adapted for racing games. As a manipulation check for construal level, we again used the shortened multi-item BIF, complemented by questions regarding the perceived temporal and spatial distance. Afterwards, respondents had to answer questions regarding the main constructs, i.e., the perceived congruence of the advertisement within the present context, the perceived implementation of the ad, and the attitude toward the brand. The measurement of perceived advertising congruence was operationalized by using the same Becker-Olsen (2003) scale as in study 1 (α = .96). In addition, the perceived ad implementation was measured by adapting a scale based on Rifon et al. (2004) (3 items; e.g., "The advertisement is well integrated into the game" 1 = I totally disagree – 7 = I totally agree, α = .85). The attitude toward the brand was operationalized in a way similar to study 2, based on the scale by Stuart et al. (1987) (α = .94). Thereafter, the respondents had to answer questions regarding their attitude toward the ad, the ad's credibility, brand involvement and product involvement.

The attitude toward the ad was operationalized on a on a seven-point scale by De Pelsmacker et al. (2002) (6 items; e.g., "I found it attractive" 1 = I totally disagree – 7 = I totally agree, $\alpha = .81$). The credibility of the advertisement was adapted based on a scale introduced by Pollay and Mittal (1993) (3 items; e.g., "In general, I feel that I can trust the shown advertisement" 1 = I totally disagree – 7 = I totally agree, $\alpha = .79$). Finally, the respondents had to answer questions regarding their product involvement and mobile game expertise. Moreover, we measured the interest in seeking more information after the ad was shown to the respondents. The involvement with the product category was operationalized by applying a scale based on De Pelsmacker et al. (2002) (3 items; e.g., "[The product category shown in the video] … is important to me" 1 = I totally disagree – 7 = I totally agree, $\alpha = .86$). Expertise in mobile games was documented based on a scale by Griffith et al. (2004), as used in study 2 ($\alpha = .81$). Interest in seeking more information about the brand was adapted based on a scale introduced by Griffin et al. (2008) (6 items; e.g., "I'm likely to go out of my way to get more information" 1 = I totally disagree – 7 = I totally agree, $\alpha = .73$). Finally, the respondents had to recall the brand they had seen and what kind of information was given within the video (next match vs. match in one year), followed by the last page where we gathered age, sex and education level as additional control variables.

To test the success of manipulating the psychological distance by providing information about the released game add-on set in Cologne (low temporal and spatial distance) vs. an upcoming add-on set in Japan (high temporal and spatial distance), we compared the respondents' answers regarding the perceived temporal distance ("The release of the expansion of Real Racing (i.e., the time when the expansion can be played) was..." 1 = very close – 7 = very far away) and the spatial distance ("The geographical distance of the expansion of Real Racing (i.e., the place where the expansion is set) was..." 1 = very close – 7 = very far away). Respondents with a low distance treatment reported mean values of $M_{low\_temporal}=3.21$, SD = 1.25 and $M_{low\_spatial}=3.18$, SD=1.41, while respondents in the high psychological distance treatment reported mean values of $M_{high\_temporal}=4.00$, SD= 1.03 and $M_{high\_spatial}=4.58$, SD=1.56. In both conditions, the distance perceptions differed significantly ($F_{temporal}(1,219)=26.292$, $p<.001$ and $F_{spatial}(1,219)=48.181$, $p.<001$). Moreover, the results of the BIF scale for the two corresponding conditions show the intended differences and support the successful manipulation of the construal level: the respondents who saw the information about the already-released add-on reported a BIF score of $M_{low} = 2.67$, SD = 2.03. The respondents who were shown the more distant add-on reported a significantly higher construal level: $M_{high} = 3.30$, SD = 1.83, $F(1, 166) = 4.412$, $p = .037$). Finally, as intended, the BIF score and both perceived

distance dimensions were independent of the congruence level of the brand (F_{BIF} (2,163) =.925, p =.399; $F_{Temporal}$ (2,163) =.649, p =.524) and $F_{Spatial}$ (2,163) =.936, p =.394).

Results and Discussion

To check the robustness of our results from study 2 and to gain a more profound understanding of the effects of psychological distances on advertisement perception, we performed an ANOVA with the perception of advertisement congruence (with the game context) as the dependent variable and the factors psychological distance and congruence level as independent variables (see Table 3.1-4). Moreover, we calculated t-tests within the congruence levels to observe whether the mental abstraction level influences the overall perception. First, the results show that the assumption regarding the congruence levels is supported by our data. The advertising congruence perception again depends on the brand category and the related products. As intended via our manipulation, Volkswagen, as a car manufacturer, produced the highest congruence perceptions. Moreover, Levi's shows the lowest level of congruence regarding racing games, while Coca-Cola shows the intended moderate congruence with the context. The results also show once more that perceived congruence varies, while the manipulation is generally confirmed in the three congruence conditions with differences in the individual's construal level. To analyze differences of the impact of the congruence levels on perceived advertising congruence, depending on psychological distance, we conducted multiple planned contrast tests. In the case of high congruence, the results show a significant difference between the psychological distance condition, with t(46)=2.104, p=.041, and in the low congruence condition, with t(78)=2.121, p=.037. In contrast, in the case of moderate incongruence it does not matter at which distance level the brand advertising is shown to consumers of the game t(73)=.558, p=.579.

Table 3.1-4. ANOVA Results (DV = Advertising Congruence post experiment)

Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	4.99 (.98)	3.51 (1.90)	2.27 (1.23)	28.326 ***	.209 n.s.	3.823 ** η^2=.034
High psychological distance	4.24 (1.76)	3.28 (1.71)	2.96 (1.68)			

Post-perceived advertising congruence towards context, 1 = low perceived congruence, 7 = high perceived congruence (.05 < p < 0.1; ** p < .05; *** p < .001; n. s. = not significant); Mean (SD in brackets)*

Moreover, with this third experiment, we focused on perceived advertising regarding attitude, implementation and credibility (see Table 3.1-5).

Table 3.1-5. ANOVA Results (DV = Implementation, Attitude and Credibility)

Implementation of the Advertisement						
Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	5.13 (1.20)	4.02 (1.36)	3.11 (1.59)	12.736 ***	.052 n.s.	3.679 ** η^2=.033
High psychological distance	4.41 (1.38)	3.91 (1.62)	3.80 (1.86)			
Attitude towards the Advertisement						
Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	3.89 (1.51)	2.94 (1.42)	2.61 (1.17)	2.426 *	.907 n.s.	5.007 ** η^2=.045
High psychological distance	3.18 (1.49)	3.44 (1.36)	3.38 (1.68)			
Credibility of the Advertisement						
Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	4.27 (1.19)	4.09 (1.26)	3.60 (1.26)	.201 n.s.	.480 n.s.	3.872 ** η^2=.035
High psychological distance	3.89 (1.26)	4.07 (1.25)	4.34 (1.15)			

Congruence, Attitude and Credibility of the Advertisement, 1 = low (perceived) congruence/ attitude/credibility, 7 = high (perceived) congruence/attitude/credibility (.05 < p < 0.1; ** p < .05; *** p < .001; n. s. = not significant); Mean (SD in brackets)*

Hence, we conducted an ANOVA for the congruence of the game and the ad, the attitude toward the ad and the ad credibility as dependent variables and with the factors psychological distance and congruence level as independent variables. In general, we

can observer for all three variables a significant interaction effect, which implies the existence of the proposed moderation effect of psychological distance on congruency perception (Baron and Kenny, 1986). However, to get deeper insights on congruence conditions, in which the moderation effect appears, we conducted again multiple t-tests. For perceived congruence, results reveal a significant effect for the high congruence level with t(64)=2.206, p=.031, no effect in the case of medium congruence (t(73)=.299, p=.766) and no significant effect for a low congruence level with t(78)=1.702, p=.093. With regard to attitude toward the advertisement, our results show significant effects in the case of the two extreme levels of congruence ($t_{high\_congruence}(64)=1.906$, p=.061 and $t_{low\_congruence}(78)=2.271$, p=.026). In line with our previous results from study 2, psychological distance shows no moderation effect in the case of medium congruence (t(73)=1.545, p=.127). However, the conducted t-tests show a significant difference in case of ad credibility for a low level of congruence (t(78)=2.708, p=.008). Interestingly, in neither the case of a high level of congruence (t(64)=1.236, p=.221) nor in the case of medium congruence (t(73)=.054, p=.957) we observe an effect in case credibility of the ad.

The results of an ANOVA regarding the impact of psychological distance and brand congruity on consumers' interest in information seeking about the brand are displayed in Table 3.1-6. Corresponding with the previous discussion, in case of the tendencies for information seeking interest, a match between higher congruence and low psychological distance and vice versa seems more favorable for brand advertisement positioning. Consumers with a more successful processing of incongruity tend to have a higher level of interest in seeking more information. Nevertheless, by conducting t-tests, we could only observe a significant difference between levels of psychological distance within the low congruence level, with t(76)=2.788, p=.005. We could not note a significant effect in the case of high congruence (t(62)=1,239, p=.220) or in the case of medium congruence (t(70)=.415, p=.680).

Table 3.1-6. ANOVA Results (DV = Interest in more Information)

Factors	Congruency (CG)			*F*		
Psychological Distance (PD)	High	Moderate	Low	*CG*	*PD*	*CG* × *PD*
Low psychological distance	4.33 (.98)	3.91 (1.17)	3.38 (.95)	2.338 *	.360 n.s.	4.631 ** η^2=.043
High psychological distance	3.97 (1.33)	3.80 (.85)	4.11 (1.31)			

Interest in more Information, 1 = low interest, 7 = high interest (.05 < p < 0.1; ** p < .05; *** p < .001; n. s. = not significant); Mean (SD in brackets)*

Finally, following Spector and Brannick (2011) we controlled for multiple variables that could influence these perceptions besides the psychological distance. Previous research has shown these variables to be potential moderators of advertising perception (Dahlen et al., 2008; De Pelsmacker et al., 2002; Lee and Faber, 2007; Li and Lo, 2014). First, we conducted an ANOVA for involvement and interest in mobile games. We could not find any effect between the factors congruence level and psychological distance ($F_{interest\_mobile\_games}(2,215)=.064$, $p=.938$ & $F_{involvement\_mobile\_games}(2,215)=.125$, $p=.883$). In both cases, we could also not find any moderation effect on the outcome variables by using PROCESS (Hayes, 2017). Moreover, we controlled the participants' expertise regarding mobile games. As a requirement for potential moderation, i.e., independence of the moderator regarding the experimental factors, we could not observe any effect of either factor ($F_{expertise\_mobile\_games}(2,190)=.041$, $p=.960$). Thus, the results show a minor but significant moderation effect in the case of advertising congruence perception ($F(1,192)=4.61$, $\beta=-.10$, $p=.033$, $\Delta R^2=.019$). In addition, we controlled for brand involvement and knowledge about the brand, which were randomly assigned to the participants. Again, there was no effect on brand involvement ($F_{brand\_involvement}(2,215)=.294$, $p=.745$) or brand knowledge ($F_{knowledge\_brand}(2,215)=1.775$, $p=.172$). Nonetheless, we also could not observe any significant moderation effect. Finally, we found no effect of the factors on product involvement related to the product shown within the advertisement ($F_{product\_involvement}(2,215)=.693$, $p=.501$). However, regarding moderation effects, the results again show small effects of product involvement on advertising congruence perception ($F(1,217)=4.64$, $\beta=-.083$, $p=.032$, $\Delta R^2=.017$) and on attitude toward the advertisement ($F(1,217)=3.44$, $\beta=-.067$, $p=.064$, $\Delta R^2=.015$). In contrast to previous research (e.g., De Pelsmacker et al., 2002), in all three congruence conditions, involvement based on psychological distances shows a negative effect on the (in)congruence evaluation. One might argue that with more profound involvement comes greater consumer knowledge related to a specific product or brand. In this case, the preexisting knowledge might be more stable and less susceptible to distance anchoring. This would also explain the negative impact of product involvement, namely, there is a more stable representation of brand information in the schemata.

Summing up, these results support in general H1 and H2. It seems more favorable for an incongruent brand to position its advertising in a more psychologically distant and consequently more abstract condition, in our study, the support for a distant upcoming game-add-on. In contrast, a higher congruence is perceived in the case of congruent brands when a low distance anchor is set before the actual advertisement is presented. Nonetheless, in the medium congruence (or incongruence) condition, we observe a

recurrent outcome, as the mental abstraction level does not show any effects. We therefore suppose that a brand that "falls through the cracks" might be ambivalent in the case of congruence, thus producing no clear direction of effect. While for some consumers, a more abstract context would be promising (medium incongruence), for other consumers, a less distant and more concrete condition (medium congruence) would be favorable. This assumption is supported when taking a closer look at the mean values (see Table *3.1-5*). The perceived congruence of the advertisement with the game (i.e., well implemented) profits from a more concrete representation, while the attitude toward the ad is more positively impacted by a more abstract representation. Recent research has shown that high congruence or incongruence is clearly schema driven, while moderate incongruence is more likely to be related to a stimulus-driven perception (Halkias and Kokkinaki, 2014). We argue that these stable results regarding medium congruence fit very well with this assumption, as the psychological distance and, therefore, the impact on the schema influence the two extreme congruence levels but not the stimulus-driven moderate incongruence, which might lead to ambivalent interpretations. Hence, for the twofold strong (in)congruence levels, as expected, it seems to be more favorable for an incongruent (vs. congruent) brand to position its advertising in a more (vs. less) distant and consequently more abstract (vs. concrete) anchor, not only for congruence perception but also in the case of the overall advertisement evaluation. Finally, one very interesting result is the overall effect we observe with regard to ad credibility. Psychological distance does not moderate the effects of congruency on the credibility of the ad in the high or medium congruence conditions. In contrast, in the case of low congruence, a successful resolution results in a more 'believable' advertisement, which in our data, even surpasses the congruent brand. This result might be essential, because the literature suggests the high importance of advertisement credibility for actual consumer behavior (e.g., Dahlen et al., 2008; Rifon et al., 2004).

3.1.4 General Discussion

Conclusion

Our study was based on the central assumption that a more abstract mental construal supports finding patterns within pre-existing knowledge, which in turn influences how the perception of brand and advertising congruence is processed. Our results support this central presumption in cases of congruence and advertisement perception, and they emphasize that mental abstraction levels based on psychological distance contribute to the understanding of advertising processing. In our studies, the psychological distance was used to achieve a more abstract (vs. concrete) level of consumers' mental construal based on construal level theory. We conclude that different distance anchors given by

an advertiser before an advertisement lead to a different processing of a follow-up advertisement. Our results show, however, that an incongruent brand cannot be transformed to a congruent one but that an abstract mindset supports finding patterns within consumers' pre-existing knowledge in the case of context incongruence for brand and advertising perception, which helps consumers resolve the incongruence. Consequently, a successful processing of incongruity also leads to a more positive perception of the overall advertisement, which might impact general consumer behavior toward the advertised brand (Dahlen and Lange, 2005).

Future Research and Managerial Implications

However, our assumptions did not hold for all variables in all interaction levels of psychological distance and congruence level. First, contrary to prior research (e.g., Choi and Rifon, 2002), we could not observe any effect of context congruence on the attitude toward the brand. We assume that variables that are formed in the long run might not be directly affected by a more successful processing of (in)congruity. In contrast, present-based perceptions seem to indeed be responsive to mental abstraction levels that match the "correct" arrangement for the brand-level congruence. Nevertheless, even though the present-based perceptions might impact consumer behavior in the short term, future research should address more potential direct effects of the mental abstraction level on the desired consumer behavior and the underlying processing in the case of advertisements, e.g., emotions (Eroglu et al., 2003). Moreover, in the present study, we only analyzed future-based temporal distances in order to manipulate high psychological distance. However, the question arises how past anchors interact with congruence perception. According to the literature, "past" anchors (i.e., psychological distance from the past) should be equivalent to "future" anchors in terms of psychological distance effects (Trope and Liberman, 2010). However, research has shown that future events are more prototypically represented and that future framing differs from past anchoring (Kane et al., 2012). Past anchoring might be accompanied by heritage effects, which have been supported in a number of fit contexts (Spiggle et al., 2012). Therefore, past anchoring (i.e., high psychological distance, for example, "brand X has been supporting this event since the year…") might undo the positive effects of high psychological distance only in the case of incongruent brands i.e., heritage effects will dominate any effects of psychological distance, which could be beneficial for both extreme forms of congruence. Hence, future research should explore different lengths of time for past anchoring of psychological distance and their interactions with perceived congruence and other related outcome variables.

In addition, even though we respected that there exists a congruity–incongruity continuum, and although we did not opt for only a dichotomous operationalization of

incongruity (Halkias and Kokkinaki, 2014), we mainly observe effects only within the two clearly pronounced congruence (incongruence) levels. A medium congruence, as in our studies, seems to be flexible for both pairings between psychological distance and congruence level (i.e., low psychological distance and congruency vs. high psychological distance and incongruency). In study 2, consumers tend to interpret the medium congruence brand Coca-Cola as representing an incongruent level, where a high construal level leads to a higher perceived congruence. In study 3, which involved the case of a mobile (racing) game, interpretations with regard to the medium congruence brand were more ambiguous: while some consumers decoded the advertisement as congruent, others seemed to interpret the brand, i.e., the advertisement, as incongruent. In both cases, the more powerful psychological distance (i.e., positive effects on fit and ad perception) would vary. This result is surprising. On the one hand, none of the studies and pretests revealed a clear objective link between this brand and racing games. On the other hand, Coca-Cola shows a ubiquity for advertisement in a broad range of contexts, e.g., sporting events and concerts. However, this would not explain the results in the case of eSports. Future research might address this issue: What are the central determinants that explain context congruence or incongruence for brands in the case of advertisements? Does 'no obvious link' automatically evoke incongruence? How much does the context matter, e.g., different genres of mobile games (Nelson, 2002; Terlutter and Capella, 2013)? Moreover, a question arises regarding the meaning of contextual distance: What form of psychological distance should be used for medium congruence brands?

Furthermore, especially in the case of in-game advertising, previous research shows homogenous results with regard to the dominating case of congruency and the "realistic" implementation of advertisement (Huang and Yang, 2012). From the present results, one might argue that psychological distance is also likely to be relevant regarding additional dimensions of distance, thus going beyond temporal and spatial distance. For instance, social distance might be relevant. In our context, the social distance between the game character and the player might be important. Moreover, the 'world design' (realistic worlds vs. high level of fantasy) and storytelling might also influence the consumer's abstraction level. Thus, future research should address dimensions of game design that might influence mental construal in order to include effects on advertisement resulting from the overall game setting.

In this study, we only concentrated on the "supplier side" of advertisements, i.e., the effects on the advertised brand itself. However, especially in the context of games, a high level of congruence might positively impact the perceived advertisement and the overall gaming experience (Chang et al., 2010). Therefore, future research should analyze whether the effects of advertisement for games depend on the construal level.

This question seems to be essential, as free-to-play games funded by advertisements appears to be a dominant business model among game developers (Fahey 2017). Additionally, digital environments provide the opportunity for consumer-specific ads. Nevertheless, in a video network or service, such personalized ads are likely to be connected to incongruent ad contexts. Our results indicate possible strategies for influencing perception of congruence to the context that might help control the effects of personalized ad placement (e.g., distant information). However, we did not analyze such effects in detail, so we cannot offer insights into how consumers interact with the actual content of the psychological distance anchor (e.g., announcing an upcoming event or product or a completely different distance anchor). Therefore, future research might address ways to influence mental abstraction by not only respecting mental construal but also reflecting on how it is created, i.e., the consumer relevance of the mental-construal-priming context.

Our study can also provide useful insights for practice because our results are important for brands and media agencies that currently rely on using or planning to use contextual advertising. Here, marketers of context incongruent brands should depict their brand in more abstract and distant conditions, while context congruent brands should favor a more concrete representation. Results show that anchoring (incongruent) advertisements to different temporal and spatial distances positively impacts important variables (e.g., ad credibility) that influences the actual consumer behavior like the information behavior or might even lead to purchases. Thus, it is all the more advisable to control the exact implementation of advertising, i.e., either to use own distances in the presentation of the advertising or to control a downstream positioning of advertising based on "external" distances, e.g., after an announcement like in the present study. Moreover, our study can also provide useful insights for app developers, publishers, streaming providers and advertising planners for brand advertisement placements. With our studies, we identified important factors for a more successful placement of advertisements. Within a given context, providers and developers have the chance to implement frameworks that make the advertisement potential more favorable for brands that generally do not fit such contexts. This might influence game design strategies or program sequences, i.e., streaming services, as these placements (near vs. distant anchors) might be considered.

However, the present experiments also have limitations. First, the sample size of the studies was relatively small. Because the sample size determines the amount of error inherent to the results of the statistical testing, the effects of an experimental treatment are more difficult to identify in small samples (Cohen, 2013). This limitation might explain why we could not find effects with regard to all interactions of psychological

distance and congruence level. Thus, larger sample sizes in future studies might strengthen the statistical power of the hypothesis testing and potentially help identify more-significant effects of the experimental factors on the constructs under review or confirm the present results. Second, we only analyzed two advertisement contexts: online (eSports) streams and mobile (racing) games. One might argue that the present results might be representative of a broad spectrum of advertising environments. Nevertheless, the findings in the case of moderate incongruence show differences among these two contexts. Therefore, because of this limited external validity, future research is needed to study the identified effects with different brand categories and contexts. More precisely, follow-up research should control for more and different environments. Additionally, the sample was conducted among consumers in Germany. Prior research in consumer behavior shows several important differences in personalities with respect to demographic variables (e.g., age and culture) (Li and Lo, 2014). Therefore, cross-cultural studies might provide insights into how the interaction of psychological distance (e.g., which dimensions and how they work) and congruence level should be adjusted according to the preferences and requirements of consumers based on the cultural background of the target groups in different international markets. In follow-up research, this and the previously mentioned issues should be addressed.

3.1.5 Appendix

Table 3.1-7. Overview Constructs Essay 1

Constructs (Cronbach's Alpha)	**Items**	**Sources**
Attitude towards advertising in general (α = .87)	Generally, I like advertising. Overall, I consider advertising a good thing. My general opinion about advertising is favorable.	Adapted from Pollay / Mittal (1993)
Behavioral Identification Form	Painting a room... *Apply paint* *Making the room look new* Create a list... *Organize* *Write things down* Picking an apple... *Getting Something to Eat* *Pull an apple off a branch*	Adapted from Vallacher/ Wegner (1987)and Slepian (2015)

	Cutting down a tree... *Use an axe* *Getting firewood* Measuring a room to lay carpet... *Prepare to remodel the room* *Using a measuring tape* Gardening... *Plant seeds* *Getting fresh vegetables* Sealing a hole in a tooth... *Protect your teeth* *Go to the dentist Go to the dentist*	
Perceived Congruence (Study 1 α = .87) (Study 2 α = .95) (Study 3 α = .96)	similar / dissimilar consistent / inconsistent typical / atypical representative / unrepresentative complementary / not complementary makes sense / does not make sense	Adapted from Becker-Olsen (2003)
Attitude towards the brand (Study 2 α = .80) (Study 3 α = .94)	not appealing/ appealing unattractive/ attractive not desirable/ desirable uninteresting/ interesting bad/ good	Adapted from Stuart at al. (1987)
Expertise (Study 2 α = .92) (Study 3 α = .81)	I know very much about eSports. [mobile games] I have already watched eSports. [mobile games] I've seen a lot of different eSport matches. [mobile games]	Adapted from Griffith/ Chen (2004)
Involvement with brand (Study 3 α = .86)	The brand … is very important to me. I'm very interested in the … brand. I don't care about the … brand at all.	Adapted from Voss et al. (2003)
Involvement with mobiles games (Study 3 α = .85)	I am a person who deals a lot with mobile games. I don't think much about mobile games. I see myself as a gamer of mobile games. I have no interest in mobile games.	Adapted from Segev et al. (Segev et al., 2014)
Interest in mobile games (Study 3 α = .95)	I like mobile games. Mobile games interest me. Mobile games seem to be interesting. Mobile games would give me pleasure.	Adapted from Olney et al. (1991)
Perceived ad implementation	The ad matches the game. The advertisement is well integrated into the game.	Adapted from Rifon et al. (2004)

(Study 3 α = .85)	The advertising is consistent with the rest of the game.	
Attitude toward the ad (Study 3 α = .81)	.. I had a positive impression of the advertising. ... I felt that the advertising was relevant to me. ... I found the advertising interesting. ... I found the advertising credible. ... I thought the ad was exaggerated. ... I found the advertising attractive.	Adapted from De Pelsmacker et al. (2002)
Credibility of the advertisement (Study 3 α = .79)	In general, I think that you can trust the shown advertisement. I think that the shown advertisement was misleading. The shown advertisement gives a true picture of the products of the brand	Adapted from Pollay / Mittal (1993)
Product involvement (Study 3 α = .86)	... important to me. ... boring for me. ... interesting for me.	Adapted from De Pelsmacker et al. (2002)
Interest in seeking more information about the brand (Study 3 α = .73)	When I see information about the … brand, I will ignore it. When the brand … appears, I will avoid information about it. Collecting information about the brand … is wasted time. I'm likely to go out of my way to get more information When the … brand comes up, I try to find out more about it.	Adapted from Griffin et al. (2008)

3.2 Vividness of Product Images in Online Stores: The Role of Delivery Time

3.2.1 Introduction

E-commerce is still one of the most important growth sectors worldwide: global retail e-commerce sales are expected to reach the mark of $ 3,453 billion in 2019 and an additional increase of almost 41% to $ 4.878 billion by 2021 (eMarketer, 2018). Retailers therefore try to participate in this growth and to optimize their online shops in the best possible way to attract online shoppers.

In contrast to brick-and-mortar stores, products in online stores, however, lack a multisensory experience (Yoo and Kim, 2014); they cannot be “held in hand”, felt, tried out or smelled before purchase. The absence of haptic and gustatory information in online stores can reduce the decision-making confidence of consumers and lead to

purchase cancellations (Peck and Childers, 2003). In fact, this effect has become evident in a whole set of studies concerning purchase behavior in different contexts: products that are presented with a higher sensory richness have a higher chance of being purchased (e.g., Müller, 2013; Shiv and Fedorikhin, 1999; Steinmann et al., 2014; Van Der Heide et al., 2013). Bushong et al. (2010) even deduce that all retailers should present real products and allow sensory interactions in shopping environments, even if the costs might rise. However, for online stores, in which only indirect product experiences are achievable as a rule, product images represent a substantial source of sensory information. Thus, retailers try to enhance these visualization forms (Yoo and Kim, 2014).

In this context, vividness plays an important role because it is likely to increase the products' sensory richness, i.e., the products' representational richness in a mediated environment (Steuer, 1992). The latter results in a stronger mental imagery, i.e., a mental event involving the visualization of a concept or relationship (Lutz and Lutz, 1978). Here, mental imagery reflects the process by which a sensory experience is represented in the consumers' working memory in terms of "ideas, feelings, and memories" (MacInnis and Price, 1987, p. 474). With regard to online shopping, shoppers experience gratification arising from consuming products that are presented more vividly than less vividly, which is supposed to lead to more favorable behavioral outcomes; thus, in an online environment, a higher level of vividness of product images, addressing the issues above, leads to a more positive outcome (Coyle and Thorson, 2001).

Astonishingly, most research that studies the effects of vividness and mental imagery neglects a key element of e-commerce: delivery time. Even though there are endeavors to foster same-day delivery or delivery within a few hours of the order, in the majority of cases, shoppers have to wait several days for their order to arrive. Here delivery time is mostly investigated as barrier for e-commerce (e.g., Chen et al., 2010; Li et al., 2014; Schaupp and Bélanger, 2005). However, delivery time also represents the shopper's temporal distance, i.e., a specific type of psychological distance to the product. For instance, the perceived distance to a product with five days of delivery time is experienced as higher than to a product that is offered via same-day delivery. Here, construal level theory (CLT) postulates that perceived distance influences the shoppers' construal level and therefore their mental degree of abstraction. The higher the shoppers' perceived temporal distance, the higher is their construal level (Trope et al., 2007). Addressing this gap in research, this study analyzes the influence and interdependence of perceived temporal distance to products and the vividness of product images in online shopping. Based on the literature, we argue that the construal level adopts a central role: CLT research demonstrates that the construal level not only influences information

processing but also how different information heuristics shape decision making (Braga et al., 2015; Trope et al., 2007). Hence, we argue that in low-construal level situations (e.g., evoked by short delivery times), consumers prefer concrete and detailed product representations such as those resulting from presentations with high vividness. In contrast, a high-construal level suggests the use of abstract global information, such as that achieved by low vividness product presentations. Based on CLT, it is likely that the effect of vividness on the purchase decision is impacted by consumers' psychological distance. While there is yet no empirical support for this, investigating this influence is essential because it extends previous research regarding the effects of vividness and sensory richness (Müller, 2013; Steinmann et al., 2014) by considering delivery time, which is a key factor in online shopping, not only as a barrier in online environments (e.g., Chen et al., 2010; Li et al., 2014; Schaupp and Bélanger, 2005) but also as an antecedent of consumer information processing in online shopping.

Using delivery time as a determinant of the construal level via two studies, we identify whether the vividness of product images contributes to online shoppers' attitude towards the product and their intention to purchase. We show that purchase decisions are based on concrete (abstract) detailed information in low (vs. high) construal level situations and that, therefore, products exhibited via high (vs. low) vividness are preferred. Depending on the displayed delivery time and thus the psychological distance to the potential use of the product, consumers prefer different levels of vividness of product images.

Low-construal level shoppers, who were manipulated in our study by a short delivery time, prefer more concrete product presentations that represent a higher level of vividness. In contrast, consumers faced with a long delivery time and thus a higher level of mental construal react more positively to more abstract product images that evoke lower levels of vividness. We thus show that the congruence of levels of mental construal and vividness positively affects consumer attitudes and behavior. However, with our study, we also show that these results only hold true for consumers with a sufficient capacity for mental imagination. Nonetheless, our results imply that an adaptation of the product images' degree of abstraction (i.e., the level of vividness) to the expected delivery time might be a worthwhile strategy for online retailers. Moreover, our results show that research in e-commerce should not only regard delivery time as distance to product usage but also take into account that it serves as a factor that impacts consumer information processing and consumer shopping experience on retail websites.

In the following, we will discuss the theoretical background of our study and introduce our hypotheses. Afterwards, we present two consecutive experimental studies. The first study investigates whether delivery time affects psychological distance and how it impacts the effects of vividness on consumer attitudes and behavior. The second study

investigates the robustness of the study 1 results and provides a more detailed understanding of psychological distance's impact on the underlying mediating effects of mental imagery. In addition, via study 2, we show how the mental imagery ability of online shoppers is a potential constraint that might moderate the impact of vividness on consumer behavior. We conclude our article with a discussion of implications for future research and practitioners alike.

3.2.2 Literature Review and Hypotheses

Conceptual Model

Our conceptual model (see Figure 3.2-1) mainly builds on construal level theory and the effects of mental imagery. Generally, based on the literature, we suppose that different levels of vividness have an impact on both consumption and ownership imagery, which in turn influences online shoppers' attitude towards products that are presented in online shops and the actual intention to purchase. However, based on CLT, we suppose that delivery time provokes different levels of psychological distance that affects online shoppers with regard to the products displayed in online shops and moderates the effects of vividness on mental imagery, consumer attitudes and purchase intentions. In particular, we suppose that the congruence of mental construal (concrete vs. abstract) and vividness of product presentations in online shops (high vs. low) has a positive effect on consumer attitudes and behavior.

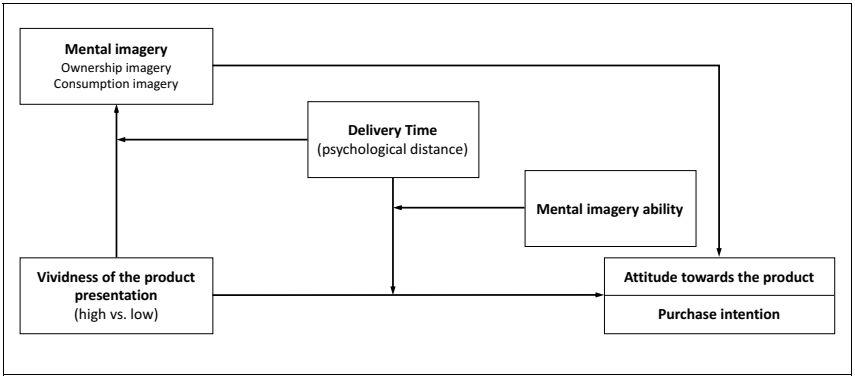

Figure 3.2-1. Conceptual Model

Effects of the Vividness of Product Presentation

Vividness denotes the "representational richness of a mediated environment as defined by its formal features, that is, the way in which an environment presents information to the senses" (Steuer, 1992, p. 81). The effect of the vividness of product presentation on consumer-related variables has been shown in a number of studies, for example, on emotions (Lao, 2014), perceived purchase risk (Park et al., 2005), attitude towards the product (Steinmann et al., 2014), willingness to buy the product (Elder and Krishna, 2012) or the intention to revisit a website (Jiang and Benbasatz, 2014). Bushong et al. (2010), for instance, compared the willingness to pay at Becker-DeGroot auctions for products that were presented via text or as a real product. They showed that the subjects' willingness to pay is 40 to 61 % higher for real product displays than for text displays. In addition, product vividness steadily increases with the sensory richness of product presentation (Nisbett and Ross, 1980). For example, products presented in real life have a higher vividness than three-dimensional images of products because the real products contain more sensory information than do the images do (Müller, 2013). In line with this, Shiv and Fedorikhin (1999) showed that consumers were more likely to choose products that were physically presented compared to those that were symbolically represented as illustrations.

However, online shops can only include product representations via visual and auditory representations, and most often illustrations represent the substantial source of sensory information (Yoo and Kim, 2014). In this context, the sensory extent of product presentations is important: Sensory extent is represented by the number of senses addressed by a medium and thus the "quantity" of sensory experience (Steuer, 1992). In contrast to real world environments, e-commerce currently only offers visual and auditory stimuli. Media richness in online shopping is therefore often enhanced by multimedia use, including audio elements, product videos, animations (Bushong et al., 2010; Coyle and Thorson, 2001; Jiang and Benbasatz, 2014), or even augmented reality or virtual reality elements to enhance product vividness (Baker et al., 2019). However, vividness can also be altered by the degree of variation in a single sensory channel and thus the "quality" of the information transmitted to this sense with regard to its sensory depth (Steuer, 1992, p. 83), which is also characterized by the degree of detail and the accuracy of the stimulus (Phillips, 1996). Petrova et al. (2005) distinguishes various forms of product presentation in this context, including concrete vs. abstract words (Burns et al., 1993), the use of images vs. no images (Lee and Gretzel, 2012) and concrete vs. abstract images (Babin and Burns, 1997). Concrete (vs. abstract) visual representations focus on the actual product with its properties and constitutive details (Rossiter, 1982). The higher the level of realism in illustrations, the more concrete is the representation (Petrova and Cialdini, 2005). In this context, contextual details in pictures

are of importance. They include "considerable information on the physical setting or locale, the spatial arrangement of objects and people, and the activities associated with the consumption of the product" (Krishnamurthy and Sujan, 1999, p. 56 f). The content of the images can impact the vividness of the presented product. Three-dimensional images of a product, for example, evoke a higher degree of vividness than two-dimensional photographs (Steinmann et al., 2014), and more concrete images such as an image of an unwrapped chocolate bar cause more vividness than scarcely concrete images such as an image of a wrapped bar of chocolate (Yoo and Kim, 2014). In addition, research has shown that unwrapped products or products that are presented in a usage situation (e.g., contextual background or accessories) increase vividness (Lao, 2014). Thus, the more visible the product, the more vividly it is perceived, and the more related its presentation in a usage situation or a usage context, the more vividly the product presentation is perceived (Maier and Dost, 2017; Schwanenflugel et al., 1988). Won Jeong et al. (2013) showed that rich and more complex images lead to a more distinct sensory, emotional and cognitive stimulation than basic images, resulting in more engaging shopping experiences. Van Der Heide et al. (2013) demonstrated that actual product photographs (vs. stock photographs) increased consumers' intention to buy and led to higher final sales prices. Moreover, Coyle and Thorson's study (2001) indicates that the higher the perceived level of vividness on websites, the more positively they are assessed, which in turn creates more enduring attitudes. In summary, especially in the context of online shopping, research shows that higher levels of vividness in illustrations and product representations lead to more purchase impulses (Steinmann et al., 2014).

The effect of vividness is strongly connected with consumer mental imagery of the products (Loewenstein, 1996). Mental imagery relates to the degree of sensory or perceptual experience that is represented in an individual's working memory in terms of ideas, feelings and memories (MacInnis and Price, 1987). The more information and impressions of an object that are salient in the working memory, the higher the level of perceived mental imagery. Whether these impressions are multisensory (e.g., the mental representation of the smell of a meal and its taste) or whether they originate from only one sensory source (e.g., visual memories of a lunch break) does not necessarily influence the level of mental imagery. Rather, it depends on the richness of the salient sensory information (MacInnis and Price, 1987). More vivid product images can set off more mental imagery than less sensory-rich product images (White et al., 1977). Accordingly, high vividness of product images is associated with more vivid and concrete mental representations of the product and a higher (or more pronounced) level of mental imagery. Prior research has shown that mental imagery impacts consumers'

ability to recall prior consumption experiences with the prevailing product. This increases the salience of the gratification arising from consuming the product (Shiv and Fedorikhin, 1999).

While this procedure of processing and representing information regarding products is usually summarized as mental imagery (Bone and Ellen, 1992), this concept might be subdivided into two main subcategories: consumption imagery and ownership imagery (Peck and Shu, 2009; Petrova and Cialdini, 2005). Consumption imagery "consists of a series of vivid mental images of product-related behaviors and their consequences, which allows consumers to more accurately anticipate actual consequences of product use" (Phillips, 1996, p. 70). Thus, via simulated mental usage situations, consumers create representations of self-experiencing future consumptive situations (Walters et al., 2007). Consumption imagery thus helps consumers select an appropriate alternative (Phillips et al., 1995). In contrast, ownership imagery relates to perceived ownership (Fuchs et al., 2010; Kamleitner, 2011) and describes "the state in which individuals feel as though the target of ownership or a piece of that target is 'theirs' [...]"(Pierce et al., 2003, p. 86). Previous research has shown that such a feeling also occurs in the absence of the product and can be evoked solely by pictorial representations, triggered by concrete, detailed stimuli (e.g., Kamleitner, 2011; Peck et al., 2013). Psychological ownership seems to depend on strong imagery processing (Kamleitner and Feuchtl, 2015). For instance, Claus and Warlop (2017) demonstrate that individuals, when imagining the concrete use of a mug, manipulated in their study by means of detailed vs. abstract product photos, also reported different levels of ownership imagery. Moreover, Kamleitner (2011) shows that while thinking about an object, more vivid mental images lead to a higher level of perceived ownership. In her study, high levels of perceived ownership led to more positive attitudes towards the product and resulted not only in higher levels of willingness to pay but also in higher levels of willingness to save money and take out a loan to obtain the desired good (Kamleitner, 2011). In addition, Fuchs, Prandelli and Schreier (2010) demonstrate a positive connection between ownership imagery and actual purchasing behavior, as well as the recommendation rate.

All these effects gain in importance when the real product cannot be directly experienced (Horowitz, 1972), as is regularly the case in online stores. Based on previous reasoning, in online retailing product images, high levels of vividness may evoke the mental imagery of consumption situations and thus facilitate the consumption vision of the related products. Summing up, we propose the following:

H1: *Product images in online stores with a high (vs. low) level of vividness evoke a higher (vs. lower) level of mental imagery.*

H2: *Product images in online stores with a high (vs. low) level of vividness evoke a more positive (vs. more negative) attitude towards the product.*

H3: *Product images in online stores with a high (vs. low) level of vividness result in a higher (vs. lower) intention to buy.*

Delivery Time in Online Stores

The fact that products can only be experienced indirectly in online shops is linked to the situation that products cannot be taken along directly in online shops like it is possible in brick-and-mortar stores: orders in online stores demand a waiting time between order and delivery/consumption, and thus delivery time plays an important role. The majority of previous studies that have analyzed the role of delivery time in online shopping regard this waiting time as transaction costs (Young Kim and Kim, 2004), representing one of the obstacles in online orders (Rohm and Swaminathan, 2004) that need to be minimized (Anand, 2007; Schaupp and Bélanger, 2005). Reducing delivery times is therefore regarded as an important factor in gaining competitive advantage among online retailers (Li et al., 2014). For instance, Amazon has advertised "anticipatory shipping", a method to start delivering packages even before customers click "buy" (Bensinger, 2014). However, in regard to the relevance of delivery time for consumers, the impact goes far beyond just rising transaction costs. Previous research has shown that decision processes are likely to change as a function of time (Ariely and Zakay, 2001). For example, waiting time between decision and consumption can alter which alternatives are preferred by consumers. It thus may, for example, make a difference with regard to the selected alternative, whether a person orders a meal in a restaurant for immediate consumption or whether the person orders the meal a few hours before actual consumption (VanEpps et al., 2016). One reason for this is that waiting time, i.e., delivery time, as it occurs in online shopping, triggers psychological distance. "[P]sychological distance is a subjective experience that something is close or far away from the self, here, and now. Psychological distance is thus egocentric: Its reference point is the self, here and now, and the different ways in which an object might be removed from that point—in time, space, social distance, and hypothetically—constitute different distance dimensions" (Trope and Liberman, 2010, p. 240). Accordingly, with greater temporal distance (distant vs. near future), a stimulus cannot be directly experienced and thus is perceived as psychologically distant (Trope et al., 2007). The effects of temporal distance in online shopping can be explained by construal level theory: the higher the temporal distance perceived, the higher is the shoppers' construal level and vice versa. We therefore propose *the following:*

H4: *The longer (vs. shorter) the delivery time, the higher (vs. lower) is the shoppers' construal level.*

Interplay between Delivery Time and Vividness

Construal level theory implies that, depending on the mental construal, different aspects dominate decision making (Aggarwal and Zhao, 2015): a high-construal level results from abstract mental representations, which are based on globally and abstractly processed information. In contrast, a low-construal level is based on concrete and detailed information, processed with a focus on specific elements (Trope et al., 2007). The impact of construal level on consumer assessment and decision making has been frequently empirically confirmed: Fujita et al. (2008), for example, demonstrate that depending on their construal level, consumers preferentially adhere to arguments that highlight primary, i.e., abstract (high-level) features when the construal level is high, while they tend to mainly include incidental, concrete (low-level) features in their decision making in low construal situations. Moreover, Braga et al. (2015) demonstrate that the heuristics referred to differ according to construal level of the consumer. This phenomenon, for example, becomes apparent in the context of assortment size preferences: consumers prefer smaller range sizes when they perceive a high level of psychological distance to the products (Goodman and Malkoc, 2012), because in the case of a high level of distance, they are more likely to process product information in an abstract manner. Differences between diverse purchase options that would be present in a case where a retailer offered a wide range of products therefore become "blurred" in such high distance situations. Thus, high-construal level consumers are not in a need of a wide selection. In contrast, shoppers concentrate on the differences between individual options in small distance and low-construal level situations and place a greater emphasis on smaller differences. Thus, preferences for a wider range increase and hence large assortments are desired.

Transferring these general relationships to our research context, we suppose that construal level affects the impact of the vividness of a product image on the attitude towards the presented product as well as on the shopper's buying intentions. If temporal distance is low (because of a shorter delivery time), information is processed at a low-construal level. Thus, it is particularly concrete, detailed information that is taken into account in the shoppers' decision-making processes. This type of detailed information can be offered via highly vivid product presentations that include richer sensory information. We therefore expect that in low-construal level situations, provoked by a shorter delivery time, products that are presented via more vivid representations are preferred. In contrast, in high-construal level situations in which the delivery times are longer, abstract comprehensive global information positively contributes to decision-making processes. As low-vividness types of product presentations offer this global,

abstract information, such lower vividness provoking product presentations are preferentially evaluated and purchased. This reasoning is supported by the results of the Kardes, Cronley and Kim (2006) study, in which they show that for consumers, it is not necessary to concretely visualize the consumption experience when the event is in a distant future, concluding that detailed product presentations have no positive effect. In summary, we therefore suppose that mental construal (i.e., abstract vs. concrete) in the case of congruence with the level of vividness of the stimulus (i.e., low vs high) enhances vividness' effect on consumers' attitudes and behavioral intentions:

H5: *The positive effect of a product presentation's high (vs. low) vividness on the attitude towards the product is enhanced by a low (vs. high) temporal distance to the product.*

H6: *The positive effect of a product presentation's high (vs. low) vividness on the intention to buy is enhanced by a low (vs. high) temporal distance to the product.*

Consumers tend to overcome psychological distances by creating analogue mental representations (Lynch and Zauberman, 2007). In the case of a low psychological distance (in our context temporal distance) to a consumption experience, consumers prefer detailed product presentations that provide them with more information and that show a higher level of mental congruence and fit to their consumption imagery (Liu et al., 2017). Moreover, the more information that consumers have about a product and its possible usage, the more likely they will imagine themselves as the 'owners' of the product and thus perceive a higher level of ownership imagery (Kamleitner, 2011). If, however, either temporal distance is high or consumers only perceive low ownership imagery, then rich sensorial representations might be more likely to be neglected and abstract representations favored (Braga et al., 2015). We thus suppose that both ownership- and consumption-related imagery act as motivational drivers that produce a 'self-fulfilling effect', i.e., that are likely to cause anticipated behavior to turn into 'real' behavior (Phillips, 1996), and we hypothesize the following:

H7: *Consumption imagery mediates the effects of the interplay of product images (high* vs. *low vividness) and temporal distance (high* vs. *low distance) on [a] the attitude towards the product and [b] the intention to buy the product.*

H8: *Ownership imagery mediates the effects of the interplay of product images (high* vs. *low vividness) and temporal distance (high* vs. *low distance) on [a] the attitude towards the product and [b] the intention to buy the product.*

Imagination ability as a constraint.

Despite our reasoning, it is likely that potential constraints with regard to the relationships between vividness and attitude as well as buying intentions might occur. These constraints might result from consumers' mental imagery ability (MIA) (Marks, 1995). MIA describes the visual imagination of a person, i.e., the ability to "visualize, namely, the ability to form mental pictures, or to 'see in the mind's eye'" (Keng and Lin, 2006, p. 85). MIA is regarded as a central factor that is able to strengthen or even reverse the effects of product representations (MacInnis and Price, 1987; Petrova and Cialdini, 2005). Based on Paivio's (1991) dual-coding theory, we suppose that individuals with a high level of MIA are likely to process concrete stimuli more efficiently because they are able to more easily create visual representations based on verbal and visual associations and thus have at their disposal memory to produce more sensory information in the form of mental images (Yang and Guo, 2015). In contrast, for consumers experiencing low levels of MIA, it is more difficult to activate mental images and to anticipate future events via visual mental processes (Kosslyn et al., 1984). This difficulty in processing hinders the effectiveness of vivid product presentations, causing their usually positive effect to be reversed (Ostinelli and Böckenholt, 2017; Petrova and Cialdini, 2005). Consequently, we suppose that the effects that we propose with H5 to H8 are strengthened when consumers experience higher levels of mental imagery ability; however, these effects might even vanish if consumers experience low levels of MIA. Thus, we hypothesize:

H9: *A higher level of mental imagery ability strengthens the effects of the interplay between product images and temporal distance on consumers behavioral and attitudinal outcomes.*

3.2.3 Empirical Studies

To test our hypotheses, we conducted two consecutive studies. The first study investigates the proposed effects of temporal distance (manipulated via delivery time) and the vividness of product presentations (manipulated via a packed vs. an unpacked product) and addresses how temporal distance moderates the effects of vividness in the case of a virtual online shop. The second study investigates the robustness of the results of study 1 and enhances the study by focusing on three central differences. First, we analyze the robustness of the results with regard to the product category by including a more hedonic vs. a more utilitarian product. Second, vividness is manipulated via a pictorial depiction of a usage situation in the high vividness condition (e.g., turned-on coffee machine with filled, steaming coffee cups) in contrast to a pure product presentation in the low vividness condition (e.g., switched-off coffee machine without any additional usage context). Third, in study 2, we provide a more detailed

understanding of the impact of temporal distance on the mediating effects of consumption and ownership imagery processing and analyze the impact of MIA as a potential boundary factor that might influence those relationships.

3.2.3.1 Study 1

Method

For study 1, we performed an online experiment with a 2x2 between-subject design with the factors of vividness (low vs. high) and temporal distance (low vs. high). We used manipulated screenshots of an online chocolate store in all conditions. A detailed product page of a bar of chocolate with the photograph of the chocolate bar (depending on the condition, wrapped for low vividness or unwrapped for high vividness) and with a verbal description of the brand, the flavor and weight, the price plus shipping charges as well as the delivery time (depending on the condition one or five days, see Figure 3.2-2) was depicted. We chose a chocolate bar as the test object because hedonistic products are more prone to mental imagery than purely utilitarian products (e.g., Feiereisen et al., 2007; MacInnis and Price, 1987; Micu and Coulter, 2012; Roggeveen et al., 2015). In addition, regarding the product category of food, "freshness" might be less crucial in comparison to products such as fruits, which could (negatively) influence the perception of the delivery time. In addition, we chose chocolate as a product category because in general, respondents were acquainted with both the product and the corresponding consumption situation. To guarantee that the consumption situation anticipated with the chocolate bar was positive, we controlled for diet, allergies and personal taste preferences.

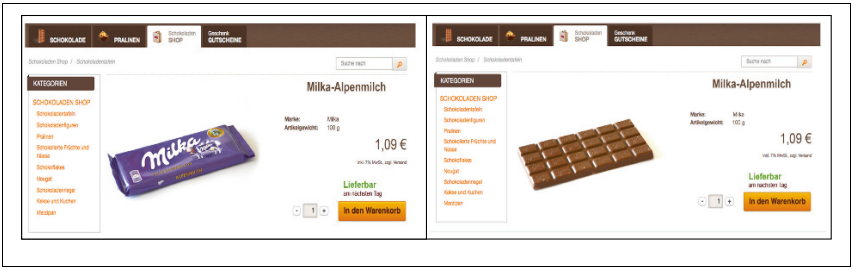

Figure 3.2-2. Manipulation of Vividness in Study 1

Vividness of the product presentation was manipulated via the chocolate's photograph: in the low vividness condition, the screenshot showed wrapped chocolate, a common

way of how chocolate is presented in online stores. In the high vividness condition, the same chocolate was presented in an unwrapped way. Following Steuer's (1992) argumentation, the vividness of a product is higher (vs. lower) when more of the unpacked product can be seen. In addition, unwrapped products evoke stronger associations with the consumption experience and lead to a more detailed impression with more comprehensive information in the working memory of consumers' minds. We added additional information on the website next to the product. In this way, we ensured that the website contained the same product information in the condition of "low vividness" as in the condition "high vividness".

We manipulated the second factor, construal level, by means of temporal distance via different information on delivery time because in previous studies, temporal distance was successful in manipulating construal level (e.g., White et al., 2011). Based on a pretest with 30 respondents (N = 27, M_{age} = 25.89 (SD = 7.52), 48.15% women) that showed which delivery times for products such as chocolate in online shops are perceived as low or high ($M_{low\_delivery\_time}$ = 1.59 (SD = .80); $M_{high\_delivery\_time}$ = 4.63 (SD = 2.04)), we chose "next day" (low-construal level) versus "in four to five days" (high-construal level) as delivery times in our experimental study. Both of these delivery times are commonly used by online retailers that sell chocolate.

Measures and Procedure

The participants of the study were recruited by means of links on social websites and newsletters at universities. A total of 256 students participated in the study (n > 60 in each condition, M_{Age} = 24.11, SD = 5.63, 58.6% women). Participants were directly directed to the start page of our online questionnaire on which, apart from the welcome message, the (supposed) goal of the study was described and the anonymity of all answers was assured. To prevent the influencing of the participants' behavior, we declared that we were interested in learning more about their attitudes towards the online distribution of chocolate. After dealing with the final questionnaire, we informed all participants about the real goal of the present study.

Respondents initially filled in a short prequestionnaire in which we gathered age, sex and a number of control variables (online shopping experience, experience with purchasing chocolate on the internet, current diet, perceived hunger and current mood). Subsequently, respondents were directed to a screenshot of our fictitious online store for chocolate. They were asked to subsequently evaluate the online store and to illustrate the positive as well as the negative aspects of this way of selling chocolate with the help of the presented example. In the following questionnaire, we collected the purchase intention regarding the presented product ("if you were to buy a chocolate, how interested would you be in purchasing this specific item?", 1 = not at all to 7 = very, plus a "don't know" category, adapted from Müller 2013). Afterwards, we enquired as

to the extent of mental imagery (scale with 3 items, 1 = low mental imagery to 7 = high mental imagery, Cronbach's alpha = .75, based on meta-scale, without both dimensions, by Shiv and Fedorikhin (1999) and Kardes et al. (2006). Finally, participants indicated their attitude towards the product depicted based on Batra and Atolla (1991) (scale with 5 items, 1 = positive to 7 = negative, α = .82). As a manipulation check, participants were asked to rate product presentation vividness via three seven-point semantic differential scales (high values standing for more vividness), adapted from Shiv and Fedorikhin (1999) (α = .65). In addition, we tested whether perceived temporal distance differs between delivery times via a single item ("How long did you perceive the delivery time to be?", 1 = low delivery time to 7 = high delivery time). In addition, to ensure the impact of delivery time on the construal level, we included a single item scale ("When deciding whether or not to buy the chocolate, have you given much thought to why or how you use the product?", low values representing a higher level of construal) from Irmak, Wakslak, and Trope (2013). For a detailed overview of all measures used in this essay, see appendix Table 3.2-10.

All scales as well as the manipulation of the online store via the screenshots were pretested with a sample (N = 57, M_{age} = 24.36, SD = 7.21, 55.2% women) drawn from the same population as the sample of the main study. In addition, we used the pretest to ensure that the diverse screenshots of the website in each experimental situation had the intended effects. In addition, participants of the pretest assessed the websites via the Pleasure-Arousal-Dominance scale (PAD scale) (Bradley and Lang, 1994; Mehrabian and Russell, 1974). As the same degree of emotionality was attributed to all four websites, we assumed that the general assessment of the website did not have an impact on the differences between the factor levels.

Manipulation Check

To test whether the manipulation of the vividness of the product presentation via the wrapped (low vividness) vs. unwrapped (high vividness) chocolate was successful in our main study, we collected respondents' vividness assessments via the vividness scale and compared the two corresponding conditions. The results show the expected differences and are in favor of a successful manipulation of the vividness: respondents who saw the unwrapped chocolate in the online store assessed the vividness of the presented product with M_{high} = 5.58, SD = 1.36. Respondents who were confronted with the online store in which the chocolate was presented in a wrapped way statistically assessed its vividness as significantly lower (M_{low} = 5.07, SD = 1.72, F (1, 195) = 5.28, p = .023). However, this result also indicates that the vividness perception of packed and unpacked chocolate is close in the eye of the respondents. To check whether we were able to successfully manipulate temporal distance via delivery time, we tested

whether the perceived distance to the product differed between the two delivery time settings. In this context, the respondents assessed the distance in the condition "delivery time one day" as significantly lower (M_{low} = 3.29, SD = 1.54) than the respondents in the condition "delivery time 4-5 days" (M_{high} = 3.77, SD = 1.89, F (1, 212) = 4.09, p = .044). Thus, all manipulation checks were successful.

Results

To test whether the vividness of product presentation impacts mental imagery, we conducted an ANOVA with the factor vividness as the independent variable and mental imagery as the dependent variable (see Table 3.2-1). Our results show that the anticipated differences become evident. In the low vividness condition, i.e., when a wrapped chocolate was presented to the respondents in the online store, respondents assessed mental imagery as significantly lower than in the high vividness condition. As presumed, the presentation of unwrapped chocolate seems to have evoked memories and memory contents richer in sensory information than the presentation of wrapped chocolate. As expected, this effect was moreover independent of the delivery time and thus of the construal level (F (1, 196) < 1, p = .443). Our results thus support hypothesis 1.

Table 3.2-1. Results of Hypotheses Testing ANOVA (DV = Mental Imagery)

Vividness	***Mean (SD)***	***F***
Low Vividness (wrapped chocolate bar)	5.10 (1.70)	10.03***
High Vividness (unwrapped chocolate bar)	5.75 (1.13)	

*1 = low mental imagery to 7 = high mental imagery; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

Regarding the influence of the vividness of product presentation on the attitude towards the presented product, we expected a positive effect of a higher vividness in hypothesis 2. The results of ANOVA (see Table 3.2-2) show that although the means of the attitude towards the product display the expected differences, they are, however, not statistically significant. Thus, our presumption that memories that are richer in sensory information and evoked by a high vividness have an influence on the positive assessment of the product cannot be substantiated by our data. To rule out that personal diet behavior impacts the attitude towards the presented chocolate, we included this variable as a further independent variable in the model. ANOVA, however, did not reveal any

significant main (F (1, 188) < 1, p = .49) or interaction effects (F (1, 188) < 1, p = .56). We thus cannot substantiate hypothesis 2.

Table 3.2-2. Results of Hypotheses Testing ANOVA (DV = Attitude towards the Presented Product)

Vividness	*Mean (SD)*	*F*
Low Vividness (wrapped chocolate bar)	3.39 (1.07)	1.50
High Vividness (unwrapped chocolate bar)	3.58 (1.09)	

*1 = negative to 7 = positive attitude; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

In hypothesis 3, we expected a direct effect of vividness on respondents' intention to buy and thus conjectured that product images in online stores with high (vs. low) vividness lead to higher (vs. lower) intentions to buy. Again, the results of ANOVA (see Table 3.2-3) show that the differences between product presentations with high and low distance to the product, however, are not statistically significant. Contrary to our expectations, our results do not show any direct influence of vividness of the product presentation on the intention to buy the chocolate, and thus we cannot confirm hypothesis 3.

Table 3.2-3. Results of Hypotheses Testing ANOVA (DV = Purchase Intention)

Vividness	*Mean (SD)*	*F*
Low Vividness (wrapped chocolate bar)	3.22 (1.58)	<1
High Vividness (unwrapped chocolate bar)	3.30 (1.76)	

*1 = low to 7 = high purchase intention; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

A central focus of the study was the question of what role temporal distance (operationalized by delivery time) plays in the processing of product presentation in online stores. We presumed in hypothesis 4 that the construal level is influenced by delivery time, i.e., that longer (vs. shorter) delivery times lead to higher (vs. lower) construal levels of processing website information.

To test hypothesis 4, we compared respondents' construal level assessment via ANOVA, with the construal level assessment serving as the dependent variable and the

experimental factor delivery time as the independent variable. Our findings show significant differences (see Table 3.2-4).

Table 3.2-4. Results of Hypotheses Testing ANOVA (DV = Construal Level)

Delivery Time	***Mean (SD)***	***F***
Shorter Delivery Time (next day)	3.24 (1.90)	4.39**
Longer Delivery Time (4-5 days)	2.71 (1.68)	

*1 = abstract to 7 = concrete; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

Respondents with the delivery time "next day" report a higher value, which depicts a more concrete construal ($M_{shorter}$ = 3.24, SD = 1.90), F (1, 196) = 4.39, p = .037). In addition, in the case of the higher delivery time, the mean value for the construal level is lower and thus more abstract (M_{longer} = 2.71, SD = 1.68). We can, in general, support our assumption that temporal distance influences construal level.

The relevance of temporal distance in terms of delivery time for construal level led us to the assumption that the vividness of product presentation has different effects on attitude towards the presented product (hypothesis 5) and on the intention to buy (hypothesis 6) depending on the level of temporal distance. As already demonstrated (see Table 3.2-2), no significant main effect of vividness became evident. The results of additional ANOVA (see Table 3.2-5) also show that the main effect of delivery time is not statistically relevant (F (1, 189) = 2.18, p = .14).

However, as expected, we can confirm a significant interaction between vividness and delivery time. In the short delivery time condition, attitude towards the product presented in the online store was more positive when the product was presented with high vividness ($M_{high\ vivid}$ = 3.48, SD = 1.0, $M_{low\ vivid}$ = 3.73, SD = 1.01). For a longer delivery time, we could confirm the opposite pattern. Here, as expected, online shoppers had a more positive attitude towards the product presented with low vividness ($M_{high\ vivid}$ = 3.67, SD = 1.08, $M_{low\ vivid}$ = 3.09, SD = 1.04, F (1,189) = 7.52, p = .007, eta^2 = 0.04). Via t-tests, we were able to show that high vividness has a negative effect on the attitude towards the product in the setting with the long delivery time (T (98) = 2.77, p = .007), while in the short delivery time condition, attitude is not significantly influenced by vividness (T (91) = 1.136, p = .259). We can thus partially support hypothesis 5.

Table 3.2-5. Results of Hypotheses Testing ANOVA (DV = Attitude towards the Presented Product)

	Delivery Time (D)		***F***		
Vividness (V)	**shorter**	**longer**	***V***	***D***	***V x D***
Low Vividness (wrapped chocolate bar)	3.73 (1.01)	3.09 (1.04)	1.23	2.17	7.52*** (η^2 = .04)
High Vividness (unwrapped chocolate bar)	3.48 (1.0)	3.67 (1.08)			

*1 = positive attitude to 7 = negative attitude; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

When analyzing whether there is a significant interaction effect of vividness and delivery time on the intention to purchase the product, a similar picture emerges. Here, we anticipated that the positive effect of the high vividness of the product presentation only occurs when there is a short delivery time. In contrast, for longer delivery times, a product presentation with low vividness was considered to lead to a higher intention to buy. We again performed ANOVA with the two factors vividness and delivery time as independent variables and the intention to buy as the dependent variable (see Table 3.2-6) While we were not able to confirm a significant main effect of vividness on purchase intentions, we could also not confirm a significant effect of delivery time (F (1, 254) < 1, p = .25).

Table 3.2-6. Results of Hypotheses Testing ANOVA (DV = Purchase Intention)

	Delivery Time (D)		***F***		
Vividness (V)	**Shorter**	**longer**	***V***	***D***	***V* x *D***
Low Vividness (wrapped chocolate bar)	2.79 (1.31)	3.63 (1.72)	<1	<1	7.74** (η^2 =.03)
High Vividness (unwrapped chocolate bar)	3.45 (1.78)	3.13 (1.77)			

1 = low to 7 = high purchase intention; **p* < .1, ***p* < .05, ****p* < .01; mean (SD in brackets).

Nevertheless, as expected, the results show a significant interaction between vividness and delivery time. In the short delivery time condition, the intention to buy the chocolate

was higher when the product was presented with high vividness ($M_{high\ vivid}$ = 3.45, SD = 1.78, $M_{low\ vivid}$ = 2.79, SD = 1.31). For the longer delivery time, an opposite pattern emerged. As expected, online shoppers had a higher interest in purchasing the chocolate in the low vividness condition in contrast to the high vividness condition ($M_{high\ vivid}$ = 3.13, SD = 1.77, $M_{low\ vivid}$ = 3.63, SD = 1.72, F (1, 252) = 7.74, p = .006, eta^2 = .03). Together with t-tests, we were thus able to show that high vividness has a negative effect on the intention to purchase in a low delivery time setting (t(128) = 2.39, p = .018), whereas in the high-level construal condition, the intention to purchase is not significantly influenced by vividness (t(124) = 1.59, p = .113). Our results thus only partially support hypothesis 6.

3.2.3.2 Study 2

Method

Analogous to study 1, in study 2, we performed a 2x2 between-subject design experiment with the factors of vividness (low vs. high) and temporal distance (i.e., delivery time) (low vs. high). We used a detailed picture of an artificial online shop, each containing a screenshot of a coffee machine or a printer (see Figure 3.2-3). The decision to use two different products was based on research that showed that the vividness of product presentations might be affected by product type, i.e., more hedonic vs. utilitarian products (Dewi and Ang, 2001; Feiereisen et al., 2007; MacInnis and Price, 1987; Schneider, 2006). Roggeveen et al. (2015) showed, for instance, that a more dynamic (and thus more vivid) product presentation has a positive impact on web sales for hedonic products, whereas these presentation types did not boost sales of utilitarian products. Thus, to test the robustness of the results from study 1, we randomly included both a more hedonic (i.e., coffee machine) and a more utilitarian (i.e., printer) as products. Addressing these two different product types, we checked for personal product preferences, e.g., for "coffee vs. tea", or for whether respondents had experienced critical incidents, e.g., printer failure, to guarantee that those products were perceived as generally positive. In both cases, basic information such as color, wattage or product type was provided. Furthermore, the price and delivery time were indicated in addition to the product screenshots. Moreover, we added additional information on the website next to these product screenshots. In this way, we ensured that the website contained the same product information in the condition of "low vividness" as in the condition of "high vividness".

Similar to study 1, we manipulated the two factors of temporal distance and the vividness of the product presentation. Delivery time was again used to manipulate the first factor "temporal distance". In the low temporal distance condition, a delivery time of "1-2 days" was depicted, whereas in the high temporal distance condition, a delivery

time of "5-7 days" was shown. Similar to study 1, both of the delivery times used are common for electronic online stores in Germany. The second factor, the vividness of the product presentation, was again manipulated by altering the product screenshot. However, in contrast to study 1, vividness was not manipulated by the product packaging but, following Maier and Dost (2017) and Lao (2014), by depicting each product in a contextual usage situation (high vividness condition) or by using an isolated product presentation without any usage situation hints or additional accessories (low vividness condition). The presentation of the usage situation (i.e., a higher level of vividness) should evoke stronger associations with a particular consumption experience, which is supposed to retrieve more comprehensive information in the working memory (Steuer, 1992).

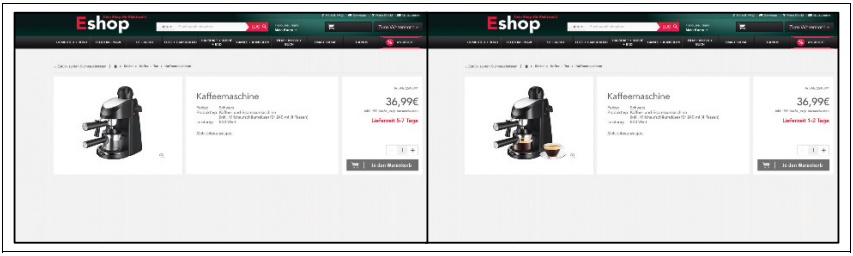

Figure 3.2-3. Product page with coffee machine in low vividness and high vividness conditions

Measures and Procedure

Similar to study 1, participants in study 2 were recruited via links on social websites and forums for online shoppers and via newsletters at universities. A total of 365 respondents participated in the study ($n > 80$ in each condition, $M_{Age} = 24.60$, $SD = 5.28$, 45.5% women). When recruited, the link directly led the respondents to the online questionnaire. Once again, to prevent an influencing of the participants' answering behavior, only information about a secondary goal was given, i.e., the perception of the online shop. After finishing the questionnaire, we informed all participants about the true intention of our study.

Respondents initially answered questions regarding their mental imagery ability using the so-called Vividness of Visual Imagery Questionnaire (VVIQ) introduced by Marks (1973). VVIQ consists of eight items (Cronbach's $\alpha = .79$), with each set of four items asking respondents to imagine a specific given scene and then answer questions about the richness of their mental image, i.e., 1 = "no image at all" to 7 = "clear and vivid as in reality". As scenarios to be imagined, we used "relatives" and "the front of a shop"

to measure their ability to create mental pictures. Although the original version of the VVIQ consists of two further scenarios ("sunrise" and "landscape") (Marks, 1973), the latter were not included in our study because of their contribution to the total questionnaire length. However, each individual scenario seems to lead to reliable statements anyway (Marks, 1995), and therefore, a shortening does not seem to lead to any problems. After these initial questions, respondents were directed to one screenshot of the fictitious electronics online store. As a topic, they were asked to subsequently evaluate the online store and the depicted product.

In addition, we collected the central variables of our study. First, we asked regarding the general purchase intention of the given product. Similar to study 1, we used the single item scale based on Müller (2013) (1 = not at all interested to 7 = very interested). Subsequently, participants indicated their attitude towards the product based on a hedonic and utilitarian dimension. The latter was based on the decision to use both a more hedonic and a utilitarian product in our study to control the sustainability of our results. Thus, both attitude dimensions were measured based on semantic differentials as introduced by Voss et al. (2003) (each scale with 5 items per dimension, 1 = negative to 7 = positive, utilitarian $\alpha = .90$, hedonic $\alpha = .91$). Thereafter, as a manipulation check, participants were asked to rate the vividness semantic differentials. For this purpose, we adapted a scale introduced by Krishnamurthy and Sujan (1999) (5 items, 1 = low vividness to 7 = high vividness, $\alpha = .89$). Next, we asked how the delivery time was perceived to check whether the manipulation was successful. In addition, we controlled for the intended product type by adapting a scale introduced by Dhar and Wertenbroch (2000) (3 items, 1 = utilitarian to 7 = hedonic, $\alpha = .93$). Moreover, to check the impact of delivery time on the construal level, we adapted a single item scale (high values standing for a higher level of construal) from Irmak, Wakslak, and Trope (2013). In addition, to capture mental imagery, we collected respondents' consumption imagery and ownership imagery. Consumption imagery was measured with a total of two items on a bipolar scale (1 = low consumption imagery to 7 = high consumption imagery, $\alpha = .94$). Subjects were asked to answer questions with regard to self-referential product use as introduced by Phillips (1996). To capture ownership imagery, we adapted the scale by Liu, Batra and Wang (2017) and Peck and Shu (2009). Respondents had to classify themselves in terms of how they felt about the perceived ownership of the product, e.g., "I feel like this is my [product]" (3 items, 1 = low perceived ownership to 7 = high perceived ownership, $\alpha = .97$). Finally, respondents were asked to answer questions regarding their usage of the depicted product, as well as their involvement, which we collected as a control variable. Product involvement was measured via semantic differentials based on Zaichkowsky's (1985) work using a seven-point scale (10 items, 1 = low involvement to 7 = high involvement, $\alpha = .92$). The questionnaire ended by documenting age, sex and the education level as additional control variables.

Prior to the second study, we pretested all scales and screenshots of the online store for their suitability by means of a sample (N=29, M_{age} = 25.68, SD = 7.59, 51.7% women) from the same population as the sample of the main study. Moreover, an important element of this pretest was to identify products that would satisfy our assumptions regarding the product type (i.e., a more hedonic vs. utilitarian product) and that would be suitable for our intended vividness manipulation based on a usage situation presentation. Thus, based on a preselection by two experts, we created a vivid (usage situation) and a less vivid (nonusage situation) product picture of ten products, five for each product category. The results showed that the printer was perceived as the most utilitarian ($M_{prinnter}$ = 1.46, SD = .75) and the coffee machine as the most hedonic ($M_{coffee\_machine}$ = 6.52, SD = .61) when taking the manipulation of the vividness simultaneously into account ($M_{prinnter\_low\_vividness}$ = 3.57, SD = 1.67, $M_{prinnter\_high\_vividness}$ = 6.10, SD = .95, t(28)= 8.153, p < .001; $M_{coffee\_machine\_low\_vividness}$ = 4.07, SD = 1.50, $M_{coffee\_machine\_high\_vividness}$ = 6.00, SD = 1.35, t(28)= 6.424, p < .001). Hence, based on these results, we used a printer and a coffee machine as the stimulus material.

Manipulation Check

We performed a number of manipulation checks to test whether our manipulations of the perceived vividness of the product pictures, perceived delivery time and our additional control factor "product type" were successful. First, the results confirmed a successful manipulation of the vividness with regard to the product screenshots of the online shop that we used in study 2. Participants who saw a product picture depicting a usage situation with accessories reported a significantly higher vividness level ($M_{high\_vividness}$ = 5.03, (SD = 1.39)) in comparison to participants in the low vividness condition ($M_{low\_vividness}$ = 3.52, (SD = 1.31)). Thus, the results (t(354) = 10.615, p < .01) favored the successful manipulation of vividness. In addition, we were able to ensure that the manipulation of vividness was independent of the other experimental and control factors, i.e., delivery time (t(354) < 1, p = .506) and the product type (t(354) = 1.183, p = .238). Furthermore, the results (t(354) = 17.121, p < .01) also confirmed the successful manipulation of delivery time. In the low delivery time condition, participants reported a significantly lower value of perceived delivery time ($M_{low\_delivery\_time}$ = 2.23, (SD = 1.305)) in comparison to participants in the high delivery time condition ($M_{high\_delivery\_time}$ = 5.03, (SD = 1.173)). Additionally, for delivery time, we were able to ensure that the manipulation was independent of the other experimental factors ($t_{vividness}(354) < 1$, p = .305 & $t_{product\_type}(354) < 1$, p = .571). Furthermore, our results (t(354) = 17.668, p < .01) also confirmed that the product types included in the study differed significantly in terms of utilitarian (vs. hedonic) perceptions. The printer was interpreted as significantly more utilitarian ($M_{printer}$ = 1.85, SD = .88) than the coffee

machine ($M_{coffee\_machine}$ = 4.43, SD = 1.74). In addition, the perception of the product type was independent of the manipulations of delivery time ($t(354) < 1$, $p = .808$) and the vividness of the product picture ($t(354) < 1$, $p = .361$). Thus, both the central manipulations of delivery time and the vividness as well as the manipulation of the utilitarian dimension of product types were successful.

Finally, we tested whether the delivery time, which we included to manipulate temporal distance, affects participants' construal level. As expected, we observed a significant main effect of delivery time on the construal level ($t(354) = 6.752$, $p <. 01$), which was independent of the level of the respondents' perceived vividness ($t(354) < 1$, $p = .846$). Participants in the low delivery time condition reported a more concrete level of mental construal (M = 4.63, SD = 2.34) in contrast to participants in the high delivery time condition (M = 3.07, SD = 2.04).

Results

Similar to study 1, we neither observed a direct effect of the vividness perception in the case of the utilitarian attitude ($F (1, 352) = 2.65$, $p = .11$) nor in the case of the hedonic attitude ($F (1, 352) = 3.34$, $p = .069$). However, we tested whether the assumed moderating effect of delivery time holds true with regard to our data. We supposed in hypothesis 5 that congruence between temporal distance (i.e., low vs. high delivery time) and product picture vividness (i.e., high vs. low) should evoke a more positive attitude towards the product. The results confirm a significant interaction between delivery time and the vividness of the product presentation for both the hedonic and utilitarian attitude dimensions ($F_{utilitarian} (1, 352) = 43.536$, $p < .01$, $eta^2 = .11$; $F_{hedonic} (1, 352) = 24.330$, $p < .01$, $eta^2 = .06$). Contrast tests reveal significant differences in all four conditions; thus, for both the utilitarian and the hedonic attitude dimensions, we are able to confirm the expected effects. It thus seems more promising to offer a product picture with a high vividness in the case of a low psychological distance (i.e., low delivery time) ($t_{utilitarian}(176) = 5.814$, $p < .01$; $t_{hedonic}(176) = 4.521$, $p < .01$). However, in the case of a longer delivery time and thus a higher construal level, a product picture without a usage situation, and consequently a more abstract presentation, leads to a more positive attitude towards the product presented ($t_{utilitarian}(176) = 3.516$, $p < .01$; $t_{hedonic}(176) = 2.338$, $p = .02$). In both cases, we observe higher mean values of the attitude if the vividness of the product picture (more concrete vs. more abstract) fits the construal level (see Table 3.2-7).

In addition, in all cases, we observe stronger effect sizes in comparison to study 1 (Cohen, 2013). The latter might be a result of the different vividness manipulations. In study 2, through our manipulation, we manipulated the vividness by means of the usage situation, which seems to evoke stronger effects than only a manipulation of the vividness via packaging and thus seems to more harmoniously produce mental images

that help consumers overcome temporal distance (Lynch and Zauberman, 2007). Furthermore, the results of the manipulation check in this study in comparison to study 1 seems to be in line with this assumption.

Table 3.2-7. Results of Hypotheses Testing ANOVA (DV = Attitude towards product -utilitarian and hedonic)

Attitude towards the presented product—utilitarian					
	Delivery Time (D)		***F***		
Vividness (V)	**shorter**	**longer**	***V***	***D***	***V x D***
Low Vividness (neutral presentation)	4.46 (1.24)	5.28 (1.11)	2.65	<1	43.54*** (η^2 = .11)
High Vividness (usage-based presentation)	5.50 (1.15)	4.66 (1.27)			
Attitude towards the presented product—hedonic					
	Delivery Time (D)		***F***		
Vividness (V)	**shorter**	**longer**	***V***	***D***	***V x D***
Low Vividness (neutral presentation)	3.22 (1.10)	3.80 (1.48)	3.34*	<1	24.33*** (η^2 = .065)
High Vividness (usage-based presentation)	4.20 (1.71)	3.35 (.98)			

*1 = negative to 7 = positive attitude; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

In hypothesis 6, we assumed that the positive effect of product presentation vividness on purchase intention is moderated by temporal distance. First, while we could not confirm the main effect of vividness with study 1, the study 2 results reveal a significant main effect of vividness on purchase intention. In the case of low vividness, participants indicate a purchase intention of $M_{low\_vividness}$ = 4.16 (SD = 1.65), whereas participants in the high vividness condition report a slightly but significantly higher purchase intention of $M_{high\_vividness}$ = 4.55 (SD = 1.81) with F (1, 352) = 4.95, p = .027, eta^2 = .014. Second, if we take delivery time as a moderator into consideration, our results (see Table 3.2-8)

show that in the case of delivery time that is perceived as short, it seems more promising to offer product pictures with higher vividness, while in the case of longer delivery times, reducing vividness has a more positive impact on purchase intention. In both cases, contrast tests reveal significant differences between high and low vividness while keeping delivery time constant (shorter vs. longer) ($t_{shorter}(176) = 6.037$, $p < .01$; $t_{longer}(176) = 2.951$, $p < .01$).

Table 3.2-8. Results of Hypotheses Testing ANOVA (DV = Purchase Intention)

	Delivery Time (D)		***F***		
Vividness (V)	**shorter**	**longer**	***V***	***D***	***V x D***
Low Vividness (neutral presentation)	3.55 (1.54)	4.74 (1.55)	4.95**	<1	40.58*** ($\eta^2 = .103$)
High Vividness (usage-based presentation)	5.04 (1.76)	4.02 (1.81)			

*1 = low to 7 = high purchase intention; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

Compared to our proceedings in study 1, with study 2, we sought a more detailed picture of the effects on mental imagery, especially regarding temporal distance and its interplay with vividness. Here, the results should provide insights into how mental imagery mediates the postulated effects. We therefore analyze ownership imagery and consumption imagery as two central dimensions of mental imagery. The results show (see Table 3.2-9) that we observe an interaction effect of vividness perception and temporal distance on ownership imagery ($F (1, 352) = 8.189$, $p < .01$, $eta^2 = .023$). However, for consumption imagery, we only see a direct effect of the vividness ($F (1, 352) = 31.149$ $p < .01$, $eta^2 = .081$) but no interaction effect of the vividness and temporal distance ($F (1, 352) = 1.98$, $p = .16$, $eta^2 = .006$), concluding that only the ownership imagery might be a potential mediator in our data for our assumptions (Baron and Kenny, 1986).

To investigate whether ownership imagery has a mediating effect on attitude towards the product and purchase intention, we conducted multiple analyses of covariance (ANCOVA) with delivery time and vividness as the independent variables and attitude and purchase intention as the dependent variables. The potential mediator was included as a covariate. As an indicator of the extent of mediation, we calculated the percentage of reduction in the mean square (MS) of the effect produced by the covariate, i.e., ownership imagery (Pham and Muthukrishnan, 2002). This procedure has been shown

to be an appropriate procedure for exploring potential mediation effects in the case of experimental designs (e.g., Gorn et al., 2004; Hayes and Preacher, 2013; Pham and Muthukrishnan, 2002; Song and Zinkhan, 2008).

Table 3.2-9. Results of Hypotheses Testing ANOVA (DV = Ownership and Consumption Imagery)

Ownership Imagery					
	Delivery Time (D)		***F***		
Vividness (V)	**shorter**	**longer**	***V***	***D***	***V x D***
Low Vividness (neutral presentation)	2.89 (1.54)	3.06 (1.52)	3.64*	3.70*	8.19*** (η^2 = .023)
High Vividness (usage-based presentation)	3.76 (2.21)	2.88 (1.57)			
Consumption Imagery					
	Delivery Time (D)		***F***		
Vividness (V)	**shorter**	**longer**	***V***	***D***	***V x D***
Low Vividness (neutral presentation)	4.78 (1.74)	4.73 (1.80)	31.15***	2.85*	1.98
High Vividness (usage-based presentation)	5.94 (1.24)	5.43 (1.41)			

*1 = low to 7 = high imagery; *p < .1, **p < .05, ***p < .01; mean (SD in brackets).*

Our results indicate that both for the utilitarian and the hedonic dimension of attitude towards the product and for purchase intention, ownership imagery as the covariate has a significant impact ($p < .01$), which is a necessary condition for mediation (Baron and Kenny, 1986). Nonetheless, we cannot observe full mediation because the main effect of the interaction is still present. However, as expected from hypothesis 8, we observe a reduction in mean square and effect size for all three variables: for the utilitarian attitude dimension ($F_{mediation}$ (1, 352) = 35.682, $p < .01$, $eta^2 = .092$), we observe a decrease by 23.77% of the means square ($MS_{pre\_covariat}$ = 62.162 and $MS_{post\_covariat}$ = 47.387); for the hedonic attitude dimension ($F_{mediation}$ (1, 352) = 16.058, $p < .01$, eta^2 = .044), a reduction by 34% ($MS_{pre\_covariat}$ = 24.330 and $MS_{post\_covariat}$ = 16.058); and for the purchase intention ($F_{mediation}$ (1, 352) = 31.656, $p < .01$, $eta^2 = .083$), a decrease by 22%

($MS_{pre\_covariat}$ = 40.578 and $MS_{post\_covariat}$ = 31.656). The findings thus provide evidence for the mediating effect of ownership imagery.

As expected, we can confirm a strong direct effect of vividness on ownership imagery and consumption imagery. Regarding the latter, we argue that vivid pictures evoke sensory experiences and memories of consumption (Schwanenflugel et al., 1988), hence leading to a more pronounced level of consumption imagery. However, according to our results, only ownership imagery seems to mediate the effects of the interplay of temporal distance and vividness perception. Thus, by taking delivery time into consideration, i.e., temporal distance to the product, it seems to be of greater importance in the context of online shopping and product presentations. We conclude that the temporal distance to the consumption situation affects the perception of the potential ownership, whereas consumption imagery is more prone to direct effects of vividness perception. Nonetheless, in all three cases, we can only observe moderate-size mediation, and all direct effects remain stable, consequently leaving room for further explanatory mediators. Anyhow, the results support hypothesis 8, whereas hypothesis 7 with regard to consumption imagery is rejected.

Finally, we sought to identify whether MIA serves as a potential boundary for the proposed effects of psychological (i.e., temporal) distance and perceived vividness of the product picture in study 2. To identify those boundaries, we used PROCESS for SPSS and computed multiple moderated moderations (Model 3) with vividness as the independent variable, delivery time as the main moderator (m), and mental imagery ability as the secondary moderator (w) that moderated the primary interaction of vividness and delivery time. Moreover, we successively added hedonic and utilitarian attitude as well as purchase intention as dependent variables (Hayes, 2017).

First, the results indicate a moderating effect of mental imagery ability on the central interaction of delivery time and vividness of the product picture for all three dependent variables. In the case of the utilitarian product attitude, we observe a significant three-way interaction (B = -1.513, $p < .01$, LLCI = -2.085, ULCI = -.9410), leading to an increase in the share of explained variance of 6.32% ($F(1, 348) = 27.064$, $p < .01$). Conditional tests for mental imagery ability show a significant impact ($p < .01$) for medium and high mental imagery ability (50^{th} and 84^{th} percentiles); however, there was no impact in the case of low mental imagery ability (16^{th} percentile, p = .36). Moreover, for the hedonic product attitude, we obtain similar results: the results show a significant three-way interaction (B = -1.033, p = .02, LLCI = -1.6871, ULCI = -.3797) with an increase in the share of explained variance of 2.38% ($F(1, 348) = 9.667$, p = .02). However, again, both the 50^{th} and 84^{th} percentiles of mental imagery ability show a significantly different impact on hedonic product attitude, though the results do not differ in the case of low mental imagery ability (16^{th} percentile, p = .23). In addition, the

results also suggest a significant three-way interaction (B = -1.961, p < .01, LLCI = -2.739, ULCI = -1.183) and thus a moderating effect of mental imagery ability on purchase intention. The latter leads to an increase in the share of explained variance of 5.65% (F (1, 348) = 24.576, p < .01). Conditional tests indicate an impact of medium and high level of mental imagery ability (50th and 84th percentiles); however, there are no differences in the 16th percentile (p = .37).

Our data thus imply that the proposed effect of mental imagery ability as a potential moderator holds true. The outcome shows potential boundaries in our data for our central assumptions regarding the interplay of vividness perception and psychological distance. Figure 3.2-4 shows, as an example, that for purchase intention a higher ability for mental imagery strengthens the effects of congruence between the construal level (i.e., temporal distance) and the level of vividness of the product pictures; however, these effects vanish in the case of a low mental imagery ability.

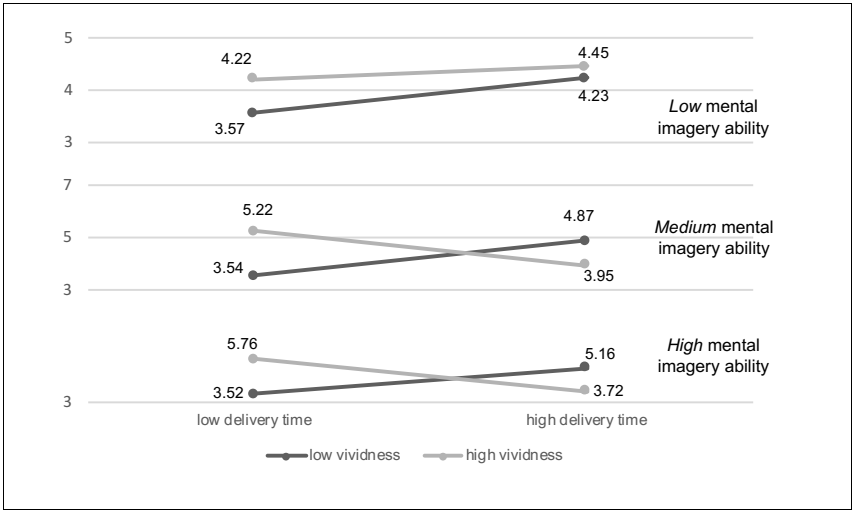

Figure 3.2-4. Moderating effects of mental imagery ability on the interaction of delivery time and vividness for purchase intention

In the case of a high level of mental imagery ability, it indeed seems favorable to match low delivery times (i.e., low-construal level) with highly vivid pictures, while in situations characterized by high delivery time (i.e., higher construal level), pictures of lower vividness seem to be more suitable. The same pattern occurs in the case of a medium level of mental imagery. However, as expected, we observe different results in

the case of a low mental imagery ability: in this case, the moderating effect of low mental imagery ability vanishes. The resulting mean values imply that the general assumption that higher vividness leads to more positive attitudes and higher purchase intentions (Coyle and Thorson, 2001) holds true. However, because we do not observe significant conditional effects (i.e., significant differences between mean values), we can neither directly confirm the positive effect of vividness nor the reversed assumption with regard to the negative effects of vividness (Ostinelli and Böckenholt, 2017). In addition, an almost identical pattern can be observed with regard to the hedonic and utilitarian dimensions of attitude. Nonetheless, these results not only confirm our assumptions regarding the moderating effect of mental imagery ability but also emphasize the importance of the right match between product picture and construal level via considering the pronounced level of mental imagery ability of online shoppers. In summary, we conclude that our results support hypothesis 9.

3.2.4 Discussion and Conclusions

General Discussion

With our study, we provide new insights into the relevance of delivery time in online shopping by demonstrating, based on experimental research, that longer delivery times in online stores create a temporal distance between the consumer and the product, which in turn influences the way in which the content, i.e., the product's presentation, on the websites is processed. The impact of delivery times thus goes beyond just acting as a type of transaction cost because in the case of longer delivery times, consumers perceive a higher temporal distance to the product that—as one form of psychological distance—influences construal level (Trope and Liberman, 2010). Delivery time, consequently, has an impact on how online shoppers process presented information. In the case of short delivery times, information is processed at a lower construal level and thus in a more concrete and detailed way. However, in the case of longer delivery times, the processing takes place at a higher construal level; thus, information is processed in a more abstract, global form. Our results thus correspond with the findings of other studies, according to which the construal level changes with temporal distance to a product (Tangari et al., 2015). While in most previous studies delivery time was only interpreted and analyzed as a barrier to usage, our results nevertheless imply that it is necessary to take a more holistic approach when addressing the impact of delivery time on online shoppers' decisions. Based on our results, we suppose that delivery times act as moderators of shoppers' information processing in online stores. In our study, we mainly focused on the delivery time's moderating impact (via creating temporal distance) on the effects of design features on online shoppers' decision making. However, it can be assumed that results from other contexts of online stores can be

applied as well. In concrete terms, we expect, for instance, that assortment size (e.g., Goodman and Malkoc, 2012) or price (e.g., Bornemann and Homburg, 2011) are differently perceived by visitors of online stores according to psychological distance.

Specifically, we examined the moderating impact of delivery times on how vividness of the product presentation influences consumer attitudes and intentions to buy. While previous studies in the context of online stores have often resulted in advising that more vivid product presentation is advantageous, these results are normally based on only low temporal distances (Coyle and Thorson, 2001). However, our results imply that higher vividness will have such a positive effect on attitude and purchase behavior only if the depicted delivery times—and hence the temporal distance—are low and vice versa. To achieve the intended effect on online shoppers, it is thus necessary to achieve a match, i.e., a congruence between the informational content of the product presentation and the online shoppers' construal level, because this fit exerts a positive effect on attitude and purchase behavior. This assumption is also favored by the fact that in our study we could not confirm significant effects of temporal distance on consumption imagery: in all experimental conditions of our study, high vividness led to concrete mental representations of the product and to a higher level of mental imagery. However, in contrast, we could identify the effects of temporal distance on ownership imagery and thus characterize perceived ownership as a mediator of the relationships under review in our study. Here, the temporal distance interacts with the vividness of product presentations and affects the perception of "this is mine" (Lessard-Bonaventure and Chebat, 2015). This, moreover, implies that there seems to be a difference between consumption and ownership imagery: while anticipated consumption is more likely to be impacted by the actual vividness of product pictures when neglecting the impact of delivery time, ownership imagery seems to be more important when taking delivery time into account. Thus, our results show that a fit between the construal level, evoked by the temporal distance, and the vividness of product picture enhances this effect. We therefore suppose that congruence between both the product and the mental picture leads to more positive outcomes because online shoppers tend to overcome psychological distance by creating analogous mental pictures (Lynch and Zauberman, 2007). Most importantly, these results call into question the assumption that higher vividness is regarded as always more efficient in positively influencing online shoppers' attitudes and purchasing behavior.

However, while we can support the importance of those findings for online store design in the sense of designing product presentations, we also identified boundaries of this interplay between vividness and temporal distances. Previous studies supported the importance of mental imagery ability for the effects of vividness (e.g., MacInnis and

Price, 1987; Petrova and Cialdini, 2005). We extend these previous results, which mainly stress that it is not only the effects of vividness per se that are affected by mental imagery ability (Petrova and Cialdini, 2005) but also the degree of abstraction of mental pictures. Our study shows that higher levels of mental imagery ability seem to strengthen the effects of the match between construal level and the degree of vividness, i.e., when the mental image to overcome the distance is in line with the product's presentation on the website. However, in the case of lower mental imagery ability, we observe that the identified effects of the interplay between temporal distance and vividness perception disappear. In that case, the match becomes irrelevant and thus does not show any significant effect, and we observe a slight dominance of higher vividness (Coyle and Thorson, 2001) that is, however, not statistically significant.

Implications and Limitations

The results of our study reveal multiple implications for practice and further research recommendations. First, the results of our studies reveal that the common assumption that higher vividness should automatically be beneficial for online stores does not necessarily apply. Our results rather indicate that it might make sense to use "dynamic systems" that adapt product images in the online store, i.e., more vs. less vivid, depending on the current availability or delivery times of the products. Nonetheless, online stores should be careful in applying this assumption to all their product categories. While we find positive effects for three products, both hedonic and utilitarian, one might argue that other product types might be processed differently. It might be possible, for example, that higher vividness (i.e., presenting the product in a contextual background or in a video) makes more sense independent of the delivery time for products where design aesthetics are far more important, e.g., clothing or jewelry. Moreover, we only manipulated the vividness of the product presentation via static product pictures. However, vividness might also be enhanced by concrete and distinct verbal descriptions (Moore and Bovell, 2008). Hence, priming via verbal descriptions might lead to different outcomes (Ostinelli and Böckenholt, 2017). Therefore, future research should investigate whether a vividness continuum, which goes beyond a dichotomous operationalization via pictorial depiction, evokes similar effects—especially in the case of highly aesthetic products that might be associated with different interactions of vividness and psychological distance. Moreover, in this context, it might be an area for fruitful research to analyze how different forms of vividness differ and what impact psychological distance has in these cases.

Second, in our study, we focused on products for which the general buying decision is usually in near proximity. Thus, browsing and purchasing a product is connected to a reference point or timeframe (Stilley et al., 2010). However, one might argue that purchase decisions are not always made immediately but are planned over a longer

horizon, e.g., for seasonal products such as Valentine's Day gifts or for products for an upcoming winter season (Miyazaki, 1993). Considering this, our results imply potential enhancements for those purchase decisions for retailers: these seasonal products might be connected to a longer time frame than the actual delivery time. Consequently, consumers might have a different timeframe to overcome and might build analogous mental representations (Lynch and Zauberman, 2007). Based on our results, we suppose that in such long-term planned online shopping situations, it might be beneficial to match the representation of those products with the given timeframe, i.e., if a distant usage is anticipated by the retailer (e.g., a winter jacket bought in the summer because of a sale), less vivid pictures might be beneficial because they provoke congruence with the mental construal of the shopper for distant purchases. These would, therefore, positively affect attitudinal responses and purchase intentions.

Third, our study was based on the research question of how delivery time affects the perception of product pictures and thus how more or less vivid pictures should be used in the online context. However, retailers might sell products where the product pictures are abstract per se. For instance, in subscription-based online services, surprise boxes have become popular (Woo and Ramkumar, 2017). Here, retailers provide shoppers with a random selection of products selected by service providers (Hoshikawa, 2016); hence, the shopper knows the category of products (e.g., sweets) but not which products are actually going to be delivered (e.g., cookies, candy). These products are mostly depicted with a closed box as a product picture or with random products that are meant to give shoppers a general overview. Therefore, these pictures might be interpreted as abstract. Although we would not argue for artificially increasing delivery time based on most of our results, other psychological distances might be useful for a positive stimulation for a more abstract mental construal (Liberman and Trope, 2008). For instance, retailers might trigger a hypothetical distance based on product descriptions that ask online shoppers to consider self-consumption or the consumption by others (e.g., as a present) of the presented products. Moreover, accentuating the country of origin of the product, insofar as the country is distant from the shoppers' country, might evoke spatial distance. Thus, retailers might use psychological distances that go beyond temporal distance to enhance the effects of abstract product images.

Fourth, we suppose that the observed effects are context-dependent and impacted by situational influences. For example, one might point out that mobile devices are also used, e.g., for price comparisons in an offline context while shopping (Wang et al., 2015). In such cases, we suppose that the interpretation of what is a short or what is a long delivery time might shift. While online shopping in a regular occasion (e.g., on a laptop at home), delivery time within the next day is regarded as short and thus as

psychologically close. However, in an offline context (i.e., at the point of sale) and comparing the product price to make a purchase decision, an online delivery time of one day might be interpreted as long, thus provoking a high perceived temporal distance because purchasing offline would yield an immediate ownership of the product (i.e., no delivery time vs. one day). Hence, even a short delivery time in online shops would result in a higher psychological distance and thus a higher mental construal based on the reference point of immediate ownership in the offline context (Stilley et al., 2010). In such cases, online retailers might, for example, use localization (e.g., via their shopping app) to identify if the prospective shopper might use their app for comparing products and prices in offline stores. In the latter case, we suggest that it might be beneficial to assume a higher mental construal and to use less vivid product pictures to stimulate an online purchase.

Fifth, our results suggest that as far as hedonic products are concerned, such as chocolate or coffee machines, the distance to consumption plays a particularly higher role because here the anticipated consumption experience is an important reason for purchase (Hirschman and Holbrook, 1982). Nevertheless, we strived to obtain a more holistic view by controlling our results with a more utilitarian product. However, the question remains as to what kind of effects temporal distance produced by delivery time has on (other) hedonic or utilitarian products. Future research should therefore address the sustainability and boundaries of research regarding different product groups, especially by considering the effects of aesthetics as mentioned above.

In our opinion, the conclusion particularly relevant for future research is the consideration of delivery time's relevance for online shoppers' assessments of other online store elements. Although delivery time is perceived as an important aspect of an online store by the research community (e.g., Ahn et al., 2004; Li et al., 2014), until now there have been studies almost exclusively concerned with its effect as transaction costs. The results of our study demonstrate that its effect goes beyond transaction costs and that it can also influence the process of decision-making to purchase something. From this perspective, several key questions arise. For instance, we exclusively examined the effects of the announced delivery time on the effects of vividness. Nevertheless, it can be assumed that all explicit and implicit information in the online store is processed differently according to the delivery time. In other studies, it has been shown, for instance, that higher levels of distance, which lead to a high-construal level, are more likely to lead to purchase decisions on the basis of the anticipated use of the products (VanEpps et al., 2016). In contrast, smaller distances lead to buying decisions on the basis of costs. Such an examination would result in a deeper understanding of temporal distance and its effects not only for theory but would also be important for the management of omnichannel retailers.

Moreover, prior research on consumer behavior shows differences in terms of behavioral outcomes with respect to demographic variables (e.g., age, gender or culture) (Li and Lo, 2014). Therefore, not only deeper analyses of the impact of shopper demographics but also cross-cultural studies might provide further insights into how the interaction of psychological distance (e.g., how time is interpreted) and vividness should be adjusted according to different international markets.

3.2.5 Appendix

Table 3.2-10. Overview Constructs Essay 2

Constructs (Cronbach's Alpha)	**Items**	**Sources**
Purchase Intention	If you were to buy a chocolate, how interested would you be in purchasing this specific item?	Adapted from Müller (2013)
Mental Imagery (Study 1 α = .75)	It is difficult to imagine the use of the product. - It is easy to imagine the use of the product. It is difficult to visualize the use of the product. - It is easy to visualize the use of the product. It is difficult to picture myself using the product. - It is easy to picture myself using the product.	Adapted from Shiv and Fedorikhin (1999) and Kardes et al. (2006)
Attitude towards the product (Study 1 α = .82)	Very good - Very bad Valuable - Worthless Sensible - Meaningless Beautiful - Ugly Pleasant - Unpleasant	Adapted from Batra/ Ahtola (1991)
Vividness (Study 1 α = .67) (Study 2 α = .82)	comprehensive - detailed lifeless - lively abstract - concrete	Adapted from Krishnamurthy and Sujan (1999)
VVIQ (Mental Imagery Ability) (Study 2 α = .79)	Relatives *The exact contour of face, head, shoulders and body.* *Characteristic poses of head, attitudes of body, etc.* *The precise carriage, length of step, etc., in walking.* *The different colours worn in some familiar clothes.*	Adapted from Marks (1973)

	The front of a shop *The overall appearance of the store from the opposite side of the road.* *A window display including colours, shapes and details of individual items for sale.* *You are near the entrance. The colour, shape and details of the door.* *You enter the store and go to the counter. The counter assistant serves you. Money changes hands.*	
Utilitarian product attitude (Study 2 α = .90)	ineffective - effective not helpful - helpful inexpedient - expedient not necessary - necessary impractical - practical	Adapted from Voss et al. (2003)
Hedonic product attitude (Study 2 α = .91)	not amusing - amusing boring - exciting not attractive - attractive not exciting - exciting not entertaining - entertaining	Adapted from Voss et al. (2003)
Consumption imagery (Study 2 α = .94)	It is difficult to see myself in using/consuming of the product. - It is easy to see myself in using/consuming of the product. I can't put myself in the position of using/consuming the product at all. - I can put myself to a great extent into of using/consuming the product.	Adapted from Phillips (1996)
Ownership imagery (Study 2 α = .97)	I feel like this is my [product]. I feel perceived ownership of the [product]. I feel like I own this [product].	Adapted from Liu, Batra and Wang (2017) and Peck and Shu (2009)
Product involvement (Study 2 α = .92)	unimportant - important irrelevant - relevant meaningless - significant worthless - valuable not required - required boring - interesting not exciting - exciting not appealing - appealing profane - fascinating not involved - involved	Adapted from Zaichkowsky's (1985)

3.3 Is It Human? The Role of Anthropomorphism as a Driver for the Successful Acceptance of Digital Voice Assistants

3.3.1 Introduction

Digital voice assistants, also referred to as conversational agents, are revolutionizing our access to web content and our use of technologies such as smart home devices. In the first three quarters of 2017, more than 17 million smart speakers were delivered worldwide, and another 16 million were delivered during the holiday season (Gibbs, 2018). This development indicates a massive shift in web content usage and reception behavior. Experts estimate that by 2020, half of online searches worldwide will be made by voice (Olson, 2016). Moreover, a study by Capgemini, a global leader in consulting and IT services, revealed that 51% of people questioned are already using this technology (Capgemini, 2018). One possible reason for this success is rooted in consumer behavior: As stated by Tadeusiewicz (2010), spoken language is the most natural and comfortable way to communicate.

Human-computer interaction technology itself is not a new phenomenon; its roots date back to the 1950s and 1960s (Turing, 1950; Weizenbaum, 1966). Although speech recognition technology has been commercially available for years, a major challenge in the past was to accurately decode the acoustic signal emanating from the user, and this issue had limited the technology's possibilities (Hura, 2017). Due to higher computer performance and the ability to analyze large amounts of data, this problem has now become significantly more manageable.

By definition, conversational agents are systems whose purpose is to provide certain services to the user in a manner that is modeled on interpersonal interactions; they are intended to provide the highest level of naturalness and convenience in order to achieve a level of comfort wherein the system is controlled via speech (Hauswald et al., 2015). As they are usually systems of artificial intelligence (AI), conversational agents are also referred to as intelligent personal assistants (IPAs). Thus, an IPA is an application that uses inputs such as the user's voice, images, and contextual information to assist in answering natural language questions as well as making recommendations and performing actions (Hauswald et al., 2015). According to Hayes-Roth (1995), intelligent assistants are characterized by certain skills such as determining actions, solving problems and drawing inferences. However, following the definition of McCarthy et al. (McCarthy et al., 1955), pioneers in the field of artificial intelligence, although the goal of AI is to develop machines that behave as if they have intelligence, it is currently controversial whether voice assistants fit into this category. Conversational agents

cannot imitate human intelligence, as the systems do not produce behavior on their own initiative but rather simulate it based on given patterns. Contrary to this criticism, however, it is argued that voice assistants will feel more and more human to the users over time, to the point where users can no longer recognize the difference between man and machine because the assistants behave in roughly the same interactive paradigm (Cassell et al., 1994).

The focus in the design of speech-based systems is usually on optimizing usability and user experience. The positive user experience can be achieved if the speech recognition technology offers advantages to the users that go beyond conventional text-based interaction in terms of efficiency, and the use of natural language is, in principle, suitable for this purpose (Deng and Huang, 2004). The extent to which interpersonal interactions positively influence the intention to use a technology can be investigated by analyzing the relevance of anthropomorphism. Anthropomorphism is defined as the tendency to attribute human characteristics, motivations, intentions or emotions to the actual or perceived behavior of non-human actors (Epley et al., 2007). Anthropomorphizing of non-human actors stems from two fundamental causes: First, as social beings, humans are in search of interactions with other people. Second, classifying environmental influences helps humans to understand them and keep them under control (Epley et al., 2007; Seeger et al., 2017).

In general, the elements that influence consumers using IPA can be divided into two areas: functional components and phenomena related to the personification of technical devices, so-called anthropomorphism. These factors are assumed to complement relevant determinants in the acceptance of digital voice assistants. However, most literature is concerned with embodied conversational agents (ECA), in which anthropomorphism usually plays a key role (Becker et al., 2007; Fridin and Belokopytov, 2014; Goudey and Bonnin, 2016). The use of natural language in these studies, however, is usually of minor importance compared to the psychic presence of ECAs. Furthermore, many studies related to conversational agents deal with technological aspects of the software (Bellegarda, 2013; Harris, 2005; Hayes-Roth, 1995). Some treatises refer to the effect of personification or the integration of emotions in the design of conversational agents, but without empirically relating these factors to user acceptance (Callejas et al., 2011), or they discuss the topic in the form of an overview (Ferrara et al., 2016). Surprisingly, to the best of our knowledge, no study has yet provided empirical insights into anthropomorphism concerning non-ECAs or adequately addressed management implications to enhance the acceptance of digital voice assistants. In sum, we argue that recent research indicates that interaction with robots or assistants, for instance, is not just a pure interaction with technology (Kopp et al., 2005; Riek et al., 2009). For instance, a recent study shows that vocal interaction

can actually trigger emotions (Horstmann et al., 2018). Hence, there are consequences of adding human characteristics to machines. The results and the questions raised by these studies seem to us sufficient reason to investigate the topic of anthropomorphism in more depth.

Following to the uncanny valley paradox, where humanlike robots are only evaluated as positive to a certain degree (Mori, 1970; 2012), it is interesting to investigate whether this phenomenon can also be related to digital voice assistants. Furthermore, the computers are social actors paradigm (CASA) implies that computers are assigned similar attributes as humans (Nass et al., 1994). Here, we see a gap in the literature: While these elements seem to play a role, to our knowledge no study discusses these central points as research questions: *(1) What is the role of anthropomorphism concerning the behavioral intention to use voice assistants? (2) Which investigated factor of anthropomorphism influences behavioral intentions the most? (3) In general, what are further relevant factors in consumers' behavioral intentions to use this technology?*

To answer these questions, we use central elements of anthropomorphism that might influence the acceptance of digital voice assistants by simultaneously respecting classical drivers of technology acceptance. Hereby, we contribute to a more profound understanding of technology acceptance by respecting anthropomorphism as a novel perceptual dimension for voice assistance in technology. Based on this relatively holistic approach to technology acceptance of voice assistants, we derive implications for further research as well as managerial implications.

3.3.2 Conceptual framework and hypotheses development

Our conceptual framework is based on the assumption that while classical technology acceptance drivers are relevant, drivers of anthropomorphism are also of considerable importance (see Figure 3.3-1). Building on an extended literature review, we believe – based on the CASA paradigm and contrary to the uncanny-valley paradox – that the effect of anthropomorphism, i.e., seeing something as more humanlike, plays an essential role in the acceptance of voice assistants and the intention to use them. Therefore, we compare anthropomorphism factors to classical technology acceptance factors (UTAUT2) to gain a deeper understanding of the importance of humanlike features for behavioral intentions to use a voice assistant.

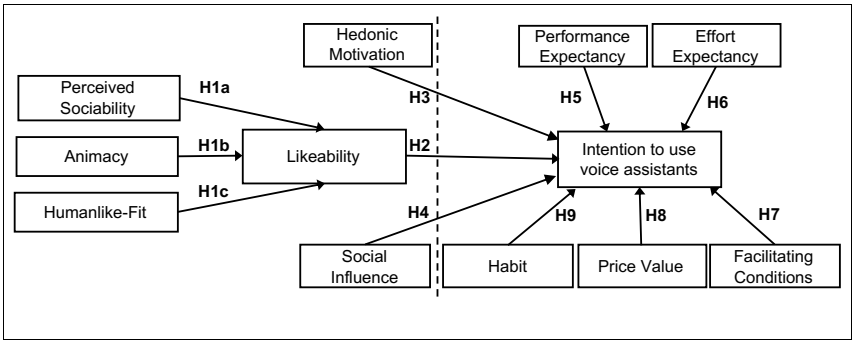

Figure 3.3-1. Conceptual Framework

3.3.3 Impact of the anthropomorphism on digital voice assistants

Voice assistants differ tremendously from technologies that are not based on artificial intelligence, especially in terms of human characteristics (e.g., language). Hence, in dealing with voice assistants, naming and dialogue design do not ignore the personification of technical artifacts. Although the concept of artificial intelligence is controversial (McCarthy et al., 1955), the developers of such systems strive to simulate active artificial intelligence in interactions with voice assistants or to imitate human behavior. Since this type of design intends to generate positive effects on user perception and because of the partly critical view of this practice, we assume that this aspect can exert an influence on user acceptance. That is why we specifically intend to investigate the role of anthropomorphism in this study in the context of the acceptance of voice assistants.

As mentioned, anthropomorphism is defined as the tendency to attribute human characteristics, motivations, intentions or emotions to the actual or perceived behavior of non-human actors (Epley et al., 2007). According to the media equation theory (Reeves and Nass, 1996), consumers apply social norms, based on interactions with humans, when interacting with various technology. Therefore, even in interactions with a voice assistant, people recognize and apply patterns of behavior that they already experience in everyday life to other individuals. Voice assistants are, for example, addressed by their names as a wake-up call, which in turn is an indicator of anthropomorphism. The design of this interaction between man and machine falls into the discipline of Human Computer Interaction (HCI), of which dialogue is a constitutive element (Imaz and Benyon, 2007). Interactive computing is characterized by the possibility of dialogue design between a computer and a machine in the form of a

seamless question-and-answer behavior. This type of design of technical systems is based on natural conversations between people and intends to adapt them as much as possible. There is a clear tendency not only to mimic the structural advantages of human interaction mechanisms but also to adopt other elements of human behavior that are not fundamentally necessary for the functionality of speech assistants but which offer the potential "of the human user to social attributions and to trigger corresponding emotions and behaviors" (Bente et al., 2002).

According to Ortony (2003), the creation of a personality is an important factor in contributing to the consistency of emotional responses. Indications of the positive effect of emotion-based design are provided by, e.g., Becker et al. (2007), who conclude that the integration of emotions increases the credibility, liveliness and personality of an assistant. In terms of affective computing, the potential of voice assistants lies in recognizing users' emotions in order to provide effective assistance (Picard, 2003). Thus, emotions potentially provide an additional channel of interaction (Ball, 2006). Although the development of voice assistants has yet not progressed far enough to establish a connection between the user's personality and the speech assistant's created personality, there is a presumption in the literature that certain matches have a positive effect on the relationship. This similarity-based perspective is also referred to as the similarity-attraction effect, according to which people feel attracted to others who are similar to themselves (Bernier and Scassellati, 2010). According to Nass and Lee, the same effect can also be observed in terms of computer-generated voices, according to which extrovert participants prefer an extroverted voice and introverts prefer an introverted voice (Nass and Lee, 2001).

In general, based on previous reasoning, the most natural or realistic design of humanlike conversational agents is seen as a desirable goal in research (Seeger et al., 2017). However, the thesis of the uncanny valley points out that a humanlike design of robots is not always experienced as beneficial. The uncanny valley describes an effect in which a humanlike design leads to an improvement in users' perceptions but only to a certain degree, to the point where the similarity is so strong that it somehow seems unusual (Mori, 1970; 2012). At this stage, the design of the robot is inconsistent because, on the one hand, it is not mature enough to be congruent with a real human, but on the other hand, it is already too advanced to be clearly classified as robotic. This creates a situation where the robot cannot (immediately) be assigned to a category, so that the Uncanny Valley effect arises.

In most cases, a well-balanced anthropomorphic phenomenon, known as the "persona effect", is believed to promote the credibility and perceived usefulness and entertainment value of an agent and has a positive impact on users' attitudes toward the

system (Lester et al., 1997). It can be assumed that this effect also applies to voice assistants and exerts an influence on the behavioral intent of the users. In addition to the passive attribution of human characteristics to voice assistants, the perceived anthropomorphism may also be reflected in active user actions. This phenomenon is known in research as the CASA paradigm. As a result, people tend to be more responsive to computers than they would to any other person, e.g., by maintaining polite manners (Nass et al., 1994) or paying attention to presenting oneself positively (Sproull et al., 1996). In studies regarding interactions with visual agents, users also reacted with nervousness to overly intense observation by the agent (Brahnam and De Angeli, 2012; Rickenberg and Reeves, 2000). The interpretation of this behavior as a social interaction, however, is rejected by some critics. The users responded only to requirements that arose in the interaction. In this sense, users only stick to interpersonal interaction principles because the situation demands it. They act as if the agent is a person but never truly perceive it as such (Bente et al., 2002). Rather, the users are always aware that they are communicating with or through a medium, since a complete immersion is hard to achieve. From this perspective, the psychological effect cannot be equated with interpersonal interaction (Bente et al., 2002).

However, the psychological effect of anthropomorphizing suggests that the transfer of interaction principles elicits similar associations as in interpersonal interactions. Here, perceived sociability refers to the "perceived ability of the system to perform sociable behavior" (Heerink et al., 2010, p. 364) and previous results suggest that perceived sociability has an impact on the intent of use. Furthermore, it can be assumed that a technical system is perceived more vividly by anthropomorphizing it. Lifelike agents have the potential to emotionally appeal to users (Bartneck et al. 2009). A specific element of lifelikeness is animacy: The latter is based on Piaget's understanding of animation as the ability of something to move on its own or to react to environmental influences (Bartneck et al., 2008). In connection with technical systems, it can also be applied to artificial intelligence.

Previous findings suggest that voice assistants inherently have a degree of human similarity through the use of natural language (Seeger et al., 2017). Hence, language as an element of both human communication and interactive dialogue design leads to a personification of digital voice assistants. Picard (2003) points out, however, that as the system becomes more complex, the complexity of the user's requirements for the system also increases, so that voice assistants, whose design is very human-oriented, should also meet these requirements in order to be perceived positively by users (Picard, 2003). The similarity attraction theory confirms that people are more attracted to others when certain similarities exist (Bernier and Scassellati, 2010). In addition, Osgood and Tannenbaum’s dissonance theory implies that people favor a congruence between

themselves and the object (Osgood and Tannenbaum, 1955), i.e., the voice assistant. Thus, if this fit exists, the assistant is perceived more positively, which in turn should lead to a higher level of likeability.

Based on prior reasoning, likeability is regarded as an appropriate measure to capture the positive effects of anthropomorphism (Monahan, 1998). Likeability represents an affective part of the attitude towards an object. Following the three-components model of attitudes, this dimension contains emotions and ties to a specific object (Rosenberg, 1960). In addition, literature shows that a positive attitude in turn usually influences the behavior of users positively (Ajzen, 1991), concluding that a higher level of likeability leads to a higher level of use or interaction with the given object, i.e., the voice assistant. In addition, we regard animacy, perceived sociability and humanlike fit as appropriate constructs to represent anthropomorphism. There are several characteristics that might influence, for instance, perceived animacy (e.g., agreeableness, humanlike appearance or volition) (Bartneck et al., 2007; Nigam and Klahr, 2000; Riek et al., 2009). However, not all these cues are necessary for a general perception of animacy. In addition, the so-called fit is an important influencing factor of "interpersonal" acceptance (e.g., celebrity endorsement) (Fleck et al., 2012). If humanlike elements are perceived in the context of voice assistants, a perceived harmony of two objects (here assistant and user) should positively affect behavioral intentions because of a positive effect an attitudinal evaluation (Ajzen, 1991; Osgood and Tannenbaum, 1955). In summary, we argue that by using these three variables, we are able to identify, through a more holistic approach, the impact of humanlike variables on the intention to use a voice assistant. Based on this reasoning, we hypothesize the following:

***H1**: Humanlike characteristics will positively influence the likeability of voice assistants:*

(a) The higher the perceived sociability of a voice assistant is, the higher its likeability.
(b) The higher the perceived animacy of a voice assistant is, the higher its likeability.
(c) The higher the perceived human-like fit of a voice assistant is, the higher its likeability.

***H2**: Likeability has a positive impact on users' intention to use a voice assistant.*

3.3.4 Technological acceptance drivers for digital voice assistants

Nevertheless, when researching the acceptance of digital voice assistants, it is necessary to take into account the results of technology acceptance research of the last decades

and to consider well-established drivers of technology acceptance. Here, a variety of theoretical models for explaining technology acceptance and usage have been developed. One of the most established approaches in this context is Venkatesh et al.'s (2012) work, which builds on established theories of technology acceptance and introduces a more comprehensive model, the so-called UTAUT2. As our main interest is studying the role of anthropomorphism, but and we aim to provide a holistic view of voice assistant acceptance, we additionally include the well-established drivers of technology acceptance in our model by adopting these determinants to the context of digital voice assistant adoption.

Following this approach, we regard hedonic motivation as relevant to the actual usage of voice assistants. For example, hedonic elements result when users ask various questions of the voice assistant, expecting to get an entertaining answer. Here, literature in information systems has shown that such elements have a positive impact on technology acceptance because of perceived enjoyment (Thong et al. 2006). In practice, voice assistants often offer a number of such 'fun' features, e.g., telling fun facts or playing mini games, which is also reflected in the development of diverse "skills" (Amazon, 2019). Moreover, hedonic motivation as a determinant has also been previously observed in general as a relevant driver of consumer behavioral intention in technology research (Alalwan et al., 2017; Raman and Don, 2013).

Previous research has demonstrated an increased level of entertainment when information is conveyed through a conversational agent, and this entertainment can be attributed to the mere presence of the agent (Fridin and Belokopytov, 2014). People who enjoy using a technology thus seem to tend to use that technology more frequently and more intensely than others (Davis et al., 1992). We propose:

H3: *The higher users' hedonic motivation is, the higher is their intention to use a voice assistant.*

Furthermore, previous research implies that social influence is relevant in technology adoption. Social influence refers to "the degree to which an individual perceives that important others believe" that a new technology should be used (Venkatesh et al., 2003, p. 451) and therefore, that the behavior of individuals is influenced by others because they indirectly feel pressured to fulfill the expectations that are directed at them (Festinger, 1959). By adapting one's own behavior, the individual intends to establish conformity with his reference group (peer group). Depending on the opinion of the peer group, the action taken may consist of the acceptance or rejection of a particular behavior (Barth and de Jong, 2017). Hence, we hypothesize the following:

H4*: Social influence will positively influence users' intention to use a voice assistant.*

In numerous technology acceptance studies, extrinsic motivation underlying usage is regarded as an important factor (Moon and Kim, 2001). Extrinsic motivation exists when an act is performed to achieve a benefit that is not inherent in the action itself, i.e., mediated outside of the person, whereas intrinsic motivation rewards are mediated within the person, i.e., in the enjoyment of the act itself (Deci, 1972). From this perspective, performance expectancy reflects the degree of extrinsic motivation or the expected outcome of use (Kim et al., 2007; Venkatesh, 1999) . A large number of technology acceptance studies have shown that performance expectancy exerts a significant influence on behavioral intention (Fridin and Belokopytov, 2014; Venkatesh et al., 2003; 2012). As voice assistants often follow a functional orientation, we suppose that this effect is also relevant for this technology. Hence, we hypothesize the following:

H5: *The higher the valuation of performance expectancy is, the higher is the users' intention to use a voice assistant.*

With the use of technical systems in general and voice assistants in particular, it is crucial for acceptance that the operation is easy for users. Accordingly, technology acceptance research has shown that the higher the ease of use is, the higher is the intention to use a new technology (Venkatesh et al., 2012). In addition, previous studies have shown that trust in one's own abilities in dealing with technical systems has a direct influence on the intention to use them (Fridin and Belokopytov, 2014; Venkatesh et al., 2012). In terms of voice assistants, the particular significance of the expected efforts as driver lies in the fact that language, as an interaction medium, relies above all on the simplicity and intuitive usability of the system. Hence, the following can be assumed:

H6: *The higher the perceived ease of use is, the higher is the users' intention to use a voice assistant.*

Facilitating conditions refer to the resources and support required – from the consumer's perspective – to use the technology (Venkatesh et al., 2003; 2012). Consumers who have access to facilitating resources are more likely to use the technology (Venkatesh et al., 2012). As an example, regarding the use of mobile Internet, Venkatesh et al. (2012) mention possible speed advantages that could arise from the nature of a smartphone, thus impacting an embedded voice assistant such as Siri or Google Assistant. Even though other studies produced contradictory results and facilitating conditions could not be confirmed as strong predictors of technology adoption in all previous studies (e.g., Rana et al., 2012), we propose:

H7*: The higher the perceived facilitating conditions are, the higher is the users' intention to use a voice assistant.*

Willingness to pay and thus intention to adopt voice assistants, however, depends on whether the price is perceived as acceptable in relation to the expected benefit. The value for the money is therefore positive in cases where the benefits of using the technology outweigh the consumer's perception of the monetary cost (Venkatesh et al., 2012). General technology acceptance research has shown that price value has a positive impact on intentions to adopt new technologies (Xu, 2014; Yang, 2013). Hence, we hypothesize:

***H8**: The higher the perceived price value of voice assistants is, the higher is the users' intention to use a voice assistant.*

Finally, while a one-off or irregular use cannot be regarded as a habitual use of voice assistants, with more intense engagement, use can shift to habitualized behavior. For technology acceptance research, it is important that habitual behavior produces a strong intention to use the technology in the future. Various studies confirm habits' positive effects on behavioral intention and tendencies to adopt new technologies (Lewis et al., 2013; Wong et al., 2014). Thus, we assume:

***H9**: Habit has a positive effect on users' intention to use a voice assistant.*

3.3.5 Method

To test our hypotheses, we performed a quantitative online survey. Beforehand, we conducted a pretest to ensure the comprehensibility of the questionnaire. Participants (N = 32, M_{age} = 26.27, SD = 11.72, 53.20% women, 56.3% undergraduates) were asked to answer the questionnaire and give feedback regarding intelligibility afterwards. Based on this feedback, minor changes have been made to the wording of the individual questions.

In our main study, in order to ensure that the participants had previous experience with voice assistants, i.e., on a smartphone or general smart device, we asked how familiar they were with voice assistants, how often they used them or watched someone using this technology as well as with which assistants they used (Siri, Alexa, Google Assistant, Cortana, Bixby or others). Participants with no experience at all were excluded from the study, as the study was designed to only include people who have already come into contact with the use of voice assistants. In total, 283 participants (M_{age} = 32.90, SD = 12.90, 47.1% female, 44.5% undergraduates) were randomly acquired online via links sent by university newsletters, distributed in social media channels and posted in relevant online groups such as reddit, which deal with technology topics. This distribution can be interpreted as appropriate, since a majority of early adopters (37%) and early mainstream adopters (39%) of such technologies fall into the age category of 25-45 years (Kinsella, 2018). In addition, the largest category of consumers who use

digital voice assistants generally falls into the age bracket of 33–45 years (Capgemini, 2018).

Our operationalization of the measures is based on well-established scales of current literature. All scales are presented in the appendix (see Table 3.3-2). To evaluate the phenomenon of anthropomorphism, perceived sociability (4 items, e.g., “I feel the voice assistant understands me.”, α = .86) was measured based on a scale by Heerink et al. (2010). Animacy was measured using semantic differentials, via 5 items, e.g., how "machine-like" or "humanlike" the voice assistant is (α = .85) (Bartneck et al., 2008). Likeability (5 items, e.g., “dislike” – “like”, α = .90) was measured based on the scale of Monahan (1998). In addition, humanlike fit between the assistant and the user was examined in terms of a perceived human similarity of the speech (5 items, e.g., “similar” – “dissimilar”, α = .90) (Becker-Olsen et al., 2006). Perceived sociability was measured via a 7-point Likert scale, whereas animacy, humanlike fit and likeability were collected using 7-point semantic differentials.

Scales for performance expectancy (3 items, e.g., “I find voice assistants useful in my daily life.”, α = .93), effort expectancy (4 items, e.g., “Learning how to use voice assistants is easy for me.”, α = .89), social influence (3 items, e.g., “People who influence my behavior think that I should use voice assistants”, α = .95), facilitating conditions (4 items, e.g., “I have the resources necessary to use voice assistants.”, α = .85) and the intention to use a voice assistant (3 items, e.g., “I plan to use voice assistants frequently.”, α = .94) were based on the UTAUT model by Venkatesh et al. (Venkatesh et al., 2003). The scale for price value (3 items, e.g., “Voice assistants are good value for the money.”, α = .89) was adopted from Venkatesh et al. (2012). Since the survey also refers to voice assistants on smart phones, which are already pre-installed as additional functions, the assessment of the price level for those using voice assistants exclusively via smart phones has been shown to be problematic. Therefore, the option "Do not know" was added. The construct habit (4 items, e.g., “The use of voice assistants has become a habit for me”, α = .80) was operationalized by using a scale introduced by Limayem and Hirt (2003). The scale for hedonic motivation (3 items, e.g., “Using voice assistants is enjoyable.”, α = .89) was based on the work of Kim et al. (2005). All technology acceptance items were measured using a 7-point Likert scale (1 = totally disagree, 7 = totally agree). For a detailed overview in regard to the measures used in this essay, see appendix Table 3.3-2.

3.3.6 Results

To test the proposed hypotheses, we conducted structural equation modeling using SmartPLS (PLS-SEM). We used PLS because our research objective is prediction and theory extension, as we mainly focus on confirming an established model with slight changes. This more likely to be achieved by using a PLS method than by covariance-based methods (Hair et al., 2014).

Results of PLS-SEM are presented in Table 3.3-1. The R-squared (adjusted R-squared, Q^2) of the dependent variables reports a high value of .793 (.787, .630) for "intention to use a voice assistant" and midsized value .394 (.387, .223) for "likeability." In addition, variance inflation factors (VIF) were tested; all were below 4.0 and thus below the recommended threshold of 10 (Hair et al., 2014). Hence, we conclude that multicollinearity is not a problem with regard to our data. In addition, for all measures, the average variance extracted (AVE) was above the cutoff value of .5 (Bagozzi and Yi, 1988).

Table 3.3-1. Results of PLS-SEM

	Stand. Coef.	**T-Statistic**	**VIF**
H1a: Perceived Sociability → Likeability	.213***	3.625	1.623
H1b: Animacy → Likeability	.279***	5.011	1.544
H1c: Humanlike-Fit →Likeability	.325***	5.490	1.138
H2: Likeability → Intention to use a voice assistant	.142***	3.502	1.978
H3: Hedonic Motivation → Intention to use a voice assistant	.248***	5.576	2.510
H4: Social Influence → Intention to use a voice assistant	-.007^{ns}	.0199	1.368
H5: Performance Expectancy → Intention to use a voice assistant	.317***	4.993	3.701
H6: Effort Expectancy → Intention to use a voice assistant	-.004^{ns}	0.129	1.388
H7: Facilitating Conditions → Intention to use a voice assistant	-.038^{ns}	1.086	1.469
H8: Price Value → Intention to use a voice assistant	.027^{ns}	0.767	1.604
H9: Habit → Intention to use a voice assistant	.331***	6.803	2.498

Note: *N = 283, PLS algorithm: maximum iterations = 300; bootstrapping procedure: cases = 283; Samples = 5,000; *significant at p < .05, **significant at p < .01, ***significant at p < .001.*

With regard to discriminant validity, our results show that no construct shares more variance with its measures than it does with other constructs in the model. For all constructs, AVE is higher than squared intercorrelations of the construct with any other construct in the model (Fornell and Larcker, 1981), and we can thus confirm discriminant validity (see appendix Table 3.3-3).

With regard to our hypotheses, if the interaction with the voice assistant is seen as more pleasant, likeability increases. Thus, we can confirm H1a. Moreover, if a voice assistant is perceived as active and lively, it will be evaluated more positively, thus confirming H1b. Furthermore, we can confirm the positive impact on likeability of a perceived humanlike fit between the assistant and the actual user. The more similar and fitting the assistant is, the more it affects the user, and the higher is the likelihood that the user will like it. Thus, we can confirm H1c. Moreover, the impact of likeability on users' intention to use a voice assistant is highly significant and positive. Therefore, it can be postulated that a positive impression of the voice assistant has a positive effect on the use intention. Thus, H2 can be confirmed.

According to the CASA paradigm, users transfer human interactions and attributes to voice assistants, and the logical consequence is that personification is important, as confirmed in this study. The results reveal that these traits have a positive impact on how digital voice assistants are perceived. As a result, better perception leads to a greater likelihood of use, which in turn influences users' intention to use the technology. In summary, anthropomorphism plays a significant role and should be considered by companies as an important influential factor and design element of digital assistants. In addition, these results highlight some future research opportunities, such as further research on the interaction with speech-based technology.

Although voice assistants are used to obtain information or facilitate task completion, our results show that they are also more likely to be considered if interacting with them is fun (Suzuki et al., 1998), which confirms H3. If the users' interaction is enjoyable and the users perceive pleasure while interacting with the assistants, the usage intention increases. However, in contrast to our presumption, and despite previous studies, we cannot confirm H4 (Barth and de Jong, 2017; Becker et al., 2007; Festinger, 1959; Venkatesh et al., 2012). Instead, our results rather suggest that voice assistants could be interpreted as second-order products and as a part of a larger ecosystem. By contrast, mobile phones or services (e.g., Amazon) are first-order products. Thus, users need a specific phone enabled to use a specific voice assistant (Rochet and Tirole, 2003). Hence, the social influence might affect the actual system (e.g., someone recommends an Android phone), but not the actual intention to use a specific voice assistant. The

choice of the latter is preordained by the system and thus not directly affected by social influence.

Furthermore, our results show that not all factors of classical technology acceptance hold true for voice assistants. Performance expectancy shows highly significant influences on users' intentions to use a voice assistant. If the voice assistant is able to adequately fulfill its actual function, which is based on the utilitarian benefit, then it will positively influence the intention to use it. This effect probably occurs because the satisfactory feeling that comes with the achievement of the goals of use can reach high levels of intensity, which confirms H5.

Surprisingly, however, H6 is not supported, as we were unable to confirm a connection between effort expectancy and behavioral intentions (Davis, 1989). Unlike technologies that were analyzed in previous studies (Venkatesh et al., 2012), voice assistants might be more robust to negative effects of user-perceived errors. If voice assistants are consciously seen as a developing technology, this awareness could generally trigger a higher acceptance. Thus, some users rate the effort as low and some, depending on their common usage situation, as high. Both facts could lead to this unexpected result and to the lack of a clear significant effect direction in our data.

In addition, confirming Rana et al.'s (2012) results that facilitating conditions are not the strongest predictor for the behavioral intention, also in our data, they do not perform a significant influence on the intention to use a voice assistant. Hence, H7 is not supported. One explanation might be that contrary to other technologies (e.g., mobile payment), no obvious counterparts (e.g., for mobile payments, an NFC terminal) are needed to use the technology. Therefore, users do not regard those "resources" as critical.

Moreover, we cannot observe a positive effect of price value on behavioral intention in our data. Hence, H8 cannot be confirmed. Our results thus differ from Xu (2014) as well as Yang (2013). One explanation might be that voice assistants are now integrated in smartphones, and thus, it might be difficult to determine the pure price of the voice assistant. This could be interpreted as a part of technology (e.g., gadget) but not as a cost-related part itself. Hence, there might be a difference between the perception of the actual costs of the assistant and the costs of the carrier technology. The latter is interesting because there are standalone devices, e.g., smart speakers, where the only purpose is to offer an interface with the assistant.

Finally, hypothesis H9 can be supported. Also in our study and thus in line with results from previous studies, the positive effect of habit on users' intention to use a voice assistant also holds in our data (Lewis et al., 2013; Wong et al., 2014). Users with habitualized behavior tend not only to evaluate new successor products but also to adapt

them out of habit (Limayem and Hirt, 2003), which is an important finding, especially for companies. The aim should be that users see the voice assistant as indispensable in everyday life.

3.3.7 General Discussion and Implications

Summary of findings

The main purpose of the present study was to investigate anthropomorphism in the context of digital voice assistants and compare these drivers to classical technology acceptance drivers (Venkatesh et al., 2012). The results confirm most of the predicted hypotheses and shown the role of human characteristics in actual user behavior in the context of voice assistants. Regarding our research questions, our results clearly show that (1) anthropomorphism in general plays a role in the behavioral intention to use voice assistants and thus should be considered. Here, (2) a humanlike fit has the highest impact on likeability. By addressing a gap in the literature, we show that a "conservative" view of technology is not sufficient for voice assistants, since human characteristics play a considerable role in this type of technology. Nonetheless, (3) further relevant drivers are performance expectancy, hedonic motivation and habit.

Unlike the Uncanny Valley paradox, we cannot confirm that humanlike characteristics are evaluated negatively. By contrast, our results support the importance of anthropomorphism for actual behavioral intention to use voice assistants.

Implications for technology adoption

In addition to these new findings, the study has shown that price value and effort expectancy do not influence the intention to use voice assistants. With regard to price value, it could be that smart speakers are currently affordable and therefore acquisition costs are not so important at the moment. The follow-up costs for other devices could be rated higher. In addition, as already discussed most smartphones have already integrated voice assistants and therefore a differentiated assessment of the price per se is difficult. Thus, a further consideration of this relationship would be interesting and could contribute by differentiating perception between stationary devices and voice assistants in mobile phones. Surprisingly, social influence and facilitating conditions did not perform significant impacts. The reason for this could be that integrated voice assistants need no further technical counterparts since they are part of, e.g., mobile phones. Even a stand-alone voice assistant only needs an Internet connection, which is now standard or, at least, is not seen as a critical resource. With regard to social influence, we see the necessary device as a first-order product (for instance, mobile phone and iOS vs. Android) (Rochet and Tirole, 2003) that is influenced by social peers,

i.e., the social influence does not affect the choice of the assistant per se but determines which assistant can be used. A central contribution of this study is that we show that for analyzing acceptance of voice assistants, a more holistic approach regarding technology acceptance is necessary. Thus, drivers for this kind of technology go beyond the classical drivers of the unified theory of acceptance and use of technology and show that a "conservative" view of technology is not sufficient.

Implications for design

Both previous literature and the results of this study confirm that it is reasonable for companies to regard voice assistants as more than a utilitarian object in terms of usefulness. Developers should continue to make sure that interacting with voice assistants is fun and enjoyable. Therefore, we recommend enhancing the hedonic character, e.g., with interactive games or small features that will delight even larger groups. These changes could enhance the humanity of voice assistants, as humor can be identified as a human trait. Our results have shown that the humanization of voice assistants is a successful driver in terms of usage intention, which supports this argumentation.

We also recommend creating voice assistants in a form that users enjoy communicating with. Forms of courtesy, such as those that exist in conversations between people, can increase likeability, create a positive image and ensure that the assistant is perceived as a pleasant conversation partner, which will ultimately be reflected in a positive intention to use. In addition, we show that the voice assistant is perceived to be more positive if it is more similar to the users and gives a coherent overall picture. We therefore argue that it is important for companies to attribute common positive human traits to the voice assistant and to have them recalled in appropriate situations. For the future, it might be recommendable to develop digital voice assistants that are equipped with different characters and adapts to the appropriate user based on various criteria in order to be perceived as similar or complementary to the user himself.

The fact that voice assistants not only follow human instructions but also understand, learn and adequately respond to them creates a kind of dialogue. Our results suggest that this dialogue between man and machine should be based on natural language and as authentic as possible. In this regard, the results of the study have shown that it is acceptable for certain human characteristics to be attributed to voice assistants.

Implications for management

The present study also offers implications for management and practice. Especially in terms of technical functionality, it is important to emphasize the usefulness of voice assistants. In terms of further networking via the smart home, this field offers great potential for further expanding market shares. Once the voice assistant has been

integrated into everyday life, habitualized behavior can manifest itself, making the assistant indispensable. Such a development might be beneficial for companies, because future generations and related devices can be bought without having to be reevaluated (Limayem et al., 2007; Magotra et al., 2016). Via the impacts of performance expectancy and habit, increasing application usability and customer loyalty are primary goals in helping to increase usage. It can be assumed that as voice assistants offer increasing benefits, a foundation of usage will be created that will favor habitualized usage scenarios.

Implications for research and limitations

The R squared for both variables under survey in our study, i.e., likability and users' intention to use a voice assistant, show that our predictors contribute significantly to the explained variance. Nevertheless, additional factors that are not covered here, such as the importance of being extensible by other devices used in smart home technology, or the convenience of doing things quickly and easily, should be investigated. Here, the context in which voice assistants are used could be examined to see if additional influencing factors need to be considered. Moreover, human characteristics might be interpreted and valued differently depending on the cultural background (House, 2004). Hence, multicultural research should be sought to ensure comparability, as these human factors might be perceived differently. In addition, the features of voice assistants have so far not been available in all markets, which might impact the perceived usefulness. Furthermore, in terms of human characteristics and related perceptions, future research should examine the impact of the voice itself, e.g., whether a male or female voice is more appropriate for particular contexts. Further research about voice assistants' mistakes, such as the misunderstanding of human instruction and the need for more effort to reach a goal, could lead to interesting results in another study concerning effort expectancy. In addition, it would be interesting to differentiate exactly which human qualities are perceived as positive and thus increase usage intention and which attributes have a negative impact. Since, to our knowledge, anthropomorphism has so far received little attention in this context, we believe that we can contribute essential knowledge to the technology acceptance research. For future studies on language-based dialog systems and advanced artificial intelligence of non-ECAs, the UTAUT2 approach should be adapted around the confirmed determinants.

However, our study also has its limitations. First, we only considered persons who are already frequently in contact with digital voice assistants or have at least watched someone consciously using this technology. Thus, first, the implications can be only transferred to people with knowledge of this technology. Users with less knowledge

should be considered in a further study. Second, the sample was conducted among consumers in Germany and contains primarily students. Prior research shows several important differences in personalities with respect to technology adoption (e.g., data privacy). Personality might also impact the perception of humanlike elements and the weightings given to their importance. Thus, further research should address these issues.

3.3.8 Appendix

Table 3.3-2. Overview Constructs Essay 3

Constructs (Cronbach's Alpha)	**Items**	**Factor Loadings**	**Composite Reliability**	**Sources**
Performance Expectancy (PE) (α = .94)	I find digital voice assistants useful in my daily life.	.941	.962	Adapted from Venkatesh et al. (2012)
	Using digital voice assistants helps me accomplish things more quickly.	.957		
	Using digital voice assistants increases my productivity.	.927		
Effort Expectancy (EE) (α = .89)	Learning how to use digital voice assistants is easy for me.	.853	.926	Adapted from Venkatesh et al. (2003)
	My interaction with digital voice assistants is clear and understandable.	.873		
	I find digital voice assistants easy to use.	.837		
	It is easy for me to become skillful at using digital voice assistants.	.918		
Hedonic Motivation (HM) (α = .90)	Using digital voice assistants is fun.	.951	.937	Adapted from Kim et al. (2005)
	Using digital voice assistants is enjoyable.	.922		
	Using digital voice assistants is very entertaining.	.862		
Price Value (PV) (α = .89)	Digital voice assistants are reasonably priced.	.897	.932	Adapted from Venkatesh et al. (2012)
	Digital voice assistants are a good value for the money.	.939		
	At the current price, digital voice assistants provide a good value.	.882		
Habit (HB)	The use of digital voice assistants has become a habit for me.	.905	.871	

(α = .80)	I am addicted to using digital voice assistants.	.880		Adapted from Limayem/Hirt (2003)
	I must use digital voice assistants.	.690		
	Using digital voice assistants has become natural to me.	.678		
Facilitating Conditions (FC) (α = .85)	I have the resources necessary to use digital voice assistants.	.828	.897	Adapted from Venkatesh et al. (2003)
	I have the knowledge necessary to use digital voice assistants.	.850		
	Digital voice assistants are compatible with other technologies I use.	.828		
	I can get help from others when I have difficulties using digital voice assistants.	.805		
Social Influence (SI) (α = .95)	People who are important to me think that I should use digital voice assistants.	.936	.970	Adapted from Venkatesh et al. (2003)
	People who influence my behavior think that I should use digital voice assistants.	.971		
	People whose opinions that I value prefer digital voice assistants.	.963		
Likeability (LK) (α = .89)	Dislike – Like	.812	.921	Adapted from Monahan (1998)
	Unfriendly – Friendly	.815		
	Unkind – Kind	.788		
	Unpleasant – Pleasant	.892		
	Awful - Nice	.872		
Humanlike Fit (FIT) (α = .91)	similar/dissimilar	.751	.928	Adapted from Becker-Olsen (2006)
	consistent/inconsistent	.781		
	complementary/not complementary	.788		
	low fit/high fit	.907		
	makes sense/does not make sense	.846		
	typical/atypical	.881		
Animacy (ANI) (α = .86)	Dead - Alive	.860	.895	Adapted from Bartneck et al. (2008)
	Stagnant – Lively	.819		
	Artificial – Lifelike	.775		
	Inert – Interactive	.756		
	Apathetic - Responsive	.760		

Perceived Sociability (SOC) (α = .86)	I consider digital voice assistants pleasant conversational partners.	.840	.904	Adapted from Heerink et al. (2010)
	I find digital voice assistants pleasant to interact with.	.873		
	I feel digital voice assistants understand me.	.808		
	I think digital voice assistants are nice.	.828		
Behavioral Intention (BI) (α = .94)	I intend to continue using digital voice assistants in the future.	.926	.962	Adapted from Venkatesh et al. (2003)
	I will always try to use digital voice assistants in my daily life.	.950		
	I plan to continue to use digital voice assistants frequently.	.960		

Table 3.3-3. Correlations, Squared Correlations and Average Variance Extracted

	PE	**EE**	**HM**	**PV**	**HB**	**FC**	**SI**	**SOC**	**ANI**	**FIT**	**LK**	**BI**
PE	**.887**	.130	.494	.403	.551	.189	.203	.213	.181	.254	.371	.692
EE	.360**	**.758**	.166	.162	.072	.194	.067	.027	.051	.042	.117	.131
HM	.703**	.408**	**.832**	.285	.268	.199	.181	.210	.137	.247	.387	.531
PV	.635**	.402**	.534**	**.821**	.321	.184	.167	.103	.152	.150	.220	.396
HB	.742**	.268**	.517**	.567**	**.632**	.086	.196	.178	.127	.192	.206	.587
FC	.433**	.441**	.446**	.429**	.293**	**.685**	.090	.078	.125	.069	.172	.148
SI	.450**	.258**	.425**	.410**	.443**	.300**	**.915**	.140	.096	.115	.088	.183
SOC	.461**	.165**	.458**	.321**	.421**	.278**	.373**	**.701**	.328	.104	.209	.176
ANI	.425**	.227**	.370**	.390**	.357**	.353**	.310**	.573**	**.632**	.067	.212	.118
FIT	.504**	.205**	.497**	.387**	.438**	.262**	.339**	.322**	.258**	**.685**	.188	.264
LK	.609**	.342**	.622**	.469**	.454**	.415**	.296**	.457**	.460**	.434**	**.700**	.403
BI	.832**	.362**	.729**	.629**	.766**	.385**	.428**	.420**	.344**	.514**	.635**	**.894**

*Upper Half: Squared Correlations, Lower Half: Correlations, Diagonal: Average Variance Extracted (AVE), * p < .05, ** p < .01, *** p < .001 (two-tailed)*

3.4 Online Complaints in the Eye of the Beholder: Optimal Handling of Consumer Complaints on the Internet

3.4.1 Introduction

A dissatisfied consumer represents potential hazard to a company and its business operations (Cheng et al., 2006). It is generally recognized that effective complaint management can limit this danger (Homburg and Fürst, 2007) and even lead to a so-called service recovery paradox, a situation in which a successful solution of a consumer's problem causes a level of her satisfaction and loyalty to increase even beyond its expected state when no service failure had happened (McCollough et al., 2000). The field of complaint management has been well studied over the years; however, previous research has been focused on the effects of complaint handling on the complainer herself and her attitudes and behavior as a result of direct interaction with the company, i.e. complaint handling encounter. Although, the effects of a complainer driven word-of-mouth (WOM) have also been analyzed (e.g., Chevalier and Mayzlin, 2006; Hennig-Thurau and Walsh, 2004) the research focus resides mainly upon the assessment of the likelihood of a complainer to engage in positive or negative WOM activities.

Today's complaints, however, are often expressed publicly on the internet. Moreover, online complaints may not necessarily be directed to the problem-causing company but take a form of a public report about negative product or service experiences. For example, a person may post their complaint online to warn others against making business with a company or buying a particular product (Hennig-Thurau et al., 2004), something that is known as negative electronic word-of-mouth (NeWOM).

Accordingly, companies recognize that such public complaints bear a high danger potential for their image and/or business operations, since NeWOM is stored nearly forever and can be accessed anywhere at any time by a broad internet audience. Above all, this audience includes prospective customers who search for information about a product or brand with an intention to assess its quality and/or to form their attitudes and preferences prior to making a purchase decision (Hennig-Thurau and Walsh, 2004).

That is, an organizational response to a public complaint on the internet goes beyond complaint handling and satisfaction recovery but also entails additional effects of this response on the attitudes, intentions and behavior of prospective customers who simply observe the conversation of the organization and a customer in a complaint handling setting. These effects, however, have not been sufficiently analyzed in the recent literature.

Consequently, our research aims to narrow this gap and help companies optimize their complaint handling policies on the internet. Our study also provides insights about the impact of different organizational response strategies on an observer's behavior. This makes it possible to formulate a reasonable response to a public complaint in each particular case to mitigate negative effects of a complaint and strengthen positive effects of complaint handling.

3.4.2 Framework

We develop our framework based on the analysis of the literature within two research streams: complaint management and (electronic) WOM. The former research stream specifies various dimensions of organizational response available for handling a customer complaint and aspects of consumer behavior the response can influence (e.g., Collie et al., 2000; Conlon and Murray, 1996; Davidow, 2000; Estelami, 2000; Sparks and McColl-Kennedy, 2001). Our analysis of more that 450 actual public complaint-handling acts confirmed the existence of all of the reaction types mentioned in the "classical" complaint handling literature. No additional reaction types were discovered. Based on these dimensions and the analysis of real-world public complaint handling encounters we derived and formalized eight types of organizational responses. Table 3.4-1 provides an overview of these response types.

Table 3.4-1. Types of organizational response to a public complaint

Type of Response	Description	Type of Response	Description
No response	*Company provides no response*	**Apology**	*Company apologizes to complainer for causing the problem*
Deny fault	*Company denies its responsibility for the problem*	**Redress**	*Company provides redress to a complainer*
Accuse customer	*Company accuses the complainer in causing the problem*	**Apology + redress**	*A combination of apology and redress*
Accuse third-party	*Company accuses third-party, e.g. parcel services, in causing the problem*	**Request of a direct contact**	*Request to a complainer to contact the company directly and, e.g., provide more detailed information on the case in question*

The WOM research stream provides a set of cognitive dimensions that are relevant for evaluation of the observed communication and hence mediate the effects of different response forms on an observer's behavior and attitudes (e.g., Allsop et al., 2007; Cheung et al., 2009; Homburg and Fürst, 2005; Sussman and Siegal, 2003). We argue that the organizational response affects the attitudes and behavior of an observer of a complaint handling communication by means of processing and evaluating this communication by the observer. In other words, the effects of a company's response on the observer are mediated by the perception of the former by the latter. Our research framework that describes these relationships is presented in Figure 3.4-1

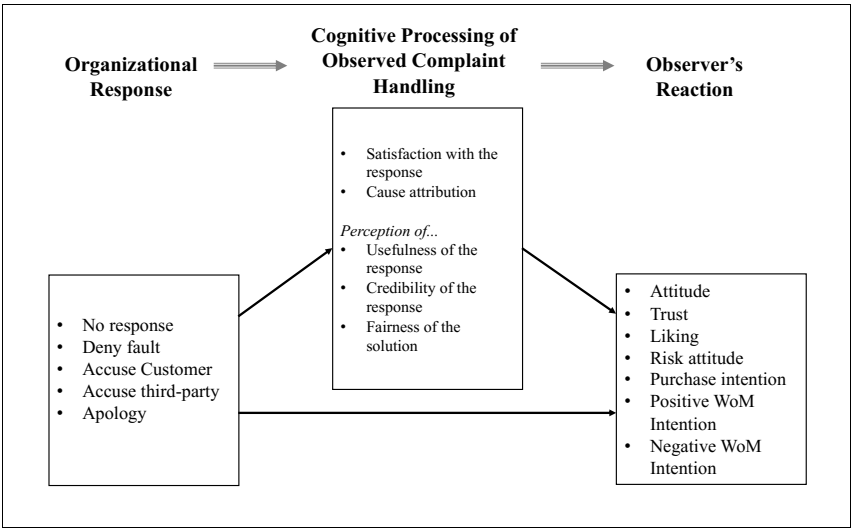

Figure 3.4-1. Organizational responses to public complaints and their impact on behavior of an observer of public complaint handling

It can be briefly noted that these relationships draw on the expectation confirmation theory (e.g., Oliver, 1980; Oliver and DeSarbo, 1988), justice theories (e.g., Bies and Moag, 1987; Messick and Cook, 1984; Thibaut and Walker, 1972), attribution theory (Kelley, 1967), cognitive dissonance theory (Festinger, 1957) and the elaboration likelihood model (Petty and Cacioppo, 1986) as well as the theory of reasoned action by Azjen and Fishbein (1975). For a detailed overview of the entities of our framework, we refer the reader to Davidow (2003) for the model of organizational response and e.g., Cheung, Lee, and Rabjohn (2008), Davidow (2000), and Homburg and Fürst (2005) for the perceptional evaluation of WOM.

3.4.3 Method

To test the effects and relationships provided in our research framework as well as to quantify both the main effects of organizational response and the degree of its mediation by observer's cognitive processing, we conducted a lab experiment. In this experiment, the participants were asked to recall the last time they bought a product in an online shop and to transfer themselves mentally in the following scenario:

"*Imagine that you have already decided to buy the [name of the product] but still do not know which online retailer to choose for making your purchase. For this reason, you search for further information on the internet. Among other things, you encounter a website where other customers discuss an online shop "online-deals.de". You learn that this online retailer offers the product of your interest 20% cheaper than the competition. Also, this online shop guarantees the delivery of a purchase within two working days after order placement. Hence, you read the following customer experience report with interest.*"

At this moment, the participants were randomly assigned to one of the nine experimental treatments. In eight of nine treatments, a public complaint of an anonymous customer about their negative service encounter with "online-deals.de" was presented. This report was followed by a response of the online shop formulated in accordance with one of the eight types of organizational response contained in our research framework (see Table 3.4-1). In the ninth treatment participants were shown a neutral consumer experience report. We included this additional treatment to provide a baseline for comparison of the effects of different organizational response types with a situation when no complaints and/or problems are observed by a prospective customer and, thus, to be able to detect an equivalent for the service recovery paradox at the observers' side.

After reading the experience report and the company's response, the participants completed a questionnaire that measured their behavioral intensions and attitudes towards "online-deals.de" as well as their assessment of the report and the response (see Figure 3.4-1) Other factors that could confound the measurement of the effects, such as product involvement, experience with and attitudes toward online shopping, technology anxiety, persuasibility, risk aversion, and other psychographic characteristics, were been measured. The measurement was performed using well established multi-item scales with a 7-point Likert-scale. For a detailed overview in regard to the measures used in this essay, see appendix Table 3.4-5

In total N = 233 respondents have participated in our study (M_{age}=28.03, SD=10.94, 48.90% women), at least n > 24 in each treatment. More than 60% of our sample are shopping more than once a month online, which ensures knowledge about how to shop online and reviews in regard to products. In addition, across all treatments at least 50%

of the respondents purchased a product online within 30 days of conducting the survey. It can therefore be assumed that this purchase is still mentally present so that respondents could imagine themselves more easily into a purchase situation.

3.4.4 Results and Implications

First of all, it can be shown that it matters how a company responds to a public complaint. That is, the choice of the response type by the company influences both the behavior and attitudes towards the company of the observers of public complaint handling. Table 3.4-2 shows the results of MANOVA conducted for the dimensions of an observer's reaction (dependent variables) to different types of organizational response (independent variable). These results are significant with $F = 1.534$ and Wilk's-$\lambda = .691$ for $p < .05$.

Table 3.4-2. Main effects of organizational response on observer's behavior

Dimensions of observer's behavior	MS	F-Value	η^2
Attitude	8.295	5.182***	0.152
Trust	7.285	5.052***	0.149
Liking	7.316	4.268***	0.129
Risk attitude	3.384	1.926*	0.063
Purchase intention	8.947	3.869**	0.118
Positive WOM intention	8.816	3.380**	0.105
Negative WOM intention	3.551	1.181 n.s.	0.039

(.05 < p < 0.1; ** p < .01; *** p < .001; n. s. = not significant)*

We can see that prospective customers are rather careful in making definite negative judgments based on a single observation of public complaint handling. Their assessment of risk and their intention to spread negative WOM do not differ substantially between various response types. This indicates that customers tend to give a company a "second chance" before making a decision to actively spread the "bad news". Nevertheless, the same observation of a public complaint handling encounter can make them cautious, since it strongly impacts prospective customer's attitudes towards the company, including their purchase intentions, trust in, and sympathy to the company. These results hint to a contemplation that although the attitudes and the intentions are strongly impacted by the company's choice of complaint response, the damage of the first

encounter with that response remains rather limited to the recipient and will not be (at least for the first time) multiplied by them.

A closer look to Table 3.4-3 that presents mean values of correspondent variables across different types of organizational response confirms this contemplation. Furthermore, they allow us to build a rank-order of different reaction types with respect to their potential to mitigate and even recover the negative effects of a public complaint.

Table 3.4-3. Mean values of behavioral variables across different types of organizational response

Dimensions of observer's behavior	**Apology + redress**	**Positive reviews**	**Redress**	**Deny fault**	**Accuse third-party**	**Apology**	**Accuse customer**	**No response**	**Request of a direct contact**
Overall rank order	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Attitude	5.68 (.81)	5.30 (1.04)	4.81 (1.23)	4.83 (.89)	4.39 (1.50)	4.67 (1.31)	4.53 (1.48)	3.99 (.99)	3.81 (1.38)
Trust	5.45 (.81)	4.53 (1.36)	4.59 (1.09)	4.32 (.74)	4.10 (1.33)	4.21 (1.31)	4.32 (1.59)	-	3.73 (1.23)
Liking	5.63 (.62)	4.97 (1.32)	4.42 (1.22)	4.52 (1.01)	4.36 (1.59)	4.43 (1.63)	4.43 (1.51)	4.18 (1.08)	3.84 (1.21)
Risk attitude	5.22 (.94)	4.50 (1.36)	4.42 (1.22)	4.59 (1.18)	4.67 (1.49)	4.44 (1.49)	4.19 (1.48)	3.90 (.96)	4.14 (1.25)
Purchase intention	5.71 (1.04)	4.85 (1.31)	4.78 (1.29)	4.53 (1.51)	4.58 (1.89)	4.56 (1.47)	4.40 (1.49)	4.07 (1.09)	3.72 (1.66)
Positive WOM intention	4.53 (1.17)	3.75 (1.71)	4.11 (1.29)	3.31 (1.63)	3.44 (1.86)	3.09 (1.73)	3.22 (1.48)	3.15 (1.39)	2.88 (1.69)

Note: *Presented in the descending order of the potential to mitigate negative effects; values in parentheses are standard deviations; columns with a grey background represent the upper and lower benchmarks; only significant effects are considered.*

First of all, it can be seen that the combination of an apology and redress evokes the most positive response in the behavior and attitudes of the observer of public complain handling. Remarkably, the effects are stronger than those in the case when the observer didn't observe any negative information about the company. This fact is interesting from two perspectives. First, it is very similar to the service recovery paradox that is known from complaint management. Second, in the field of complaint management this combination of organizational response dimensions is also known to bear the most

positive behavioral response of a complainer (Davidow, 2003). Hence, the benefits of a company from this response type are twofold. This response both recovers a complainer's negative experience and induces the most positive response in the eye of the beholder of a public complaint handling act. In the public domain it becomes even more important, since it is known that satisfied customers do not tend to spread positive WOM about the company. In this case, an observation of successful complaint handling takes the role of the positive WOM and compensates the latter effect.

What's interesting, however, is that being used separately from each other, the redress and apology response strategies lie relatively far apart from each other with respect to rank order (positions 3 and 6 correspondingly). T-tests reveal significant differences for attitude ($t(46)=2.918$, $p=.006$) and trust towards the company ($t(46)=3.095$, $p=.003$), as well as in case of purchase intention ($t(46)=2.622$, $p=.012$) and risk attitude ($t(46)=4.305$, $p < .001$). In other words, observers value an offer of a monetary compensation more than an apology, even though they do not personally benefit from it. A possible explanation for this circumstance can be that by reading a company's responses to public complaints, observers try to evaluate their future risks in making business with the company, i.e., to asses the level of expected loss and/or compensation (both moral and monetary) in case of the company's failure. Thus, observers feel themselves more secure with respect to future relationship with the company when the company demonstrates its readiness to repair the failure by offering monetary compensation.

Based on the above, it seems reasonable for companies to offer monetary compensation when handling justified public complaints. However, monetary compensation always means costs for a company. Offering money in response to every complaint doesn't seem to be a preferable complaint handling strategy. Moreover, it is possible that customers will uncover the reasoning underlying such a strategy and will try to misuse it to their own advantage. Nevertheless, from practical perspective, it can be argued that this strategy is at least worth consideration. Hence, we also encourage researchers to investigate into how often a company should offer monetary compensation in response to public complaints and/or what complaints deserve monetary compensation from an economic point of view.

Other response strategies that companies can follow to counteract negative consequences of public complaints are accusing a third-party and denial of the fault (rank-orders 5 and 4). In our experiment, these strategies produce stronger overall recovery effects on observer's behavior and attitudes than an apology. This observation might lead to a conclusion that when a company doesn't want to provide a redress, the best strategy might be to deny the existence of the problem. At this point we have to

warn our reader not to make this mistake, since online communication isn't restricted to a single request-response move. Companies should be aware that a customer can reply to their denial presenting her own point of view to the problem and the tides can turn against the denier caught in a lie. Hence, a denial of the problem and accusation of a third-party can only be efficient in recovering negative effects of public complaint handling when the company indeed is not responsible for the problem and can prove its point of view.

Another very interesting observation is that the effect of a direct contact request as a response to a public complaint (e.g., to provide additional details on a problem) is even worse than not responding to a public complaint at all. Here the outcomes for a complainer and an observer seem to differ again essentially. The complainer will probably have her problem solved. The observer, however, at this point seems to be intrigued with the problem resolution. The absence of additional information about the resolution seems to cause internal cognitive tension in the observer. This unresolved tension seems to induce disaffection in the observer that, in turn, leads to even worse attitudes and behavioral intentions. Although these assertions are subject to tests during our upcoming study, at this point we argue that it makes sense for companies to provide a public feedback on a complainer's problem resolution to ensure the redress in the eye of the beholder. Here, we appeal especially to telecommunication companies that showed a dominant tendency to employ "direct contact request" strategy in our preliminary study.

Nonetheless, to get a more profound knowledge regarding the processing of the companies answer by the observer, we conducted multiple analyses of covariance (ANCOVA) for mediation analyses. The latter has been shown as reliable method for experimental designs to investigate potential mediations effects of given variables (Gorn et al., 2004; Hayes and Preacher, 2013; Pham and Muthukrishnan, 2002; Song and Zinkhan, 2008). Here, the experimental conditions are included as factor (i.e., independent variable), the behavioral and attitudinal outcomes as dependent variables and the potential mediators are gradually included as covariates. The decrease of mean square of the main effect after including the covariate indicates the mediation effect, as long as the mediator variable has a significant effect on the dependent variable (Baron and Kenny, 1986; Pham and Muthukrishnan, 2002).

First, following Baron and Kennys' causal steps (1986) we first investigated for direct effects of the experimental conditions on the potential mediators. As expected, results indicate a potential mediation of the satisfaction with the answer based on the expectations ($F(6,173)=4.317$, $p=.001$), the perceived fairness of the complaint answer ($F_{interactional}(6,173)=4.223$, $p=.001$; $F_{procedural}(6,173)=4.215$, $p=.001$; $F_{distributive}(6,173)=2.187$, $p=.046$), the perceived credibility ($F(6,173)=4.041$, $p=.001$) as well as the

usefulness of the answer (F(6,173)=5.548, p<.001) and finally, the cause attribution (F(6,173)=2.874, p=.011). Second, we included each mediator variable continually as covariate and calculated the decrease in mean square of the main effect (see table 1 for MS). The percentage in decrease is depicted in Table 3.4-4.

Table 3.4-4. Mediating Effects

Covariate	Attitude	Trust	Liking	Risk attitude	Purchase intention	Positive WOM intention	Average Decrease
Satisfaction	68,15%	75,54%	73,01%‡	53,91%‡	59,75%‡	86,47%	**69,47%**
Interactional Fairness	51,62%	57,10%	52,22%	28,86%‡	41,78%	44,24%	**45,97%**
Procedural Fairness	34,73%	28,94%	26,73%	19,38%‡	11,61%	31,11%	**25,42%**
Distributive Fairness	62,05%	77,31%	66,45%	74,91%‡	72,58%‡	76,50%‡	**71,63%**
Credibility	76,68%‡	80,67%‡	80,05%	65,36%‡	82,51%‡	91,18%‡	**79,41%**
Usefulness	52,13%	49,88%	51,76%	12,21%	16,96%	71,30%	**42,37%**
Cause attribution	22,13%	n.s.	18,30%	n.s.	14,21%	n.s.	**18,21%**

Note: *Decrease in mean square of the dependent variable due to the covariate, ‡ indicates a vanishing main effect (p >. 05)*

Results indicate strong mediating effects of the satisfaction with the answer based on expectations, the distributive fairness (e.g., monetary outcome) and especially, the overall credibility. In these cases, results show full mediation effects for several variables under review. However, the remaining variables at least show partial mediating effects. As predicted, the processing of the answer based on expectations (i.e., how the company should answer) and a corresponding satisfaction if these expectations are fulfilled is an important driver, not only for the complainant (de Matos et al., 2007), but also for the silent observer of the company's answer. Moreover, the credibility of the company's answer as information source is of particular importance, which also have been observed in case of the complainant (e.g., Breitsohl et al., 2010; Cheung et al., 2009; Sternthal et al., 1978). Hence, companies should be aware of offering meaningful, yet, realistic offerings and explanations regarding the actual complaint. Surprisingly, the perception of the distributive fairness is more important for the observer than the interactional fairness, which has been shown as more powerful in case

of the complaint (e.g., Blodgett et al., 1997). Still, it seems comprehensive that the complainant is more prone to the actual handling (e.g., a more sensitive treatment) because of vulnerability due to the service failure (Davidow, 2003), whereas consumers seeking for additional information prior to a purchase want to reduce their risk, so that the actual "outcome" in case of service failure seems more important (Hennig-Thurau and Walsh, 2004). Moreover, the actual cause attribution seems to be less important in comparison to the complainant (Laczniak et al., 2001). Here, one might argue that again regarding a risk reduction the actual cause does not matter, because the evaluation of the outcome is more important to get a glimpse of what would happen in an own case of service failure. The latter is moreover supported by the fact, that the actual risk attitude is not mediated by the cause attribution. Nevertheless, this places even greater emphasis on what the company responds to the complaint, regardless of the reason for the complaint.

3.4.5 Conclusion

Summary of findings

The results of our study show that the way a company responds to a public complaint is important. It seems reasonable for companies to follow an apology-and-redress response strategy. However, if this approach is not feasible for a company, it should apply an accuse strategy only when it can prove that it is not responsible for a complainer's problem. Furthermore, the results indicate that a direct contact request should always be followed by a feedback on the problem's resolution. Otherwise, companies risk losing more than they can gain by simply not answering a public complaint, or even accusing a customer.

Nonetheless, results also offer first implications regarding the overall processing of complaint management by information seeking consumers. Here, results show that some of the already known processes also hold true for the silent observer. In particular, the satisfaction with the response and the credibility are important drivers to explain the cognitive processing. However, in contrast to the complainant, results indicate a higher importance of the outcome evaluation on comparison to the interactional judgement. The latter might affect beneficial strategies of companies to address both, the complaint and the observer, with one powerful answer.

Limitations and Future Research

Although insightful, the present experiment has its limitations and raises questions for further research.

First of all, the size of the sample that underlies the conclusions of the current study is relatively small. This circumstance may have prevented the discovery and/or substantiation of some of the effects that take place in the business practice besides those that were discussed above. It is a well-known statistical property that bigger sample sizes tend to increase the measure of significance of the results derived from them (e.g.,

Cohen, 2013). Though this property has to be treated with caution, it still can be argued that increasing the sample size has potentials to increase the knowledge resulting from this study. So, for example, a bigger sample size could allow us to make statements about the intentions of observers to spread negative WOM based on the observation of public complaint handling acts. Our current sample, however, doesn't allow us to make such statements with the required confidence. With more data coming in, we hope to learn more details about the nuances of public complaint handling.

Second, in this study (that we still consider to be a preliminary study) subjects were exposed to a rather simple scenario in that they had to form their opinion about a company based on an observation of a single complaint-handling act. It can be argued that such a scenario is too artificial, because in the real-world people tend to build their opinion based on several feedbacks and/or several feedback sources, rather than relying on a single public complaint-handling encounter. Future research should address this issue, i.e., it should simulate natural search for customer reports about a company's performance in more complex situations in which the searchers face various opinions that differ both in direction and valance, some of them contradictory, and belong to different customers (like it can be seen, e.g., on amazon.com).

Further, our study showed that offering monetary compensation produces stronger positive effects in observers than an apology does. However, offering money for every complaint is a costly strategy. Hence, to enable businesses to make optimal use of public offers of monetary compensation, further research should clarify when (i.e., in which situations) and how often such compensation should be offered as well as how high such compensations should be.

Last but not least, the generalizability of this study's results is hindered by the notion of cultural differences and legal liability, i.e., people may have concerns about being legally accountable for saying that a company has done something wrong without the proof and/or there might be differences that depend on the origin of the observers of complaint handling acts. In fact, this study only examined Germans, whose interpretations may deviate from those living in other countries influenced by other cultures. Yet, it can be argued that a study involving Germans depicts only the European way of thinking and doesn't account for cultural differences in behavior of other nations (Wong, 2004).

3.4.6 Appendix

Table 3.4-5. Overview Constructs Essay 4

Constructs (Cronbach's Alpha)	**Items**	**Sources**
Attitude towards the company (α = .95)	is bad/ is good I don't like it / I like it is negative / is positive is unsatisfactory / is satisfactory do not please me / do please me	Adapted from Goldsmith et al. (2000)
Perceived trust towards the company (α = .90)	"online-deals.de" is trustworthy. I trust that "online-deals.de" would act to my advantage. "online-deals.de" would keep promises to me. I would trust in the information that "online- deals.de" gives me. The online retailer "online-deals.de" strives to be known for keeping its promises.	Adapted from Doney and Cannon (1997) and Jarvenpaa et al. (2000) and Koufaris and Hampton-Sosa (2004)
Liking of the company (α = .89)	"online-deals.de" very likeable. In the case that I would buy from the online retailer "online-deals.de", I would probably like it. I would expect most customers who shop at the online retailer "online-deals.de" to be satisfied with it. Online shoppers like me probably wouldn't like "online-deals.de".	Adapted from Esch/Geus (2005)
Riskattitude towards the company (α = .96)	a high purchase risk / a good bargain a possible disadvantage / a possible advantage a negative situation/ a positive situation a bad decision / a good decision	Adapted from Jarvenpaa et al. (2000)
Purchase intention (α = .86)	I think it is a good idea to buy the product "%produkt%" at "online-deals.de". I am positive about buying the product "%produkt%" at "online-deals.de". I think it is unwise to support the online retailer "online-deals.de" by buying from it.	Adapted from Laczniak/DeCarlo/Ramaswami (2001)

Positive WoM intention (α = .91)	I would very likely spread positive word-of-mouth about "online-deals.de". I would recommend "online-deals.de" to my friends. If my friends wanted to buy the product "%produkt%", I would tell them to try "online- deals.de".	Adapted from Maxham III/Netemeyer (2002a; 2002b)
Negative WoM intention (α = .88)	The probability is high that I will warn family and friends to not shop in this online store. If a problem like the one in the example happened to me, I would complain to my family and friends about this online store. If a problem like the one in the example happened to me, I would tell my friends and relatives that they should not shop in this online shop.	Adapted from Blodgett/Hill/Tax (1997)
Satisfaction with the answer (α = .91)	displease me/ please me I loathe/ I admire very dissatisfied me/ very satisfied me would not have helped me well / would have helped me well make me unhappy/ make me happy are worthless/ are valuable are frustrating / are gratifying	Adapted from Bansal/Irving/Taylor (2004) and Bansal/Taylor/Hames (2005)
Cause attribution (α = .74)	The customer has written the report to inform other customers exactly how good or bad the online retailer "online-deals.de" really is. I trust that the customer's report is based on his/her true experiences and feelings.	Adapted from Sen/Lermann (2007)
Usefulness of the answer (α = .91)	informative helpful valuable beneficial	Adapted from Gefen/Ridings (2005)
Perceived credibility (α = .94)	not credible / credible unreliable/ reliable dishonest / honest insincere / sincere	Adapted from Ohanian (1990)

	untrustworthy /trustworthy	
Distributive justice (α = .93)	Even if the purchase caused problems for the customer, the efforts of "online- deals.de" to solve the problems led to a positive result. Considering the time and anger, the outcome that the customer received from "online-deals.de" was fair. Given the inconvenience caused by the problem, the outcome that the customer received from "online-deals.de" was fair. The outcome that the customer received in response to the customer service problem was more than fair.	Adapted from Maxham III/Netemeyer (2003)
Interactional justice (α = .88)	"online-deals.de" seemed to have great interest in the problem of the customer. "online-deals.de" understood exactly the problem. “online-deals.de" treated the customer roughly. "online-deals.de" tried very hard to solve the problem. All in all, the way in which "online-deals.de" responded to its customer's report was fair.	Adapted from Homburg/Fürst (2005)
Procedural justice (α = .77)	"online-deals.de" responded quickly to the customer's report. All in all, "online-deals.de"'s approach to the report was fair.	Adapted from Maxham III/Netemeyer (2003)

3.5 Differences and Similarities in Motivation for Offline and Online eSports Event Consumption

3.5.1 Introduction

Roughly defined as “a form of sports where the primary aspects of the sport are facilitated by electronic systems”, eSports is already a key phenomenon of the modern digital area (Hamari and Sjöblom, 2017). Organized in leagues and ladders around different games of various genres, eSports is a very successful business venture and still growing year by year (Warman, 2017). Through streaming options on various platforms

(e.g., twitch.tv or youtube.com), eSports can be consumed by users all over the world (Yu et al., 2018). These streams are extremely popular amongst eSports fans and are often consumed by millions of users (Warman, 2017). Additionally, eSports events, often hosted in big arenas and stadiums, allow thousands of eSports fans, who are willing to leave the purely digital environment of the internet, to consume eSports content in a completely new setting (Hallmann and Giel, 2017). Where users were previously constrained to consume eSports alone at home in front of their personal computer, they now fill arenas to watch their favorite team compete on stage (Hamari and Sjöblom, 2017). Hence, the digital barriers and limitations have vanished, and the overall experience has been enhanced to fulfill aspects of traditional events. The basic content, following two or more teams competing in a digital environment, remains the same for the event as well as the stream. Nevertheless, many of the surrounding factors do vary and might change the overall experience. In this context, uses and gratifications theory proposes that consumers decide on the basis of their needs (e.g., escape from reality) which form of media consumption is preferred and chosen (Hamari and Sjöblom, 2017; Katz, Blumler, et al., 1973; Katz, Haas, et al., 1973). Hence, this choice leads to a process which underlies the relationship between needs, the chosen consumption form and the gratifications obtained satisfying these needs (Palmgreen et al., 1985). Thus, the question arises how users are choosing a form of consumption, and what motivates them to attend the event on-site or follow the given stream online. Answering these questions is of importance especially for streaming service design (e.g., chat possibilities, custom camera views or other personalization options) and marketing potential e.g., for advertisers to align their advertising efforts to the consumer needs in the specific context.

Research, thus far, has focused on a variety of aspects of general eSports consumptions but did not deal with the different forms of eSports consumption. Macey and Hamari (2017), Hallmann (2017) and Heere (2018) offered classification approaches of eSports with respect to other phenomena, as well as traditional sports, arguing for its general importance and overall social influence. The general consumption motivation of eSports has been assessed by Hamari and Sjöblom (2017), who developed a motivation scale that especially caters to eSports. Furthermore, Pizzo et al. (2017) as well as Donghun and Schoenstedt (2011), have analyzed the differences between sports and eSports consumption. Surprisingly, a comparison of the previously described two forms of eSports consumption is missing. Yet, literature regarding general sports consumption indicates possible differences between different forms of consumption which is predominantly indicated through differences in the motivation to follow the event (Hu et al., 2017; Seo and Green, 2008; Zhang and Byon, 2017). Thus, to get a more profound

view on differences between both consumption forms and therefore, be able to derive implications, our first research question reads as follows.

RQ1: What differences can be observed in the motivation of onsite participants and online participants of eSports events?

Moreover, studies have indicated that these differences might also impact important aspects of event success (Zhang and Byon, 2017). Relevant factors like satisfaction with the event and a corresponding attitude towards the event experience might, therefore, also be subject to the different forms of consumption. Thus, to get a more thorough view that goes beyond the differences in motivation regarding the event success, we strive to answer the following second research question in the context of eSports events:

RQ2: What differences can be observed in the attitude towards the event and the satisfaction with the event between online and offline consumption form?

By answering those two research questions, our study will widen knowledge on eSports consumption and assess the differences in off- and online consumption of eSports. To find explanatory ground for our research, we conducted a study at a league of legends event in Berlin. In the following, we will present the fundamentals of our research, the results of the study and derive implications for management and research.

3.5.2 Literature review and hypothesis development

Conceptual Framework

Our conceptual model (see Figure 3.5-1) builds on motivations for eSports consumption in regard to the uses and gratifications, social-cognitive and general needs theory such as Maslow's hierarchy of needs, two-factor theory and acquired-needs theory.

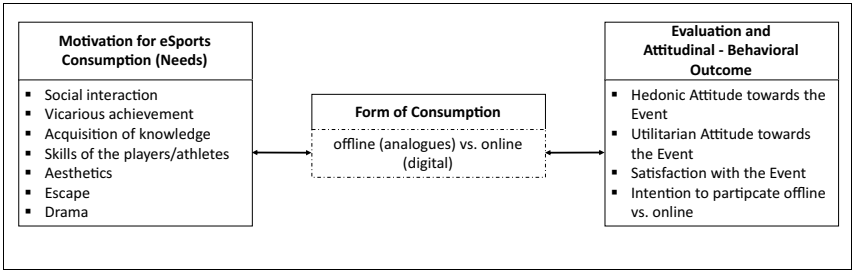

Figure 3.5-1. Conceptual Model

In general, we believe that choosing a specific form of consumption of an eSports event is driven by the actual motivation for eSports consumption, because consumers have

specific needs, that they expect to be fulfilled via a specific media form. Interactions with the environment will lead to an evaluation of consumers, if their needs are satisfied by the consumption form and consequently, a positive or negative confirmation affects future media consumption behavior.

Motivation as needs for sports consumption

In general, uses and gratifications theory is one of the most employed frameworks to understand media use and a related digital and nondigital consumption (Hamari et al., 2018; Salwen et al., 2004). Specifically, this framework helps to understand consumer motives for accessing and using a form of media consumption (Katz, Haas, et al., 1973). Consumers decide on the basis of interests (e.g., context) and needs (e.g., escape from reality or entertainment) which media offer is consumed (Hamari and Sjöblom, 2017). The decision for a specific medium (i.e., in this context the consumption form for eSports) depends thus on the user's motivations and expectations that their needs are satisfied by the media offered and therefore, a congruency between needs and an expected fulfillment (Severin and Tankard, 2013). In general, motivations are understood as a predisposition that drives human behavior with the ultimate goal to fulfill basic to more complex needs (Maslow, 1943; McDonald et al., 2002). Li and Petrick (2005) emphasize that the link between socio-psychological needs of consumers and their resulting motivation to participate in specific events has created a significant basis for studies on event motivation research (Crompton, 2003). Based on two-factor and acquired-needs theory literature supposes that the motivation of consumers participating at events is shaped by their needs and the expectations to fulfil these socio-psychological needs (Getz, 1991; Li and Petrick, 2005). Extending these assumptions by the social-cognitive theory, literature suggests that enactive learning renders this evaluation of fulfillment and therefore, affects related behavior (Larose et al., 2001). Enactive learning describes how humans learn from experience and consequently, how interactions with the environment (e.g., consumption form) influence media presence by (continuously) reforming expectations and evaluations of the likely outcomes of future media consumption and the related behavior (Bandura, 1986; Larose et al., 2001). It is therefore a process that describes the relationship between gratifications sought, media behavior, and gratifications obtained (Palmgreen et al., 1985). Consequently, the expectations of satisfaction of needs lead to the choice of a specific consumption form and consequently, the exposure to this specific media environment determines future behavior due to consumers' evaluations (Kaye et al., 2018; Larose et al., 2001; Sundar and Limperos, 2013). Hamari et al. (2018) emphasize that the uses and gratifications framework has been used by research from various domains to investigate motives associated with different contexts and especially in the context of video games, such as

video games in general (Chen and Leung, 2016; Kim and Ross, 2006; Merhi, 2016), online video game streaming (Hilvert-Bruce et al., 2018; Sjöblom and Hamari, 2017) and eSports in particular (Hamari and Sjöblom, 2017). Moreover, differences in offline and online consumption motivation (e.g., news consumption form) have been assessed by taking the uses and gratifications concept into account (Salwen et al., 2004).

General motivations to attend events have been studied for several years and researchers strived for a more profound knowledge to understand the different groups of attendees to better meet their needs. To do so, research focused on developing scales that include the relevant motivation dimensions. For instance, Uysal, Gahan and Martin (1993) were among the first to develop a scale that dealt with the different dimensions of event attendees' motivations. Specific elements of spectator motivation were identified through additional research and coherent measurements derived (McDonald et al., 2002; Wann, 1995). Versions of the scale were adapted to various settings and tested at numerous events, showing its general usefulness to describe the event participation motivation. Moreover, Scholars utilized different dimensions of motivation to, e.g., segment different groups of visitors (Backman et al., 1995; Formica and Uysal, 1995).

Trail and James (2001), subsequently, build on the known scales and coherent dimensions of motivation to develop the motivation scale for sport consumption (MSSC), that was designed to measure the general motivation for sport consumption (e.g., basketball or soccer), independent from a specific event. Their work, subsequently, was verified through numerous studies that assessed broader aspects of sport consumption and related behavior, e.g., the differences of male and female sport fans (Byon et al., 2010; Ridinguer and James, 2002) and, thus, demonstrating the range of possible applications for the scale to assess motivation.

Recently, Hamari and Sjöblom (2017), build on the MSSC to develop a tool that was applicable to eSports. Consequently, they are able to derive insights about the comparability of eSports and traditional sports and extend the knowledge about eSports consumption. Nevertheless, the form of eSports consumption (i.e., digital or analogue) is not subject to their assessment. Yet, the motivation for eSports consumption and the related decision for a media form is particularly interesting, because eSports roots in digital environments, whereas classical sports (e.g., soccer or basketball) originated from an analogue world of consumption (Hamari and Sjöblom, 2017; Zhang and Byon, 2017). Thus, the online consumption form of eSports existed before offline consumption forms (i.e., non-purely digital events) were introduced (Scholz, 2019).

Consequently, we build on the work of Hamari and Sjöblom (2017) and assess differences of the eSports consumption forms based on the adapted version of the MSSC. This scale consists of the dimensions taken from the original MSSC by Trail and James (2001), however, adapted to the eSports context:

- The dimension social interaction refers to the notion that people consuming eSports seek contact with like-minded individuals (Hamari and Sjöblom, 2017). Generally, the possible association with an (unknown) group or individuals and socializing opportunities with friends, business partners or other acquaintances has been found to be an important driver for event attendance and sport consumption alike (Crompton and McKay, 1997; McDonald et al., 2002).
- Experiencing vicarious achievements through, e.g., successful games by a player or team is the second motivation dimension (Hamari and Sjöblom, 2017). Witnessing how the favorite player wins an important game or successfully executes an important play evokes positive feelings for the spectating fan (Trail and James, 2001). The desire, to experience these feelings and be part of the moment, potentially drives fans to follow events.
- Especially for attendees that are also playing the given game at home, the possibility to acquire knowledge might be of importance as a motivation to consume eSports. By following the live gameplay of a professional eSports game, where the most skilled players are competing with one another, spectators can learn new strategies or tactics that enable them to strengthen their own gaming performance (Hamari and Sjöblom, 2017).
- Spectators might also be interested in experiencing the skillset of professional players and enjoy the performance of the high level of gameplay (Hamari and Sjöblom, 2017). The importance of this dimension can especially be found for active players, as they can truly appreciate and evaluate specific skills by comparing the gameplay with their own performance in the game (McDonald et al., 2002).
- Likewise connected to the game itself is the perceived aesthetics of the sport. This dimension relates to the grace and beauty that is coherent in the game (Hamari and Sjöblom, 2017). Especially for sporting activities like ice skating or gymnastics, this aspect can be very important to draw a crowd to the event (Milne and McDonald, 1999). Relating to eSports, the maneuver of in-game characters or the beauty of the displayed scenery might evoke similar feelings for possible attendees, motivating them to attend or follow an eSports event (Hamari and Sjöblom, 2017).
- A more general dimension of motivation to attend or follow an eSports game can be found in the desire to escape from daily routines. The game, the event and the, for most, unusual occasion of experiencing it live deals as a distraction from regular life (Gantz and Wenner, 1995). Reducing stress by escaping to another environment and switch into another mindset as long as the event lasts has been

found to be an important reason for actively participating as well as spectating an event (Milne and McDonald, 1999).

- Lastly, the coherent drama of undecided games and close competition amongst rivals also motivates visitors to attend an event (Hamari and Sjöblom, 2017). Enjoying the atmosphere of important games (e.g., championship finals) evokes emotional reactions that attendees were found interested in experiencing (Trail and James, 2001).

These dimensions (social interaction, vicarious achievements, acquisition of knowledge, skillset of professional players, aesthetics, escape and drama) build the MSSC that was already utilized to measure general eSports consumption (Hamari and Sjöblom, 2017; Katz, Haas, et al., 1973). However, based on previous research, we propose that the actual environment of consumption impacts the overall experience (Seo, 2013) so that different forms of participation (i.e., pure digital online vs. offline at the event venue) might shape different expectations regarding which form of consumption satisfies the needs best. Hence, in the following we will present reasoning for potential influences of these motivational factors on the choice of consumption form and derive respective hypotheses.

Hypothesis development

One key element of events is related to interaction of people with one another. Often, groups of friends or family attend an event together and use the provided content as a platform for their social interaction with each other (Kerr and May, 2011; Pons et al., 2006). This is something that also holds true for eSports in general (Hamari and Sjöblom, 2017). Nowadays, technology allows for interaction with other users in virtual places. Streaming platforms, e.g., twitch.tv, have integrated features that allow contact with other individuals while consuming an eSports stream (Bründl et al., 2017; Scheibe et al., 2016). Therefore, the basic possibility of interaction is provided in both consumption scenarios. However, researchers have argued that the virtual interaction with peers or family is often seen as a substitute for real life interaction (Seo and Green, 2008). Users of streams could certainly be interested in using interaction features of provided platforms, but the social connection is much more relatable to a real-life interaction provided by event. Hence, we argue that there will be differences in offline and online eSports consumption in the social dimensions of motivation.

H1*: Social motivation to participate in an event will be significantly higher for offline than for online participants.*

Next to the socialization with other visitors or users of an eSports event, the perceived social connection to the players is also an important motivational factor for (e)sport consumption. Experiencing a victorious achievement and celebrating the success of a

favorite player is considered to be an important motivational factor of all sport spectators (Dale et al., 2005; Fink et al., 2002; Gantz and Wenner, 1995). When comparing the two consumption possibilities of eSports, one can argue that the offline consumption allows for a stronger connection with other fans and spectators, while the online consumption enhances the perceived connection to victorious players. eSports has been an online phenomena and most active players are still using websites, social media and other virtual communities to present themselves (Hamari and Sjöblom, 2017; Seo, 2013). Events are a sort of exception to these normal representations, that are hosted irregularly and sometimes far away from specific fans (Seo and Jung, 2016). Nonetheless, fans of specific players will be able to follow their favorite team or player online. In a successful game, their fan-based perceived connection will, as it does in most sports, lead to a perceived level of combined success, where the victory will in turn be perceived as a personal achievement (Hamari and Sjöblom, 2017; Wann, 1995; Wann and Branscombe, 1993). Attendees of the event will certainly not be free of this motivational dimension, but the perceived achievement of online users will be, based on this reasoning, significantly higher:

H2*: Achievement motivation to participate in an event will be significantly higher for online than for offline participants.*

Moreover, gaining knowledge has been shown to be a relevant factor for sport consumption, e.g., learning about the players or teams and sharing this information in conversations about sports or to improve own skills in the respective sport (Hamari and Sjöblom, 2017). Attending any form of sporting event generally offers different forms of knowledge acquisition. One aspect can be found in the possibility of attendees to inform themselves about the venue, players and teams (Gantz and Wenner, 1995; Wenner, 2013). Furthermore, information about the sport in general, e.g. tactics or play styles, can be obtained by attendees (Karp and Yoels, 1990). Users following the stream, or people attending the event, are also very likely to play this game themselves. Experiencing other (professional) players playing the game offers the possibility to extend their own degree of knowledge about the game and possible strategies and tactics. Both dimensions are, therefore, expected to influence any form of eSports consumption.

However, Hamilton et al. (2014) have discussed the importance of knowledge sharing in online media consumption settings and stated that new streaming platforms offer enormous potential to exchange expertise about the issue. Yet, differences in acquisition of knowledge should be a key difference between the two consumption forms, leading to different ways of game portrayal. People at the event will most likely not be as close to the action as streaming users. Building on additional features of twitch and similar

websites, users are enabled to follow the action intensively and learn about the game, the players' tactics and strategies. Therefore, we assume that the motivation to obtain knowledge will be significantly higher for stream users:

***H3**: Acquisition of knowledge motivation to participate in an event will be significantly higher for online than for offline participants.*

Opportunities to experience the skillset of players are provided for online and offline consumption forms (Pizzo et al., 2017). However, the provided features of streaming platforms exceed the event attendees' point of view in the arena, e.g., to improve own skills (Hamari and Sjöblom, 2017). Where event attendees are, by design, forced to follow a broader overview of the game and the related action, stream users are enabled to follow the game closely and appreciate the skillset of players (van Hilvoorde and Pot, 2016; Weiss and Schiele, 2013). The implemented platforms even allow users to switch between different viewpoints, enabling them to exclusively follow individual players and obtain a better understanding of their tactics. For instance, stream viewers can actively switch and choose between different game perspectives such as overview cameras, but especially third-person and first-person views (e.g., seeing directly what the athlete sees), which are unique to eSports and which affect remarkably how the consumers can follow a match. Here, some event broadcasts even offer complete freedom to move within the in-game environment (e.g., Defense of the Ancients II), which is superior to traditional broadcasting means such as soccer or basketball. Hence, these digital environments offer static streaming broadcasts, where multiple camera angles are chosen by the moderator. However, they also offer active environments where the observer can directly choose the camera perspective. Consequently, the online consumption of an event offers more comprehensive opportunities to follow individual players and performances in comparison to offline consumption. Therefore, the motivation to appreciate the skillset of the involved players will be significantly higher for online participants.

***H4**: The motivation to experience the skillset of professional players will be significantly higher for online than for offline participants.*

Another aspect of the game, that motivates potential spectators, is the aesthetic demonstration of players. Relating to the elegance or excellence of the sport, this motivational trait is especially influential in very visual sports that allow spectators to observe a detailed form of sport (Hamari and Sjöblom, 2017). Therefore, sports that allow, or even generally include the judgement of strong visual elements, e.g. gymnastics, are commonly considered to attract viewers with a strong aesthetic motivation (Fink et al., 2002; Trail and James, 2001; Wann, 1995). Here, Hamari and Sjöblom (2017) found that eSports consumption was negatively influenced by the aesthetic motivation of users. They argued that the basic link between this motivational

dimension and the eSports consumption was very well given, but that the form of utilization as well as the game genre in question would play an important role. In deference to traditional forms of sport, most games played feature long and intensive battles. Therefore, the possibility to enjoy and observe specifics of the players' skillset are rather limited. Other forms of sports, e.g., gymnastics or golf, do offer a relaxed setting that allows spectators to observe the performance of a single athlete while most games played in eSports are based on interaction of two or more teams with almost no break. Because of a continuous gameplay and interaction of players, the opportunities of spectators to focus on a single player's performance is limited. Nevertheless, a general possibility of enjoying an aesthetic performance is certainly given in both forms of consumption and build on the discussed advantages of the existing platforms. One example of these eSports aesthetics might be the players' performance with the mouse and keyboard, i.e., the so-called (and often depicted) actions per minute. However, these actions need close ups of the players' hands, which are more usually broadcast within streams (e.g., by picture in picture), whereas the offline consumption, i.e. the big screen at the event, mostly focuses on the actual gameplay. Thus, we argue that the online participants will show a significantly higher aesthetic motivation based on the consumption possibilities:

H5*: Aesthetics motivation to participate in an event will be significantly higher for online than for offline participants.*

Moreover, based on previous research into sports event consumption, we argue that an escape from daily routines is another dimension of motivation. The content observed might be used as a distraction from problems and issues that might bother the individual (Gantz and Wenner, 1995). Sports consumption in general, and eSports consumption specifically, have been shown to cater for this dimension of motivation (Hamari and Sjöblom, 2017; Trail and James, 2001). Offline and online consumption of eSports events should, therefore, be able to provide possibilities for escapism to users and attendees alike. However, recent research shows that the actual environment of consumption impacts the overall experience (Seo and Green, 2008; Seo, 2013). Thus, consuming a stream at home might be less effective in creating an escape perception, because the environment (e.g., in front of a PC or television) is still like other daily experiences. On the other hand, visiting an event on-site (e.g., arena) offers new and as yet unknown impressions and thus, should be sought by consumers with a more distinct desire for escape. Based on Kahneman's (1973) assumptions regarding attention and efforts, we propose that new impressions lead to a need of higher capacities to process the surrounding information and thus, reduce the probability to think about mundane things. Hence, we hypothesize:

***H6**: Escape motivation to participate in an event will be significantly higher for offline than for online participants.*

Moreover, the drama of a match is another dimension of motivation and might be very similar to the previous dimension in the case of the impact of an offline event. Drama refers to the uncertain outcome of games. A close game that offers a lot of excitement to viewers is a key element of (e)sport consumption (Pizzo et al., 2017; Pons et al., 2006; Trail and James, 2001), since the content provided offline and online is identical and allows both groups to experience the game and its outcome. However, drama might be interpreted as multidimensional and thus, should be affected by more influential factors than just the outcome of a match. For instance, the overall atmosphere in an arena with thousands of spectators following an extremely thrilling game situation should intensify the perceived drama. Similar results can be observed, for example, in research into basketball or other forms of sport consumption (Chen et al., 2013; Zhang and Byon, 2017). Thus, eSports enthusiasts with a more distinct need for drama, should seek offline event participation:

***H7**: Drama motivation to participate in an event will be significantly higher for offline than for online participants.*

Attitude and satisfaction

The attitude towards the event has been identified as a key factor to explain event-related behavior and measure the overall success of events (Martensen and Gronholdt, 2008). Especially in regard of sponsoring effects, the attitude towards the event and the related brand have shown significant influence (Carrillat et al., 2005; Ruth and Simonin, 2003). Therefore, eSports events and offerings should be keen on understanding the influential factors of attitude towards the event and how it is related to the form of consumption (Macey and Hamari, 2017; Seo, 2013). Hence, we argue that the attitude towards an eSports event is also an important factor to be assessed when analyzing the different consumption forms. Gursoy et al. (2006) introduced the concept of two dimensional attitude towards an event. With the distinction of utilitarian and hedonic aspects, they argue, the different factors of event consumption can better be described this way (Gursoy et al., 2006). Similar approaches have also been brought forward in digital environments where Salehan et al. (2017) have found reasoning that both dimensions are also relevant to explain the behavior of users in social networking services.

Hedonic attitude of event consumption relates to aspects of enjoyment and perceived fun yielded through the event (Gursoy et al., 2006). These aspects may be perceived differently from individual to individual, but a general understanding that this dimension plays a vital part in explaining attitude towards an event is assumed (Gursoy et al., 2006). In digital environments, hedonic attitude has been connected to self-enhancing

and joyful experiences, that are also perceived individually (van der Heijden, 2004). In particular, research into social networking sites has addressed this issue and concluded that the social features (e.g., connecting with other users) are very relevant to explain the perceived enjoyment of involved users (Salehan et al., 2017). In regard to electronic gaming, research has also identified social interaction to play a vital role in explaining the hedonic attitude of users (Salehan et al., 2017). As previously stated, the environmental setting of offline consumption will enhance the perceived connection of attendees. Therefore, we argue that the overall attitude towards the event will be significantly higher for offline participants:

***H8**: Hedonic attitude towards the event will be significantly higher for offline than for online participants.*

Utilitarian factors relate to the possibility of event attendees or stream users to utilize the experience to their advantage (Gursoy et al., 2006). In digital environments, e.g., social networking sites, users tend to advance their career by connecting with possible employers online, or sharing and gathering job-related information (Salehan et al., 2017). Furthermore, users tend to visit websites as a source of knowledge that enhances their private or professional life (Ardichvili et al., 2003). Similar effects can be expected in regard of streaming options of eSports events. Websites are often conceived as a tool that enables users to enhance their personal or private life. Therefore, users' utilitarian attitude towards the event is likely to be higher for online participants as their focus of consumption is likely to be strongly connected to factors such as knowledge gain and aesthetic appreciation to enhance their own skillset:

***H9**: Utilitarian attitude towards the event will be significantly higher for online than for offline participants.*

Moreover, event related satisfaction has been considered to be connected to the game and the service satisfaction (Kim et al., 2016; Yoshida and James, 2010). Game-related satisfaction would be tangible in both consumption forms, while service satisfaction would certainly be conceived differently in both settings. Yoshida and James (2010) argue that the atmosphere is a strong indicator for overall satisfaction. Within online environments the satisfaction might, therefore, be related to the community and their connection with one another, but real perceived atmosphere is only conceivable within offline forms of consumption (Steinmann et al., 2015). Therefore, we postulate:

***H10**: Satisfaction with the event will be significantly higher for offline than for online participants.*

Behavior

Forthcoming event success is highly related to positive behavioral intention of visitors. Through their revisiting intention, they can positively influence the long-term success of events. Kim et al. (2016) found that revisiting intentions are strongly related to the experiences made while attending the event. Therefore, we assume that either form of consumption will lead to visiting intentions of the participants. Furthermore, we argue that event attendees on site are more likely to show an intention to visit the event on-site again, while online consumers might tend to higher interest in watching another streamed version of an eSports event. Nevertheless, it should be noted that consumers will tend to participate in forthcoming events either way if the needs are satisfied (e.g., cross media usage), however, consumers will tend to show a higher level of loyalty to participate in an environment that satisfies best their consumption needs (Larose et al., 2001).

H11*: The intention to visit an event on site will be significantly higher for offline than for online participants.*

H12*: The intention to consume a stream of the event will be significantly higher for online than for offline participants.*

3.5.3 The empirical study

Measures and procedures

To test our hypotheses, we prepared a questionnaire for the EU LCS Event in Berlin in early 2018. Riot Games, organizer of the event, offered exclusive live coverage of the event through lolsports, youtube and twitch.tv. However, the actual content (i.e. the video stream) was similar on all three websites. The same applies, for instance, to the interaction possibilities (e.g. chat), so that these three websites can be classified as highly comparable. The coverage included commentated gaming content as well as shots from inside the event venue. This is a standard form of eSport online event coverage and provides the desired background for our study. In accordance with the language spoken at the event and in the online stream, the survey was conducted in English. Hence, everyone following the stream was able to take part in our survey. By utilizing international, game-related message boards (e.g. reddit and twitter) to reach online participants, we furthermore ensured that a representative, international sample could be drawn. On-site participants were randomly approached with a similar paper and pencil version of the questionnaire.

At the beginning of the questionnaire, participants were asked what form of consumption they had chosen, i.e., on-site or online consumption, to ensure that participants could be unequivocally assigned to either one of the two groups. Moreover,

participants were clearly instructed to only access the previously selected event form to guarantee a high degree of discriminatory power.

In addition to demographics, we used measures that related to the postulated hypotheses. The motivational dimensions were operationalized in accordance with Hamari and Sjöblom (2017) and the MSSC of Trail and James (2001) in the context of eSports.

Both dimensions of attitude were measured with five items each, taken from Gursoy et al. (2006). Satisfaction with the event was adapted from Voss et al. (1998). Intentions were measured with one item taken from Wakefield (1995). The measurement was performed using well established multi-item scales with a seven-point Likert scale and all reflective constructs satisfy the Cronbach's Alpha threshold of > 0.70. For a detailed overview in regard to the measures used in this essay, see appendix Table 3.5-2.

The final sample, both on-site and online, consisted of N = 637 participants (81.7 % male, mean age M = 21.40, standard deviation SD = 5.59). Of these, online viewers: n = 482 respondents (86.9% male, age M = 21.01, SD = 4.65), and on-site participants: n = 155 respondents (65.1% male, age M = 22.73, SD = 7.79).

Results and discussion

To verify our hypotheses, we used multiple t-tests with offline (on-site participation) and online consumption via stream as independent variable. Table 3.5-1 shows the results of our analysis. The reason for choosing t-tests is that research has shown t-tests to be robust against violation of statistical requirements (e.g., different group sizes or non-normal distribution) (Glass et al., 1972; Sawilowsky and Blair, 1992). In addition, as we are comparing two groups, i.e., offline versus online consumption, using t-tests seems appropriate. Results show significant differences with regard to almost all variables under review. Most hypotheses can be validated via the derived results.

Firstly, regarding motivation, we mostly observe the expected differences. Here, the social dimension is more pronounced in case of offline events. This dimension can, therefore, be considered as more relevant in an offline environment and seems to be more likely to be supported by a traditional form of event consumption, i.e., meeting friends and family at an event. However, social interaction cannot be described as the primary driver of consumption, as it tends to be less important in comparison to the remaining dimensions. Thus, the result is also interesting in terms of knowledge gain and the observation of player's skills. Both dimensions are more distinctive of stream consumption. The latter might be explained by the details within the digital stream, i.e. player close ups and direct screen capturing directly on the screen at home, which enables the consumers to follow the matches in detail. In comparison, offline participants, who can "only" follow the match on a huge canvas, do not get that level of

detail. This assumption might also be supported by taking the results of the aesthetic dimension into consideration. Nonetheless, it should be mentioned that while all the dimensions differ significantly, the size of the effect is rather small.

Table 3.5-1. Hypothesis testing

Dependent Variable	**Mean (SD)**	**t-Value (p-Value)**	**Hypothesis**
Motivation to attend			
Social	Online: 4.32 (1.70) Offline: 4.75 (1.76)	T(633) = 2.721 (p = .007)	H1 ✓
Achievement	Online: 5.08 (1.55) Offline: 4.78 (1.77)	T(633) = 2.086 (p = .037)	H2 ✓
Gain Knowledge	Online: 5.95 (1.05) Offline: 5.46 (1.30)	T(633) = 4.761 (p < .001)	H3 ✓
(Physical) Skills	Online: 6.52 (0.75) Offline: 6.19 (1.14)	T(633) = 4.028 (p < .001)	H4 ✓
Aesthetics	Online: 5.56 (1.29) Offline: 5.08 (1.49)	T(633) = 3.873 (p < .001)	H5 ✓
Escape	Online: 4.57 (1.47) Offline: 4.70 (1.67)	*T(633) = .923 (p = .357)*	H6 ×
Drama	Online: 6.16 (1.03) Offline: 6.04 (1.27)	*T(633) = 1.171 (p = .242)*	H7 ×
Attitude and Satisfaction			
Hedonic Attitude	Online: 6.19 (0.96) Offline: 6.18 (1.18)	*T(633) = 0.012 (p = .990)*	H8 ×
Utilitarian Attitude	Online: 5.26 (1.09) Offline: 5.31 (1.08)	*T(633) = .512 (p = .609)*	H9 ×
Satisfaction with the Event	Online: 5.65 (1.10) Offline: 6.00 (1.21)	T(633) = 3.364 (p = .001)	H10 ✓
Behavior			
Attend Offline	Online: 2.16 (1.69) Offline: 4.41 (2.06)	T(633) = 13.59 (p < .001)	H11 ✓
Attend Online	Online: 6.21 (1.18) Offline: 5.69 (1.86)	T(633) = 4.007 (p < .001)	H12 ✓

1 = totally disagree / negative evaluation, 7 = totally agree / positive evaluation, insignificant results are italic

Surprisingly, we do not find any effect regarding the attitude dimensions towards the event. Generally, the data shows that the event, in both consumption forms, is considered to yield hedonic as well as utilitarian features. For hedonic, M = 6.19 and 6.18 and for utilitarian, M = 5.26 and 5.31 (online vs. offline, respectively), the overall values for hedonic attitude are more pronounced in comparison to the derived values for utilitarian attitude. eSports is, first of all, based on a game that obviously is played for the enjoyment it yields. Nevertheless, the high value for utilitarian attitude demonstrates that eSports also offers a lot of useful aspects to its fans. In accordance to the data received for the motivational subscales that relate to utilitarian aspects (e.g., knowledge gains), the analysis generally indicated the importance of these factors. Prior research indicated that most events and products can very well cater to both dimensions of attitude, and our research supports those claims (Batra and Ahtola, 1991; Gursoy et al., 2006). Nonetheless, the proposed differences between the two consumption methods cannot be observed, leading to the assumption that the overall attitude towards the event manifests on a different level and is not directly determined by the chosen form of consumption.

As hypothesized, the satisfaction with the event does in fact differ among the two forms of consumption. Generally, the perceived satisfaction of the participants is relatively high in both groups, indicating a positive reaction to the event. Building on the argument and research of Yoshida and James (2010), we argued that the atmosphere and surrounding factors (e.g., form of broadcast in the arena) have a more positive influence on the level of satisfaction than the surrounding factors of online consumption. Here, satisfaction in regard to digital experiences is generally considered to be highly dependent on the surrounding factors that users create for themselves (Anderson and Srinivasan, 2003). Therefore, the possibilities for event organizers concerning streaming options are limited to the utilized platform. Everything else is ultimately left to the users' own efforts to enhance the experience. On the other hand, the factors influencing event satisfaction for visitors on-site are much more tangible for the organizers (Yoshida and James, 2010). Event-related research has indicated numerous factors that, directly or indirectly, influence the perceived satisfaction with the event, all of which can and should be addressed by the event organizers (Chen et al., 2013; Kim et al., 2016).

Regarding the behavior of the participants, we see differences in both variables examined. While both groups intend to watch another event online, participation in an offline event reveals a different result. Offline participants would tend to participate again, whereas the results show that online participants would continue to stick to the stream only. Online streaming has become easily accessible for almost everyone with a fast enough internet connection (Bründl et al., 2017; Chen and Lin, 2018). Hence, there

are few obstacles to witness another eSports event online. Fans of the game and the event series will always be interested in witnessing another event. Streaming certainly seems to be perceived as the more convenient option. However, on-site event participation does offer additional features of personal connection and atmosphere, but the main consumption method for most attendees and followers seems to remain within the digital environment.

3.5.4 Conclusion

Summary of findings

Overall, we were able to identify differences as well as similarities between both forms of consumption. The differences in motivation to consume provide further proof of the strengths and weaknesses of eSports events and streams. Keen observers and fans of the game, who are interested in playing themselves, seem to favor the streaming option, just to be able to examine the action closely. Events offer more emotional fans a great outlet for social interaction. Nevertheless, similarities in attitude and some motivation dimension show that the general perception of the event does not differ significantly between the two groups.

Attending events on-site and following a stream online, based on our data, cannot be considered a substitute for each other. Each consumption method offers advantages, based on slightly differently motivated visitors and consumers. Given that even important outcome variables (e.g., satisfaction) differ for both forms of consumption, it is important to address the advantages of each form and cater to their strengths. These lead to interesting research questions and implications for managers.

Implications and limitations

Building on recent research results in the fields of eSports, event-marketing and online environment, our research helps to widen the existing literature in this new field of interest. eSports is a global and rising phenomenon with unique features that need to be addressed. The derived differences of both forms of consumption indicate that the motivational dimensions related to performance and the game itself were significantly higher for online participants. The question arises as to what characterizes these participants. Similar research into Chinese table tennis matches, for example, has shown that online participants demonstrate stronger feelings of fanship with players (Zhang and Byon, 2017). Further examination of the participants should, therefore, be addressed in further research.

Moreover, our study was conducted at a League of Legends event in Berlin and online. Due to this setting, a number of limitations arise. eSports includes numerous games of different genres (Seo and Jung, 2016). Therefore, it is very likely that the derived results

differ when assessing a different game from a different genre (e.g., tactical shooter like Overwatch or Counter-Strike). The event type has been found to play a vital role in traditional event-related research, and similar aspects could be connected to the game played when dealing with eSports (Crompton and McKay, 1997; Kim et al., 2016).

In this context it should also be mentioned that geographical and economic limitations might affect the present results (Backman et al., 1995; Chung and Woo, 2011). The latter could explain why, on the one hand, we find significant differences between offline and online eSports consumption motivation, but on the other only observe relatively small effect sizes. Here, event observers who answered the questionnaire regarding online participation might have an eSport motivation, which would lead to the conclusion that those gamers prefer on-site consumption. However, due to considerable economic expense (for example the cost of traveling from their own country, potentially a long way from the event), simply cannot participate offline. Hence, further research could address this issue and investigate the impact of an offline consumption willingness in context of a "forced" online participation, i.e. stream.

Our sample portrays a common issue regarding eSports research. Most of the players and followers, thus far, are male (Hartmann and Klimmt, 2006). Although the issue of gender has been addressed by eSports-related research (Gray et al., 2018; Kaye et al., 2018), the male dominance of participation limits the possibilities to fully assess this influential factor, even though our sample represents the underlying population's gender distribution and provides sufficient explanatory power for the conducted study.

Although literature argues for a connection between motivational factors and attitude towards an event, our results show that the effect of the consumption form is only given in the motivational factors. Event-related research has, thus far, only assessed the motivational factors of event visitation (Backman et al., 1995; Kulczynski et al., 2016; Lee, Lee and Wicks, 2004) or argued for the value of attitude to explain sponsorship effectiveness and other phenomena (Carrillat et al., 2005; Lee et al., 1997; Martensen and Gronholdt, 2008; Martensen et al., 2007). Future research endeavors should try to connect these issues and learn about the interplay of these two constructs.

Human behavior in social live streaming services has been assessed through several studies, addressing factors such as platform representation, identification and interaction with streamers, and consumer expectations (Bründl et al., 2017; Oyedele and Simpson, 2018; Scheibe et al., 2016). Assumptions derived from these studies build on the usage of twitch and similar platforms to follow an individual or a company. The special aspects of event consumption (i.e. eSports event consumption) has not yet been addressed.

Social factors were among the few aspects of motivation that demonstrated stronger values for offline participation. Modern streaming platforms offer numerous options to communicate with other users (i.e. through direct message or chat), but these options are not yet fully capable of replacing real life experiences (Bründl et al., 2017; Hilvert-Bruce et al., 2018; Scheibe et al., 2016). Lim et al. (2012) evaluated the influence of the perceived psychological distance of streaming users, and their research indicates that there are a few things that platform designers could implement to strengthen the perceived tie of users. Accordingly, eSports managers could possibly enhance the social experience of users when streaming an event. Through group offerings, special chat rooms, and more interactive features the perceived social connection of users could be enhanced.

Another aspect of possible social interaction could be seen in the connection between players and their fans. Our data also indicates that players, their skillset, and the possibility of knowledge gain are advantageous features of online consumption. These aspects could also be enhanced by a more personal connection between players and the audience. Seeing that these aspects seem to be of importance to eSports fans, additional offerings that allow for a more personal and intense interaction of attendees, users, and the players should lead to positive reactions of fans (Seo and Jung, 2016; Weiss and Schiele, 2013). Research has indicated that stream followers are often interested in a personal connection with the streamer and that the perceived connection can also enhance positively related features (e.g., trust or fanship) (Friedländer, 2017; Hu et al., 2017; Yu et al., 2018). Due to the digital origins of eSports and its connection to the streaming community, the personality of players should be considered as an asset that needs to be addressed more strongly by event organizers.

3.5.5 Appendix

Table 3.5-2. Overview Constructs Essay 5

Constructs (Cronbach's Alpha)	**Items**	**Sources**
Motivation Scale for Sports Consumption: **Achievement** (α = .87)	I feel proud when my preferred player does well. I feel a personal sense of achievement when my preferred player does well. I feel like I have won when my preferred player wins.	Adapted from Trail/James (2001) and Hamari/ Sjöblom (2017)
Aesthetics (α = .90)	I appreciate the beauty inherent in video games. I enjoy the natural beauty in gaming I enjoy the gracefulness associated with gaming.	

Escape (α = .73)	Watching eSports is a change of pace from what I regularly do. Watching eSports provide an escape for me from my day-to-day routine. Watching eSports provides a diversion from "life's little problems" for me.	
Drama (α = .76)	I enjoy the drama of a close match. I enjoy it when the outcome is not decided until the very end. I prefer watching a close game rather than a one-sided game.	
Player Skills (α = .86)	The skills of the players are something I appreciate. I enjoy a skillful performance by the players. I enjoy watching a well-executed gaming.	
Social (α = .87)	I enjoy interacting with other spectators at the game. I enjoy talking with others at the match. I enjoy socializing with people sitting near me while I watch the match.	
Knowledge (α = .82)	I increase my understanding of the strategies by watching matches. I increase my knowledge about a particular game when I watch it. I can learn about the technical aspects of a game by watching it.	
Utilitarian attitude towards the event (α = .85)	Necessary / Unnecessary Effective / Ineffective Functional / not Functional Practical / Impractical Helpful / Unhelpful	Adapted from Gursoy et al. (2006)
Hedonic attitude towards the event (α = .89)	Dull / Exciting not Delightful / Delightful not Fun / Fun not Thrilling / Thrilling Boring / Interesting	Adapted from Gursoy et al. (2006)
Satisfaction with the event (α = .91)	I am satisfied with the Event. I am happy with the Event. I am delighted with the Event.	Adapted from Voss et al. (1998)
Intention to participate	*In the future, how often will you attend EU LCS events?* *In the future, how often will you watch EU LCS events online?* very infrequent / very frequent	Adapted from Wakefield (1995)

3.6 The Need for a Community: The Impact of Social Features on Video Game Success

3.6.1 Introduction

Video games have become very popular: For instance, in the United States video game revenue grew from $10.1 billion in 2009 to $24.5 billion in 2016. Moreover, two-thirds of all US citizens are playing video games on a regular basis (Entertainment Software Association, 2016). However, despite their popularity, the success drivers of video games have not yet been sufficiently empirically investigated. This is an important issue for developers, because the production costs of video games also increased enormously due to new hardware technologies and state-of-the-art game mechanics, graphics, and sound effects. For example, the production budget of "Grand Theft Auto V", one of the most successful video games of all time, was around $250 million (IMDB, 2016). Therefore, developers can be faced with considerable financial risk nowadays if the video game does not become a market success. To reduce the risk of a low financial results, developers could incorporate paid content through in-app purchases or download content (DLC) so that a user can purchase new weapons, items or new characters and update the basic game. Users who have a high average playtime in the video game are particularly inclined to purchase such additional features (Han et al., 2016). Taking all that into account, developers are facing a huge financial risk when developing a new video game. Nevertheless, taking this risk can certainly pay off. Video games that end up being successful can generate more than 300 percent of their original production costs (Clements and Ohashi, 2005). For example, the previously mentioned video game "Grand Theft Auto V" generated about $800 million in revenue within the first 24 hours of its release (IGN, 2013), as well as over $500 million in the following years through in-app purchases and DLC based on a correspondingly long average playtime (Gamespot, 2016). However, there is high uncertainty among developers regarding which type of video game they should offer, and thus far, success drivers of video games have not been entirely empirically identified.

Gretz (2010) showed that the success of a video game depends on a high number of users of a specific video game console, e.g., an Xbox or a PlayStation. Gallaugher and Wang (2002) and Schilling (2002), showed that a high number of users of a specific video game console had a positive effect on the console's appeal and the sales volume of the available video games. However, the quality of offered video games is an even more important factor regarding the large number of users of a specific video game console (Anderson et al., 2014; Lee, 2013).

Additional research focused on content-related features of the individual video game. Most authors argued that video games are hedonic products (e.g., Lin, 2010; Turel et al., 2010), the quality of which can only be assessed by a user after the purchase process. Therefore, video games portray economic risks for new users (Voss et al., 2003). To reduce the risk, i.e., the potential failure of the purchase, users frequently rely on reviews, price, the reputation of the developer, and the video game genre. Here, the authors stresses that these features could generate a positive expectation towards the gaming experience and thus lead to a purchase intention. Cox (2013) showed that the reputation of the developer and reviews from journalists could be part of these influential features on the expectation. Moreover, his results show that some genres are getting more preferred than others. Furthermore, Binken and Stremersch (2009) showed a direct positive effect of professional reviews on the expectation and sales of video games. The reviews even had a disproportionate impact when the video game received an absolute top rating of nearly 100 possible points.

Nevertheless, the role of newer features, e.g., multiplayer and social interactions with other users while playing the video game, have been ignored as potential success drivers so far. The way video games are consumed by users through social media, online forums, and multiplayer features has changed dramatically within the last ten years (Marchand and Hennig-Thurau, 2013). Therefore, not only the product features impact the expectation and satisfaction towards a video game but also the community respectively social features that has formed around a video game. Through new online multiplayer features, in-app purchases and communication channels, users have been enabled to update the video game, add new features, and share their passion with people from different countries and continents. Video games are no longer just a product that a user buys for a fixed price and enjoys playing on their own or with known friends. Social interaction, knowledge-sharing and lively discussions are essential factors of any online community (Butler, 2001; Wasko and Faraj, 2005) and the video game community thrives on the same principles. Massively multiplayer online games, e.g., “Dota 2” and “Counter-Strike”, enjoy huge popularity among gamers. With an average overall playtime of over 300 hours (lifetime average playtime per gamer), “Counter-Strike” ranks as one of the most played video games on the digital distribution platform Steam (Steam, 2017). Through their participation, users of those video games are not only playing the video game, but are also creators of the gaming experience (Buchanan-Oliver and Seo, 2012). Furthermore, users today even enjoy games in a more passive way. Various YouTube channels that produce primarily “Lets-Play” videos can be seen as a direct result of this development. In this video format, a user films himself while playing a video game and commenting entertainingly on the video game mechanics. At

the same time, other users can discuss the video game through chat features or discussion forums (Youtube, 2017). A similar service is accessible through Twitch.tv, a platform that also offers streaming services. Unlike YouTube, this service is more focused on live broadcasting of given material and is especially popular with gaming streams. Once again, users can observe other users playing a video game while interacting through implemented chat functions or even play along with the host through online multiplayer features (Twitch, 2017). Ledbetter and Kuznekoff (2011) argued that the perceived utility of those multiplayer and communication features goes beyond the traditional gaming experience as it enhances interpersonal relationships, and such relationships satisfy a fundamental need for relatedness through interpersonal social interactions within the virtual world (Downie et al., 2008). In summary, video games are increasingly enjoyed as a collaborative social experience and users are keen to discuss and share knowledge about their favorite video games.

In summary, previous studies focused only on a limited number of potential success drivers of video games. Thus far, to the best of our knowledge, no study has provided insights into social interactions as success drivers and adequately addressed management implications to enhance and moderate these social interactions. Moreover, as far as we are aware, there are no studies, which explain the actual playtime of a video game. Previous studies mostly focused on the purchase process and the influential factors of a users' purchase intention, but not on the actual playtime, i.e., the actual use of a video game by users. Mostly the authors argued that the product features directly affect the expectation toward a video game, and therefore the relationship between the product features and sales should be detectable through a market analysis.

Therefore, this paper investigates these aspects by transferring the basic assumption of Oliver's (1977) expectation-confirmation theory (ECT) to this setting. We expand the findings in the field of video games, online communities and information systems by investigating 1) which product features enhance the number of owners of a video game and 2) which product features enhance the average playtime of a given video game. Furthermore, we 3) derive insights into the relative importance of social features in video games in relation to other product features known from the literature.

3.6.2 Conceptual Framework and Hypotheses Development

Each video game is differentiated by its graphics, game mechanics, story, sound and multiplayer elements. According to Cooper (1979), the success of such a product innovation depends on the associated value by the users. Unlike pure utilitarian products, video games are hedonic products, as their primary purpose is to create positive emotions (Hirschman and Holbrook, 1982) and joyful and pleasing experiences (Marchand and Hennig-Thurau, 2013). From the perspective of the users, there is high

uncertainty regarding whether the video game will fulfill this purpose. Since uncertainties are highly subjective and linked to partial information (Garner, 1962), the performance of the video game cannot be entirely predicted due to imperfect information (Salancik and Pfeffer, 1978). Uncertainties in buyer-seller relationships appear mostly due to information asymmetry about the product and the seller (Ghose et al., 2006). In the field of information systems, Dimoka et al. (2012) showed that based on the signal theory, product features, references of the developer and third-party information (such as discussion threads and reviews) signalize a certain value, which results in a specific user expectation of the product respectively video game. Based on the ECT, positive expectations lead to a purchase process and usage of the product. Subsequently, the perceived performance of the game is compared with the user's expectations. Confirmation results in a satisfying experience, which, according to Oliver (1977), usually leads to repurchase and re-usage intentions. Therefore, based on the ECT, certain video game features, such as the price, genre and references of the developer, reduce the product uncertainty (Dimoka et al., 2012) and form the user expectation regarding whether to buy and play a video game.

However, in addition to these primary product features, we extended our framework to take social features into consideration. Today, gamers can communicate, exchange knowledge and support themselves through multiplayer features and chat functions similar to an online community. In general, these social interactions create benefits for each user (Butler et al., 2014) and therefore enhance the overall gaming experience. Users can follow discussions in numerous online forums or streaming services to obtain new information about the video game, e.g., the location of hidden treasures, new items or weapons (Bateman et al., 2011; Kuk, 2006; Millen et al., 2002). For example, there are groups of users who play a video game such as "Minecraft" and connect with each other through online forums and social media channels, which usually leads to motivating them to continue playing the video game (Minecraftforum, 2017).

We propose, that these assumptions are in line with network effect theories (e.g., Beck, 2006), which propose that the value for consumers of an membership in a network is positively influenced when new consumers join the network and expand it (Katz and Shapiro, 1994). Consequently, the benefits of consuming such a video game depend positively on the total number of consumers who purchased the latter (Church et al., 2008). Hence, based on previous reasoning, these benefits through social interactions (i.e., network strengthening elements) might become important success drivers for video games (Butler et al., 2014; Wasko and Faraj, 2005), since they can also directly affect the expectations of the video game e.g., based on user reviews and discussion on the product page prior to a purchase, as well as the perceived performance and the intention

to play the video game again. Therefore, based on ECT as well as network effects, we analyzed the impact of product features and social features as success drivers of the number of users who bought the video game and the average playtime to gain an understanding of which features attract users to video games and which features motivate them to continue playing. Many studies confirmed that the interest in a product is strongly related to the congruence between the expectation regarding the quality of the product (Ridings and Gefen, 2004; Wasko and Faraj, 2005) and production efforts that meet the current standards. Therefore, it is important to describe the main game features that might lead to expectations due to the product information on the website, i.e., Steam, which in turn could impact the number of owners of the game and the average playtime. Moreover, from a management perspective, these two dependent variables are very important as they shed light on the success drivers of video games, which helps to increase the sales volume of a video game and therefore reduce the production risk. Furthermore, the analysis of the average playtime is an important variable, since a game with a high average playtime usually sells in-apps more frequently (Marchand and Hennig-Thurau, 2013), and thus such features increase the video game revenue. From a research perspective, it is important to gain a better understanding of the impact of social features on hedonic goods, as they may need to be considered more frequently in future research studies. Consequently, we developed the framework shown in Figure 3.6-1.

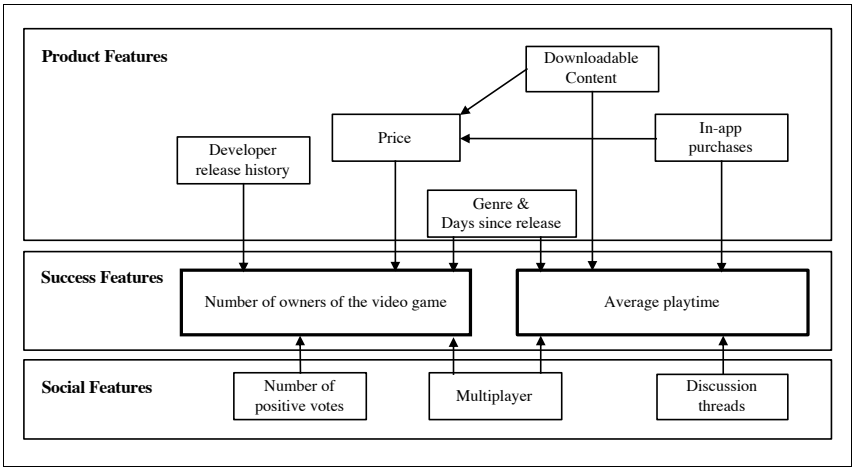

Figure 3.6-1. Conceptual Framework

3.6.3 Impact of the product features

Generally, products and software, e.g., video games, differentiate by means of certain product features. Those features create the general conditions in which users decide whether the given game might be worth buying or at least trying out. However, research has shown that there is a process of evaluation regarding these expectations before and after playing the video game. According to Oliver (1977), users create their disconfirmation of beliefs depending on their perceived performance of a product or service and the related expectations of the performance. For instance, with a higher price, the expectations rise and could therefore negatively influence the user behavior due to a high perceived risk that the expectations might not be fulfilled, thus, a high pricing level for a hedonic product increases the perceived chance of a user being disappointed (Voss et al., 2003). Moreover, especially in the context of video games, the rise of "indie games" might even strengthen this challenge. Today, numerous high-quality titles are available with only a small monetary cost to users (e.g., "Ori and the Blind Forest", "Cuphead"). Therefore, the gap between favorable but high-grade titles and full-price video games gets considerably larger so that the latter will be evaluated even more intensively due to the higher pricing. Nonetheless, in the context of video games, research has also shown that the price might also be assessed as part of the quality perception. For instance, Marchand (2016) showed that a higher price has a significant positive influence on the number of owners of video games. Best-selling video games (e.g., "Grand Theft Auto V") have a very high production budget with state-of-the-art game mechanics, graphics, and sound effects. Therefore, a high price (typically $59.99) increases the interest in the video game and most likely correlates with a high number of owners. However, Marchand (2016) also emphasized that a high price and impressive budgets for state-of-the-art game features mostly correlate with higher budgets for advertisements. Consequently, the number of owners might be affected by aggressive marketing strategies. A similar approach was adopted by Kardes et al. (2004), who showed that there is a certain group of users who always associate a high price with high quality. Nonetheless, this does not apply to every user and might even be interpreted as a special user group (Kardes et al., 2004).

These assumptions are in line with behavioral learning theories, which propose that specific pricing triggers expectations that lead to a repeat purchase or not purchase (Rothschild and Gaidis, 1981). Research has shown that price is used as a quality cue, i.e., that price reliance is a tendency of consumers to depend on price as a cue to quality (Zeithaml, 1988). In particular, literature shows a positive response to price when quality is important, i.e., consumers have learned to take price as quality indicator into account and align their behavior accordingly (Tellis and Gaeth, 1990). Especially in this

context, most triple-a video games are related to a higher price, shaping the upper boundary of pricing in video games (Marchand, 2016). Hence, we assume that potential users have certain expectations of the video game due to the price, and therefore a video game with a relatively high price might be associated with higher quality regarding the graphics and game mechanics. For this reason, we hypothesize:

H1: *A higher price of a video game will positively influence the number of owners of a video game.*

Developers can offer additional content for their games, which provides a new revenue stream as users have to pay for the new content. DLC is additional content created for a released video game which can be downloaded as an upgrade (i.e., update through Steam) by a user. It usually includes new worlds or new characters. Here, DLC mostly distinguishes between directly unlocked content (e.g., the character is instantly selectable as an avatar) or unlockable content (e.g., the character has to be unlocked due to special quests). However, in both cases, the curiosity regarding the new content or the motivation to unlock the content increases the average playtime of a video game.

Nonetheless, the content of DLC is noticeably smaller than regular expansions (i.e., a new "arena" vs. completely new games modes), which often leads to a higher number of DLC releases in comparison to regular expansions. For example, the video game "Witcher 3" contains about 19 DLC packages, which combined have a similar playtime to the initially released video game (Steam, 2015). In addition to DLC, the developer can offer in-app purchases, which are usually even smaller packages than DLC. These are small additional items, such as unique virtual weapons or goods, which can provide a direct advantage for a user (Han et al., 2015). However, according to Oliver (1977), those features could also impact the expectations of the users regarding the video game if that additional content is a necessity just to play the video game. If a user is not willing to acquire such content anymore, he may not be able to participate in the virtual world adequately any longer, which makes the video game more and more uninteresting and repetitive (Kane and Alavi, 2007). Such a lack of interest could harm the video game experience for everyone (Farnham et al., 2000). Therefore, the developers should create high-quality DLC and interesting in-app purchases, so that most users are willing to buy such content. If successful, both aspects will tend to increase the average playtime. Therefore, we hypothesize:

H2a: *In-app features will positively influence the average playtime of a video game.*

H2b: *A large quantity of DLC will positively influence the average playtime of a video game.*

A successful video game can be expanded into a franchise (i.e., new games or content in the same universe), which is in the interest of a user if he likes the video game.

However, the realization of sequels and DLC depends heavily on the general success of an established developer. Developers such as Blizzard, Electronic Arts or Ubisoft, with a high number of already published video games, are usually well known to users. Therefore, it is more likely that a game company will produce new sequels and updates in the future as well. Cox (Cox, 2013) showed the significant influence of an established video game developer on the sales of video games. First, the perceived experience (i.e., the game making experience) of users regarding the developer due to published games might be interpreted by users as a quality index for games. Second, a broader history of published games signals to (new) users that more video games will be released in the future, which in turn affects the individual-level decisions (Butler et al., 2014) to buy the video game. Therefore, we transfer the basic assumption of Butler et al. (2014) to the context of video games. Consequently, even though the desire of users to obtain the new desired content only occurs after a satisfying gaming experience, users tend to ensure that this desire can be fulfilled in the first place, i.e., games that could have a follow-up title or content are more favorable. In fact, users are more skeptical about a developer who has only a few titles in the portfolio, as it seems uncertain that such a developer will release sequels and DLC. These assumptions are in line with the associative network theory (Aaker, 1990). Consumers tend to link associations of a brand to form certain expectation towards their products. This, in turn, might create a spillover effect. Therefore, the competence of an established company with a large product portfolio will be transferred to a newly released product (Balachander and Ghose, 2003). Hence, such products appear more attractive to the consumer than a comparable product from an inexperienced or unknown company. For this reason, we also assume that a high number of already published video games signals to a user a certain degree of quality. Consequently, we hypothesize:

H3: *A high number of published video games by the same developer will positively influence the number of owners of a video game.*

3.6.4 Impact of social features

In addition to the primary game features in the previous discussion, there might be influential social features that impact video game success which are observable by users before buying the game and might affect potential consumers based on the basic assumption of network theories, that membership in a network (i.e., a specific video game) is positively influenced when new consumers join the network, expand it and enable social interactions (Katz and Shapiro, 1994).

For instance, in the context of video games, Cox (2013) showed that reviews are a statistically significant success driver. In principle, reviews have become a comprehensible and straightforward method for users to judge the quality and potential enjoyment of an unknown product. Here, users consider user reviews to be even more trustworthy and a good indicator of the overall quality (Chen and Lurie, 2013; Wu et al., 2013). Therefore, if most users recommend a video game through a positive vote, this reduces the perceived risk and cognitive dissonance in a pre-purchase situation for new users. Chen et al. (2004) confirmed that if the number of consumer votes increases, the overall rating reflects the true quality of a product. Consequently, more user votes could be more persuasive. Regarding the ECT (1977), the number of positive votes will be an indicator of the video game quality (Butler et al., 2014). Based on that idea, we conclude and hypothesize:

H4: *A higher number of positive votes of a video game will positively influence the number of owners of a video game.*

Moreover, an online multiplayer feature allows users from different countries to play a video game together. Such a feature is a criterion for social interactions within the video game. Therefore, if a video game has a multiplayer feature, social interaction can usually occur via chat functions or even audio communication (Williams et al., 2007). These technologies allow users to build new social relationships. In addition to the pure video game content (e.g., video game mechanics or graphics), these relationships are perceived as a great benefit by users (Ledbetter and Kuznekoff, 2011). In fact, the participation with each other affects the variety of the users' individual video game experience (Buchanan-Oliver and Seo, 2012). As previously stated, consumers expanding the video game and thus, enabling a social interaction create benefits for the actual consumer (Church et al., 2008; Katz and Shapiro, 1994). Therefore, each video game tournament and each video game quest will be new and unpredictable and other users directly influence the video game enjoyment. Therefore, we propose that the multiplayer feature is a relevant driver of the average playtime of a video game (Cole and Griffiths, 2007; Hsu and Lu, 2004). The livelier the virtual world gets through the participation of other users, the more diversified the video game experience becomes and the longer and more frequently the users play the video game. Based on this discussion, we hypothesize:

H5a: *A multiplayer feature will positively influence the number of owners of a video game.*

H5b: *A multiplayer feature will positively influence the average playtime of a video game.*

Based on the findings of Butler et al. (2014), external discussion forums are a further indication of the willingness to participate in the future. A variety of advantages originated in discussion forums, including access to hints (Galegher et al., 1998), support (Ridings and Gefen, 2004), and access to expert knowledge (Lampel and Bhalla, 2007). Such interactions generated by the community lead to a continuous update of the expectations regarding the future gaming experience among users. The intention to continue to participate in the community and thus to continue to play the video game is highly dependent on such expectations (Jin et al., 2010) and creates a perceived benefit (Katz, Haas, et al., 1973). Therefore, we develop the last hypothesis as follows:

H6: *A large number of discussion threads will positively influence the average playtime of a video game.*

3.6.5 Method, Research Design and Sample

To test our hypotheses empirically, we collected data on 401 video games from Steam, which has 125 million active users and is the largest online video game distribution platform. The system offers popular video games as well as features for communication and social interactions among the users. Steam is increasingly evolving into a common distribution platform, which therefore enables developers to eliminate the need for a specific publisher. From an empirical point of view, the high quality of the data offers a wide range of analytic approaches. In fact, publishers and developers do not make sales records of video games publicly accessible. For this reason, most of the recent studies (e.g., Cox, 2013; Marchand, 2016) which have examined success drivers of video games have collected data from third-party websites such as vgchartz.com. We argue that if those drivers affect the expectation of users and fulfill them, they should the influence the satisfaction with a videogame, which in turn should be depicted by the predicted relationships through a market analysis on the number of owners and the average playtime. Unfortunately, it is not possible to check the validity of such data. Therefore, we have collected our data directly from the popular platform Steam (Steam, 2018). Table 3.6-1 provides an overview of the operationalization and sources of the variables.

Based on our hypotheses, our two dependent variables are the number of owners and the average playtime of the given video game. Steam lists the number of owners who have purchased the given video game on their platform. In our sample, the video game “Counter-Strike” had over 33 million users. The game with the smallest number of users was “Rocket Sky Racing” with only 1,044 users. On average, the video games in our sample had about 1.3 (SD=2.7) million users. Since Steam creates a player profile for each user, it was also possible to determine the average playtime of each video game. In

this regard, “Counter-Strike”, with more than 300 hours, was also leading. Conversely, “Smash Pixel Racing” was only played for 10 minutes. In summary, the video games in our sample were played for 25 (SD= 38) hours on average. For each video game, users can recommend the participation through a “thumb up/thumb down” voting system. This system indicates the number of previous users who recommend the video game. Moreover, users can create an endless number of discussion threads for each video game on Steam.

Table 3.6-1. Variable operationalization

Dependent Variables	**Operationalization**	**Data source**
Number of owners of the video game	Number of users who bought the video game.	https://steamdb.info/
Average playtime	Average number of hours the users played the video game.	https://steamdb.info/
Independent Variables		
Number of positive votes	The number of users who give a positive vote.	https://steamdb.info/
Price	The price at the release of the video game.	https://steamdb.info/
Developer release history	The number of already published games by the same developer.	https://steamdb.info/
Multiplayer	The video game has a multiplayer feature =1, 0 otherwise.	https://steamdb.info/
Discussion threads	The number of discussion threads about the video game.	https://steamcommunity.com/
In-app purchases	The video game has an in-app feature =1, 0 otherwise.	https://steamdb.info/
Downloadble Content (DLC)	The quantity of DLC for the video game	https://steamdb.info/
Control Variables		
Days since release	The number of days between the release and the date of the data collection	https://steamdb.info/
Genre	Each genre was set to 1 if appropriate or 0 otherwise	https://steamdb.info/

We also included this number as an indication of how frequently users discuss the video game. This is a communication function that is heavily used by the users. Some video games have over 100,000 different discussion threads. Furthermore, the price of each video game at its release date was included. Steam also provides information about each developer. With this information, we were able to include the number of previously

published titles. Moreover, we labeled the multiplayer feature and the in-app purchase feature with a nominal scale (1 and 0) according to whether the video game had such implementation or not. We also included the quantity of available DLC for each video game.

As a control variable we included the release date. Thus, we were able to record the period between the release date and the data entry. Because of the rapid decline in the sales volume, in the context of video games, this variable is of particular importance (Cohen, 2014; Moe and Fader, 2001). Nevertheless, we assumed that video games which have been available for a more extended period are more likely to have sold more copies. Therefore, the days since the game was released has been included as a control variable. Consequently, the majority of our sample contains video games which were published between 2007 and 2017. Finally, the genre was also included in our data set as another control variable. In the context of video games, surprisingly little research has been conducted on the feature genre within the discipline of human behavior in information systems. However, comparable research that has been conducted in other fields or industries (e.g., movies and books) provides further evidence that genre has a very important influence on the purchase intention because of personal interests (Austin and Gordan, 1987; Desai and Basuroy, 2005; Elberse and Eliashberg, 2003). Therefore, we included this variable in our calculations as a dummy variable.

3.6.6 Results

To test our hypotheses, a structural equation model was computed in SmartPLS. This decision is based on the reasoning that our variables do not represent classical latent constructs, i.e., do not meet the requirement of at least three items, as well as the fact that we checked whether the available data correspond to our assumed model. Here, existing literature recommends the use of the partial least squares method instead of a covariance-based method (Hair et al., 2013).

The overall model fit can be evaluated as excellent. Both the NFI (.916) and the SRMR (.044) for our data satisfy the recommended thresholds of NFI >.90 and SRMR <.08 (Hu and Bentler, 1999; Lohmöller, 1989). The R-squared (adjusted R-squared) of our dependent variables reports values of (1) “Owners of the Game” .648 (.638), (2) “Average Playtime” .385 (.368), and (3) “Price” .094 (.089). We also checked the variance inflation factors (VIF), which were all less than 2.0 and below the recommended threshold of 10 (Hair et al., 2013), concluding that multicollinearity was not an issue in our analysis. Moreover, one might point out that there might be a significantly high correlation between our two dependent variables “Owners of the

Game" and "Average Playtime". However, our data implies only a medium linear dependency with $r = .436$, $p < .001$. Table 3.6-2 reports the results of our estimations.

First, we are able to verify a positive effect between the price and the number of owners, which confirms our hypothesis H1. Therefore, our results are in line with findings from the findings of Marchand (2016) and Cox (2013). However, results show only a minor positive effect on number of the owners of the video game. We argue that there might be ambivalence of price perception and processing by users. On the one hand, a high price might be interpreted by a specific group of users as a quality index, which is similar to the findings of Kardes et al. (2004). Thus, a high price should generate certain expectations regarding the graphics and game mechanics. With a higher price, the expectation of users regarding the game quality is positively affected, which in turn leads to purchase behavior (Tellis and Gaeth, 1990). On the other hand, lower prices, e.g., due to promotion, general price decrease over time or indie games, might positively impact the general willingness to buy that game, as a lower price reduces the perceived risk. Both reasons might apply to in our results. Consequently, a high impact of price effect cannot be observed.

In addition, it should be mentioned that we added relationships regarding price, DLC and in-app purchases for controlling feature depending changes. However, we only see one effect: DLC do have a significant positive impact on price, which can be explained via bundle prices. Here, a very common strategy is a price increase after adding published DLCs to the core game as one package, which leads to an overall higher price. Yet, this relationship might be self-explaining. However, adding these relationships allows us controlling more effectively for the average magnitude of the discrepancies between observed and expected correlations as an absolute measure of model fit criterion (Hu and Bentler, 1999).

Regarding in-app purchases, we can confirm a significant impact. Consequently, H2a is supported. One of the most important instruments of free to play business models is also reflected in our data as a crucial influencing factor of the average playtime. It becomes clear that with optional purchases (e.g., crystals, gold coins), the average playtime can be significantly extended. It can be assumed that an increase in "invested" playtime will in turn retrospectively increase the willingness to make further purchases. This phenomenon has already been confirmed by Han et al. (2015) in the context of mobile gaming apps. Moreover, we found support for our hypothesis H2b. DLC had a significant influence on the average playtime. Usually, each DLC package increased the average playtime by about an hour. Based on the prior discussion, it seems reasonable for game developers to offer both types of additional content, i.e., DLC and in-app purchases.

Table 3.6-2. Report of the results

	Stand. Coef.	**T-Statistic**	**VIF**
Number of owners of the video game (NOV)			
Number of positive votes → NOV	.736***	13.660	1.025
Days since release → NOV	.215***	4.095	1.207
Developer reputation → NOV	-.07**	2.900	1.139
Multiplayer → NOV	.076**	2.034	1.255
Price → NOV	.077*	2.041	1.311
Adventure genre → NOV	-.033^{ns}	1.496	1.103
Casual genre → NOV	-.051^{ns}	1.946	1.131
Strategy genre → NOV	-.092***	4.217	1.084
Racing genre → NOV	-.010^{ns}	.324	1.080
RPG genre → NOV	-.038**	2.629	1.116
Simulation genre → NOV	-.062**	2.347	1.183
Average playtime (AP)			
Discussion threads → AP	.386***	3.541	1.052
DLC → AP	.229***	3.825	1.159
Multiplayer → AP	.189***	6.463	1.211
In-app purchases → AP	.107**	3.115	1.102
Adventure genre → AP	.146*	2.156	1.138
Casual genre → AP	-.016^{ns}	.590	1.130
Strategy genre → AP	-.047*	2.120	1.107
Racing genre → AP	.073*	1.593	1.076
RPG genre → AP	-.016^{ns}	1.300	1.092
Simulation genre → AP	-.020	.876	1.182
Price (PR)			
DLC → PR	.277***	5.841	1.040
In-app purchases → PR	.088^{ns}	1.783	1.040

Note: *N = 401, PLS algorithm: maximum iterations = 300; bootstrapping procedure: cases = 499; Samples = 500; *significant at p < .05, **significant at p < .01, ***significant at p < .001.*

However, the present results suggest that DLC dominates in two ways in-app purchases. First, statistically, we found that the effect size of DLC is almost twice as high as that of in-app purchases and thus has a stronger effect on the average playtime. Second, based on prior reasoning, the potential hazards, e.g., a player cannot participate anymore, are less pronounced for DLC than in-app purchases because of their "nature" of implementation, i.e., additional optional content vs. coins or crystals to continue the game. However, in contrast to DLC, in-app purchases might guarantee a constant

income stream even from the same user. While the transaction of one DLC is completed with one investment, repurchases are very likely in the case of consumable items. Therefore, from an economic point of view, the second option seems more promising. Consequently, as both methods seem to be powerful, a balanced implementation seems the most reasonable strategy for game developers.

The importance of the number of previous titles from the same developer is significant. However, as we observe a negative impact, we propose that a high number of video games previously released negatively affect the number of owners of a video game, and therefore we cannot confirm hypothesis H3. Based on the findings of Dimoka et al. (2012), we expected that a developer with a large number of already published video games reflects a certain competence to be able to develop a high-quality video game. However, based on our findings we propose that only to a certain degree of previously published video games consumers are positively affected because of a base amount of titles in the portfolio (Butler et al., 2014; Cox, 2013). Yet, a higher amount of games in the portfolio might indicate that the publisher does not specialize on a specific genre or publishes "everything" so that quality of new video games might suffer and thus, lead to reduced purchase confidence of consumers.

Furthermore, our hypothesis H4 can be confirmed by our data. As expected, a high number of positive votes positively affects the number of owners of a video game. The more positive votes can be taken into account by users, the more they tend to buy the game. We can show that the pure number of positive votes, i.e., recommendations by other users, provides the highest explanatory power for the number of owners of the video game. The importance of user reviews was examined in numerous publications. In the context of video games, the importance of this variable has been underestimated in the literature so far. As previous studies have shown (Chen and Lurie, 2013; Wu et al., 2013), user reviews are considered particularly believable and in our context, create an expectation that the specific video game has a high quality. Consequently, it will reduce the perceived risk and cognitive dissonance in a pre-purchase situation for new users.

We can also confirm our hypotheses 5a and H5b. A multiplayer feature increases the average playtime of a video game and the number of users, which allows us to confirm the findings of Marchand (2016). Based on prior discussion, it seems that the participation of other users creates a livelier virtual world, and therefore the video game experience becomes more enjoyable. Consequently, users tend to purchase such video games more frequently.

Finally, we could also find a significant influence of the number of discussion threads on the average playtime of a video game. If the community regularly discusses a video game, they usually share knowledge and support among each other (Lampel and Bhalla,

2007; Ridings and Gefen, 2004), which leads to encouragement to play the video game again. This variable has not yet been investigated in previous research. However, the standardized regression coefficient indicates that this variable is the most influential factor to explain the variance of the average playtime. Consequently, we can confirm our hypothesis H6. Finally, our control variable "Days Since Release" has also a highly significant impact on the number of owners of the video game, which implies, as expected, that a more distant release in the past leads to a higher user base, however, the social factor of positive review of others gamers has the threefold positive impact considering the standardized coefficients.

By analyzing the genre, we were able to identify some genres that are played significantly longer than others. In fact, most of the games in our sample had their origin in the "action" genre, which consequently became the basis for our dummy analysis in the regression model. Based on the significant differences between some genres, the integration of this variable as control variable for our model was useful. Therefore, we could show that the basic assumptions of previous studies on the impact of the genre can also be applied to the context of video games (Austin and Gordan, 1987; Desai and Basuroy, 2005; Elberse and Eliashberg, 2003). Nonetheless the standardized regression coefficients indicate that those dummy variables are not as important as other independent variables.

3.6.7 Discussion and Conclusion

Implications for future research and Limitations

The results of the presented study confirmed most of our predicted hypotheses. Current technologies and multiplayer features enable social interactions, relationships and communication between users from different countries and continents. Our results confirm the importance of such features for the purchase and re-usage intention. Video games are more than just a product that a user buys at a fixed price and enjoys playing alone or with known friends. Instead, they become more a social experience where people from all over the world play together, communicate and share knowledge. Therefore, future research, as well as management, has to address these social success drivers. This is especially important, since user reviews, the number of discussion threads and multiplayer features showed to be the most influential variables in our models. Despite these results, our research approach still has its limitations. The R-squared for both models showed that our predictors contribute significantly to the variance explained. Nonetheless, we argue that drivers of success that were not covered by our Steam data exist. For instance, production and advertising budgets might also be

important to explain the success of a video game. Via studies on motion pictures, research has shown that the production budget and the advertising budget are strongly correlated with the box office (Hennig-Thurau et al., 2009). Unfortunately, such data is not available for video games, and therefore we were unable to include these aspects in our study. However, we assume that additional data would increase the explanatory power of our research model. Furthermore, we cannot make any direct statements about the video game sales in retail stores nor how they relate to online sales. However, as Steam is the largest online distribution platform for video games, we assume that there is a certain correlation between the sales volume in retail stores and the number of owners of a video game stated by Steam. Video games that are in high demand in retail stores and presented conspicuously are also likely to be frequently purchased online via Steam. Furthermore, our statements are limited to video games for personal computers. However, browser and mobile games are also becoming tremendously popular (Pocketgamer, 2017), although such video games often have a completely different revenue model. The most successful games within this category are usually freemium video games, i.e., games that are free to play, and users will have to pay for additional available content (Liu et al., 2014). Although many of our predicted success drivers overlap with these games, we argue that this special revenue model needs further research. Here, the connection of entirely free content and in-app purchases might be differently processed by users in comparison to initial costs to access the video game and additional content. Although the effect of time is already taken into account by our control variable “Days Since Release”, it is indeed reasonable to examine an interrelationship of the other variables included in our model over time. It is conceivable that a game with a high advertising budget was initially purchased many times on the release date (e.g., Marchand, 2016). Based on a high sales volume, such success leads to a higher number of positive reviews and discussion threads, which in turn attract new users. To investigate this phenomenon, future research could analyze these data with new video games over a certain period.

Moreover, our results indicate a negative impact of a high number of previously published video games by the developer. Based on previous research, we expect a certain number of published games as an indicator that might reduce risk prior to a purchase (Butler et al., 2014; Cox, 2013). Yet, we can only observe a negative impact of previously published games, so that we assume there might be a relationship that can be described by an inverted u-shape. Future research should therefore investigate an optimal amount of games in a portfolio that on the one hand reduces risk for new customers and acts as a quality indicator, however, on the other hand does not cause the amount of games to act arbitrarily.

Moreover, based on the finding of Butler et al. (2014), video games are progressively enjoyed as a collaborative social experience. Through their involvement, users become creators of the gaming experience (Buchanan-Oliver and Seo, 2012), and the perceived value of those multiplayer and communication features goes beyond the traditional gaming experience (Downie et al., 2008). For that reason, future research needs to investigate aspects of social interaction and communication in more detail. We have already addressed the importance of "Lets-Play" videos for different streaming platforms (Youtube, 2017). Particularly successful channels and broadcasters certainly act as influencers and encourage potential users to buy a video game. In particular, the impact of these social media channels should be investigated thoroughly. However, it is also conceivable that some users are also acting as influencers in discussion forums. Further research is required to identify users and topics that directly lead to new purchases or increase the average playtime of a video game. Moreover, our research model did not take into account relations between video games and related events. For instance, professional matches in video games such as "Counter-Strike" are covered by popular events, i.e., the ESL-One series in Germany (ESL, 2017). Future research could investigate external events as additional success drivers. We argue, that games which have a higher number of active gamers might also attract companies that build an event ecosystem around them, i.e., tournaments. Consequently, games that are covered by such events might have a retroactive effect on sales of games and therefore on owners of a given video game.

Finally, we proposed causal relationships based on previous research and basis theoretical assumptions. However, taking research on movie success into account (Hennig-Thurau et al., 2012), we argue that dynamics of relationships might also apply in this context. For instance, we proposed an impact of discussion threads on the number of owners of the video game. However, one might also argue that indeed a higher number of owners might affect the number of discussion threads, because more consumers in total want to share their opinions (Hennig-Thurau et al., 2004). Nonetheless, our research data was based on single a temporal timeframe, i.e., a snapshot, and thus does not offer a potential investigation of reciprocal effects. Though, future research should take our results as foundation into account, however, investigate the dynamics of those success drivers and factors and how each of these central variables might affect each other over a given timeframe.

Implications for management

Based on the previous literature, if a game offers a certain level of quality, developers should be encouraged to charge a respectively higher price for their product. Potential users will see the price as an indicator of the quality of the game and therefore be more

likely to buy the game (Marchand and Hennig-Thurau, 2013). However, based on our data, we can only confirm a small direct positive impact of a higher price on the number of owners of the given video game. Here, we argue that a higher price mostly correlates, for instance, with higher production budgets and especially with a higher effort in marketing. Moreover, under the already mentioned development of indie games, triple-a games are under special pressure to deliver exceptional performance for a given high price. Therefore, based on our results, we do not recommend relying only on price as a quality index.

Our results show that it seems reasonable for game developers to offer DLC and in-app purchases. However, based on our findings and the existing literature, DLC might dominate in-app purchases in two ways. On the one hand, we found a stronger effect on the average playtime, which leads to the conclusion that DLC keeps players in touch with the game longer. On the other hand, based on the existing literature, hazards are likely to be less pronounced for DLC than in-app purchases because of their "nature" of implementation, i.e., additional optional content vs. coins to continue the game. According to Oliver (Oliver, 1977), the latter feature could also impact the expectations of the users regarding the video game if that additional content is a necessity just to play the video game, which might ultimately lead to users quitting the game (Kane and Alavi, 2007). Conversely, in-app purchases might guarantee a constant income stream even from the same user. While the transaction of one DLC is completed with one investment, repurchases are very likely, e.g., for consumable items. Therefore, from an economic point of view, the implementation of in-app purchases seems more promising. Consequently, based on our results, we recommend using both ways of providing additional content as a development strategy for games because of the positive impact on playtime of both approaches. Nonetheless, developers should be more careful in the case of in-app purchases. While the benefits are twofold, i.e., positive impact on playtime and potential continuous review stream, they come with the costs of potential hazards that can lead ultimately to users quitting the game. Therefore, if the primary goal is to keep users playing (e.g., until the next release of a game add-on), it seems more reasonable to use DLC instead of in-app purchases.

Furthermore, we were also able to show that the number of published games of a developer might affect negatively the success of a new game. However, a major problem for new developers since they are unable to profit from a broad portfolio of games and reputation. Therefore, it is recommended that new developers should cooperate with established developers and use their reputation to get started, i.e., signaling due to the explicit naming of the co-developer. Therefore, bundling might directly tackle the issue of perceived risk, as some previously published games are presented to the potential customer. Yet, we strongly recommend based on our results to keep a streamlined

portfolio to negatively affect consumers due to an uncertainty regarding the product quality.

Furthermore, it is important to take feedback from users seriously. If errors are reported through reviews, they should be eliminated as soon as possible. Hopefully, this will lead to a more positive rating of the video game and thus potentially attract new users. Moreover, it makes sense to motivate users to give a positive review of the video game. Through push messages, users could be encouraged to rate the video game and thereby unlock access to special items in the video game itself. If users are not willing to evaluate the game in public, developers may instead ask for brief feedback as a direct message. That way criticism could also be recorded.

The appeal of online multiplayer features is a critical aspect to explain the success of video games. Butler et al. (2014) described the characteristics of users in online communities. The users of video games could connect, exchange information and support themselves through multiplayer features and chat functions. In general, these social interactions create benefits for each user within an online community as well as users of a given video game. These perceived benefits enrich the overall gaming experience. Based on our data, we recommend implementing such features in every new video game, even if integration tends to be more expensive. To absorb the economic risk that can arise from the production of high-quality video games, this multiplayer feature should always be implemented in the future. Even for video games that are traditionally focused on a story-driven single-player mode, the implementation of additional multiplayer features is highly recommended to enhance the users' experience. Therefore, each video game needs at least one or two features that allow users to interact with each other and allow the creation of social connections. Since there are numerous options available, developers should try to implement a suitable solution in the early stages of development to ensure appropriate implementation.

Moreover, developers need to be aware of the importance of potential influencers on social media platforms and discussion forums. Users can follow discussions in numerous online forums or streaming services to obtain new information about the video game, e.g., the location of hidden treasures, new items or weapons. It is important to integrate those communication channels in the marketing strategy consciously, as this interaction continually creates an incentive to play the video game again.

4 General Discussion and Conclusion

4.1 Core Results and Conclusions

Digital environments have a huge impact on consumers, such as shaping their daily lives and routines and, consequently, their related behavior. They affect how businesses align their activities toward the needs of those consumers. In addition, these environments will continue to have a considerable influence and achieve ubiquity in years to come (Hootsuite, 2019). Thus, both marketing academia and practice have recognized their importance and how these environments have altered the way how consumers behave.

Overall, the thesis is grounded on six general research objectives, based on relevant phenomena within subareas of digital environments. Here, this thesis, with its six essays, addresses both areas of academic research and practice, enhancing the knowledge regarding cognitive processing as well as the behavior of consumers in digital environments, and, in turn, offers implications and strategies for businesses. The six essays show each specific research objective in each case: 1) implications for research; 2) implications for management; and 3) further research recommendations. These subareas are slightly independent but are consolidated within digital environments. Thus, in order to specifically answer each research objective and to summarize each selected phenomenon for the given objective, the following chapter summarizes the key results of each essay and discusses the main conclusions of the findings. Consequently, this chapter summarizes the foundation for deriving the implications of the research, for identifying its limitations, and for suggesting future research recommendations.

Essay 1: Does Mental Construal Influence the Perception of Incongruent Advertisement? The Role of Psychological Distance in Ad Processing

The first research objective was to optimize the advertising processing of consumers in digital environments. Hereby, the first essay has set itself the goal to not only identify ways to address the first research objective, but also enhance the knowledge in general of advertisement processing of consumers for academia and to deduce meaningful strategies for advertising practice (e.g., advertising agencies) and businesses, regarding brand placements. The first essay introduces psychological distances as a novel variable, which not only contribute to expanded knowledge regarding advertising processing but also introduces a useful, in-practice mechanism to support consumers dealing with advertisements in digital environments, thus, enhancing positive effects on brand perception. The first essay extends construal level theory to the context of advertising and congruency processing and stresses the importance of distant time and spatial distances in this context.

F. Nimmermann, *Congruency, Expectations and Consumer Behavior in Digital Environments*, Handel und Internationales Marketing Retailing and International Marketing, https://doi.org/10.1007/978-3-658-28421-3_4

The findings derived from three empirical studies support the general assumption that a more abstract mindset, triggered by high psychological distances within an advertisement, leads to more positive processing in a context-incongruent brand. More precisely, a congruency between an abstract level of mental construal and corresponding abstract information (i.e., a context-incongruent advertisement) leads to a higher perceived overall congruency of the advertisement and context as well as to a higher perceived credibility of the advertisement; this, in, turn positively influences the attitude towards the advertisement as well as the interest to seek additional information regarding a given product or brand. The results of the essay also indicate a contrariwise effect for context-congruent brands; here, a low psychological distance anchor leads a more concrete mindset, which prefers concrete, well-fitting information. Thus, the congruency of a concrete mindset and advertising input leads to more positive processing, concluding that congruent brands should anchor their advertisements to low psychological distances. Hence, the implications and extension of construal level theory in context of advertising not only hold true for context-incongruency, but also for congruent brands, thus, offers not only new insights regarding context-incongruency but also for the well-established assumptions of context-congruency for advertising.

Essay 2: Vividness of Product Images in Online Stores: The Role of Delivery Time

The second research objective is related to optimizing consumers' information processing when shopping in digital environments. Therefore, this essay introduces psychological distances within the context of online shopping and again strives for two primary goals: first, to address the research objective by enhancing knowledge about influential factors within this shopping context, and second, expanding current literature by not only interpreting the delivery time as a barrier for online commerce, but also by deducing it as psychological distance and investigating the impact on information processing. Hereby the essay expands once more on construal level theory in a new context for further research and introduces meaningful strategies for practitioners such as e-commerce shops.

The findings are derived from two consecutively conducted experiments support the supposed relationships between the vividness effects of product pictures in online stores and a given mental construal induced from a given delivery time. In particular, results show that higher delivery times lead to a higher mental construal and shoppers prefer more abstract product images. More precisely, in case of congruency in the level of mental construal and vividness, the intention to buy the given product is positively influenced. In addition, this congruency also positively affects the attitude towards the product. In contrast, in case of short delivery time more positive effects on both central variables can be observed for the condition of concrete product presentations (e.g., usage situation). Furthermore, the essay contributes to a more profound understanding of those

effects. First, results indicate that, as predicted, mental imagery is of particular importance when explaining the processing of those product pictures; however, the essay expands this knowledge by showing that only the ownership imagery is affected by an interplay of psychological distance and vividness and, thus, that time affects ownership perception. Second, the essay also indicates the impact of the mental imagery ability on the overall processing and postulates that the described effects vanish if a given shopper does not have sufficient ability for mental imagery. Hence, the essay shows these boundary effects. In summary, this essay underlines the importance of delivery time in the context of online shopping not only as a barrier, but as an important factor that shapes the overall information into a consumer buying process in digital environments.

Essay 3: Is It Human? The Role of Anthropomorphism as a Driver for the Successful Acceptance of Digital Voice Assistants

The third research objective was associated with optimizing interaction with digital voice assistants in digital environments. This essay sheds light on the effects of a congruency between smart assistants and human-like characteristics in relation to usage intention. More precisely, the essay investigates human-like characteristics as drivers of technology acceptance building on the CASA paradigm in comparison to more classical drivers derived from the unified theory of technology acceptance. Hereby the essay expands current research in technology acceptance by consider human-like characteristics as acceptance driver and introducing a more holistic approach of acceptance for this kind of technology. In addition, the essay offers managerial implications built on this foundation.

The findings derived from the study support the central assumption that human-like characteristics are not only perceived when using smart assistants such as Apple's Siri, but that it also affects the likeability of those assistants, which, in turn, have a positive impact on usage intention. Regarding the variables under review, results show that both animacy and perceived sociability affect likeability; however, the strongest effect is triggered by the perception of a human-like fit and, thus, congruency between the actual user and the assistant regarding human-like characteristics. Classical drivers of technology acceptance show an impact on usage intention in the same way. Here, performance expectancy and habits have the highest influence on the intention to use smart technology. Remarkably, previously important drivers (in technology acceptance in general) such as social influence and facilitating conditions do not impact the actual intention to use a given voice assistant at all. In summary, the essay offers new research perspectives by expanding classical technology acceptance theory by introducing human-like characteristics as acceptance drivers, and, therefore, a more holistic

approach toward acceptance research for this kind of technology. The essay additionally offers new insights and explanations for previously established drivers, which are only of minor importance for smart assistants. Finally, practice and businesses dealing with voice assistants in digital environments (e.g., automated support on websites) obtain important insights for voice assistant design.

Essay 4: Online Complaints in the Eye of the Beholder: Optimal Handling of Consumer Complaints on the Internet

The fourth essay focuses on the research objective related to enhancing the understanding of complaint management considering information-seeking web consumers. Hereby, the essay is built on a foundation regarding complaint management knowledge that takes the actual complainant into account; however, these relationships are examined by focusing on the "silent observer" of complaint management. Hence, the primary goal of this essay is to investigate how strategies for service failure recovery regarding answering to complaints on the web affects behavioral and attitudinal outcomes of information-seeking consumers. The essay gives a first insight regarding cognitive processing mechanisms in this context. Hence, by building on these new insights, future research can further investigate the similarities and differences between these two central audiences of complaint management in digital environments. In addition, the essay offers meaningful strategies for businesses in how to handle complaints by considering the strategies regarding the complainant as a status quo and potential customers seeking information on the web.

The findings derived from the preliminary study support the general assumption that consumers seeking information prior to a purchase decision are affected by different complaint handling strategies to an unknown complainant. Thus, responding to a public complaint is not only important for service recovery of the current customer, but also to positively stimulate prospective customers. Results show that combining a redress and apology strategy leads to the most positive behavioral and attitudinal outcome. In fact, this essay can demonstrate that a kind of "service-recovery paradox" also occurs in cases of silent observers. Here, results show that this combination positively affects central outcomes such as purchase intentions, attitudes and trust towards the retailer, and the intention to speak positively about the encountered service recovery in comparison to the condition during which no service failure happened. Hence, one of the most powerful strategies for the complainant is also beneficial for the silent observer. However, contrary to this, the strategy of a private contact, which is related to a high level of attentiveness for the complainant, leads to the furthermost negative effects, which even go beyond the complete absence of a response and passive handling of a complaint. Consequently, the essay identifies a gap between a favorable strategy for the recovery of the complainant and the worst strategy for the prospective customer. The

essay also sheds light on cognitive processing and shows that in the case of the observer, distributive fairness perception is more important in comparison to the complainant for whom past research indicates a higher importance of interactional justice evaluation. However, results indicate similarities in the importance of overall expectation-based satisfaction with the response and perceived credibility. In summary, this offers new perspectives for further complaint management research and suggests important strategies to businesses in digital environments.

Essay 5: Differences and Similarities in Motivation for Offline and Online eSports Event Consumption

The fifth research objective was to broaden the knowledge regarding the differences in motivation for electronic sports consumption between offline (e.g., event on-site) and digital environments (e.g., event stream). In particular, the fifth essay investigates different motivation dimensions for sports consumption and how they shape the choice for consuming eSports in a digital environment or given on-site event based on expectations of fulfillment. Hence, the essay focuses on forms of consumption that have rarely been assessed as a potential influence on attendees and, thus, by taking eSports into account, offering new insights for research and practice in this context.

The findings derived from the study support the central assumption that the choice for a specific form of consumption of a given eSports event is also driven by the general motivation for sports consumption. The results show that the motivation to seek for social elements is more prone in case of offline events and, hence, seems to fulfil expectations in the venue surrounded by other fans and attendees. In contrast, results indicate that consumers seeking to gain additional knowledge (about the game viewed) have a more detailed view on what is happening during the game, and gaming aesthetics, in particular, are more likely to choose the digital environment as a source for the event. One might conclude that watching an event in a stream, in most cases at home in front of the personal computer, laptop, or internet-enabled television, enables consumers to have a more complete and detailed experience of the match. However, attending the event on site seems to foster social experiences (e.g., cheering with the crowd) and is thus preferred by the consumer who seeks that social experience. Results also indicate that both forms of consumption are not differently chosen based on escape or drama needs. Additionally, results show stable decision making based on previous choice of consumption form and motivation. When consumers attend online, they indicate a greater intention to also watch the next event online. However, offline attendees show a lower, although, very close intention for consumption. In the context of offline events, offline attendees show a higher interest in participating in another upcoming offline event; however, previous online attendees show a refusal of offline consumption.

Finally, results indicate that the chosen consumption form has no effect on shaping attitudes toward the event. In summary, based on different motivations and, thus, expectations, satisfaction with the event is affected and impacts further consumption form decisions. Hence, this essay sheds light on the decision on the forms of event consumption in the context of offline and online consumption and expands, therefore, event motivation research by stressing differences in consumption form decisions based on the motivation of consumers. Practice also gains meaningful insights into how to optimize a given event for a motivation-based audience.

Essay 6: The Need for a Community: The Impact of Social Features on Video Game Success

The sixth research objective concentrated on investigating the impact of social elements as online community in digital environments as success drivers for video games. More specifically, this sixth essay explores the impact of core game features (e.g., genre) in comparison to social elements (e.g., multiplayer features) on two central success factors of videogames: number of actual owners and the average playtime of a given game. Thus, the essay expands current research in video game success, not only by focusing on social elements but also by empirically verifying the impact of core and social video game elements based on market data on central success factors. By doing so, the essay derives managerial implications for further game development.

The findings derived from the analyses of the market data indicate that most assumptions regarding the impact of the given elements on both outcome variables hold true. Results show that both the reviews of other gamers on a distribution platform as well as the multiplayer feature itself positively affect the number of actual owners of a video game. Regarding the average playtime, results demonstrate an impact of the discussion threads and multiplayer features on the average playtime. More interestingly, the number of positive votes as well as the discussion threads have the highest impact on the variables under review and, therefore, emphasize the importance of social elements. Furthermore, this is also important for single player games, because these drivers are independent of the actual game. Thus, even games that are conventionalized as a single player experience are affected by social drivers in which they are embedded. Further research gains, therefore, important insights because of this more holistic view on video game success. In addition, game developers and distribution platforms gain meaningful findings for further game development by considering these social elements.

Concluding Remarks

By developing and investigating research frameworks as well as addressing research needs in digital environments in specific areas, this thesis contributes to fill relevant gaps in the current literature. The results of the presented six essays, build on

experimental or field studies as well as market data. They are based on consumers' perceptions, processing, and behavior in advertising e-commerce as well as technology usage in digital environments and contribute in the advancement of academic research knowledge and marketing practice. Each essay builds on varying samples and research methodologies and provides specific answers for the understanding of consumer behavior across areas of digital environments, contributing to the understanding of relevant phenomena in these areas.

4.2 Research and Theoretical Implications

This thesis offers several implications and theoretical extensions for research for each phenomenon in the subareas of digital environments under review. Hereby the thesis was based on the general assumptions of congruency and expectations effects and, thus, has contributed in these fields of research particularly by addressing the six research objectives. The first three essays demonstrate how congruency perception and processing, and, therefore, a match between (unwitting) expectations and incoming information shape consumer attitudinal and behavioral responses in digital environments. In addition, the second three essays investigated expectation fulfillments as drivers for consumer-related outcomes.

The first two essays introduce psychological distances as influential factors that; (1) alter congruency perceptions in digital advertisements; and (2) shape the preferences for congruent information in online shopping. Furthermore, in the third essay, congruency regarding human-like characteristics was investigated as a success driver for technology acceptance. Essay four was inter alia based on expectations of consumers in digital environments regarding the handling of public consumer complaints by businesses. Essay five investigated how expectations, conceptualized as motivation for sports consumption, differ between offline and digital environments and, consequently, shape the choice of the consumption form for an event. Finally, the last essay built upon expectations for video game elements, especially social elements, as a driver for central success factors. In conclusion, this thesis offers theoretical extensions and sheds light on phenomena in digital environments in numerous ways.

First, psychological distances affect the processing of advertisements and, thus, assumptions from construal level theory (Trope and Liberman, 2010) hold true for advertisement research. The present work expands previous research by showing effects on congruency processing: The evaluation of context-incongruent information is affected by psychological distances due to altering the mental construal. High psychological distances lead to a more positive evaluation of context-incongruent

advertisements. In particular, psychological distances affect the processing of context-congruency advertising and accordingly, the overall evaluation of the advertisement such as credibility. Findings, therefore, underline the relevance of a more differentiated perspective on advertising perceptions as temporal, spatial, social, or hypothetical distances (Trope et al., 2007), which might have a greater role in the overall processing. Second, associated with these results, the present thesis could not only show how congruency processing is altered by psychological distances, but also how information preferences are shaped. Specifically, temporal distances should not be only interpreted as a barrier, but as an influential factor of information processing for online commerce. In particular, preferences are affected by abstract or concrete information such as pictorial product presentations on a given website (i.e., related to the vividness). This perspective of online retailing suggests that psychological distances matter for the processing and behavior of consumers and, subsequently, might affect other areas such as assortment size perception (Goodman and Malkoc, 2012). The results offer further insights in this context on the impact of psychological distances on consumers' ownership perceptions. Another noteworthy finding for further theoretical considerations is that a boundary condition has been identified. Previous research introduced the consumers' ability for mental imagery, which, in this context, could be identified as a moderator that can enhance, but, also, let vanish the proposed impact of psychological distance. Third, for technology acceptance, this thesis introduced congruency effects of human-like elements for voice assistants. In particular, the classical model of the unified theory of technology acceptance has been extended by additional drivers concerning a human-like congruence based on the CASA paradigm (Nass et al., 1994; Venkatesh et al., 2012). The results support the significance of a combination of pure technology-related (e.g., performance expectancy) and human characteristics (e.g., perceived sociability) to explain the motivation for using a smart assistant. This suggests that it is important to include human characteristics for a perceived human-like congruency to explain consumer behavior and, therefore, to have a more holistic approach towards technology acceptance, which is offered by this thesis. Consequently, this thesis contributes to the theory by introducing congruency effects to psychological distances and technology acceptance and, hereby, by expanding the construal level theory to new contexts regarding advertising and e-commerce research as well as expanding, content-wise, established technology acceptance theory.

Fourth, this thesis extends existing research on complaint management by focusing on consumers searching for additional information on the web. More precisely, the thesis investigates how these consumers are affect by service recoveries of business after a public consumer complaint as a "silent observer". Here, this work shows that this group of consumers evaluates and behaves quite similarly to the actual addressees of the

service recovery. Expectations prior to a purchase lead to different needs in the actual answer of a retailer (Davidow, 2003). Here, the thesis not only provides a first insight on how those consumers perceive and process the handling of established and theoretical sounding strategies, but also on a different weighting of previous knowledge and theories, such as justice concepts (Bies and Moag, 1987; Blodgett et al., 1997; Cook and Hegtvedt, 1983) for prospective customers. Fifth, the present thesis offers explanations regarding consumer motivations in sports consumption and event management research in digital environments. In particular, the results extend previous research (e.g., Hamari and Sjöblom, 2017; Trail and James, 2001) by showing that, in the case of eSports, the motivation of general sports consumption differs between pure offline consumption and following a given event online. This suggests that it is important to consider the actual motivation for event participation to explain consumer behavior, both in a digital and offline world. By investigating two dimensions of attitude (i.e., hedonic and utilitarian) this thesis extends previous research and offers insights in differences between consumption forms and their impact on shaping attitudes towards a similar event (Gursoy et al., 2006; Salehan et al., 2017). However, results indicate their independency of the actual consumption form. Sixth, the thesis offers advances in knowledge and theoretical explanations for video game success research. Specifically, based on expectation–confirmation theory (Oliver, 1977), the results of market data analyses suggest that considering social elements alongside core elements such as DLCs is important to explain video game success. In particular, multiplayer features, reviews and discussion threads (e.g., lively discussion and offers like additional content) of other consumers on a given distribution platform are positively affecting sales. Furthermore, the thesis introduces the average playtime as a success factor and empirically investigates the drivers affecting it. Hence, it indicates that research in this context should include this overarching issue of social interaction, especially as the results show their impact on non-multiplayer-related games.

In summary, this thesis offers further understanding and a deeper knowledge of consumers' behavior, cognitive processing, and attitudinal responses in digital environments. In six different subareas, this thesis offers several implications for research and theoretical extensions to specific phenomena. On this foundation, the thesis offers, in each essay, several implications for practice and further research recommendations.

4.3 Managerial Implications

The results of the studies within this thesis underline the importance for marketing practice to address the specific needs of each subarea in digital environments. Hereby the thesis offers multiple meaningful insights to address these requirements and leverage the business activities. In doing so, this thesis was not limited to a specific topic or single area but took a broader approach to address important subareas in digital environments. Hence, with the following implications, manifold stakeholders dealing with marketing related issues in different subareas of digital environments are addressed. Consequently, this thesis provides new insights and implications for managers in six main domains: (1) advertising placement; (2) e-commerce product presentations; (3) the design of digital smart assistants; (4) service-recovery strategies for public consumer complaints; (5) eSports event design; and (6) video game design.

For the first subarea of advertising, marketing practice (e.g., advertising agencies) should be aware of the impact of psychological distances on advertising processing and, therefore, consider e.g., time or spatial distance surroundings for advertisement placement. As previously depicted, advertising in digital environments such as YouTube is rising and seems to be a necessity for businesses to position themselves. However, with the masses of diverse content, the hazard of context-incongruity rises. Advertising networks offer placements, but cannot always guarantee where (e.g., in which video or which game) the advertisement fosters this hazard. Practice can use the findings of anchoring their advertisement to different distances to ensure more positive advertisement processing. In particular, if the placement of the advertisement is anticipated as incongruent, distance anchors should be used by referring to a distant time within the advertisement. In contrast, it is beneficial to anchor to a closer moment in time to enhance the effects of high context-congruency. Furthermore, taking these implications into account is not only beneficial for the advertising source (i.e., the business that advertises) but also for the media vehicle. For video games, placing an advertisement that is processed as more congruent, leads to retroactive effects towards the game so the implementation of the advertisement is more positively processed. In summary, this thesis suggests benefitting from the enhanced processing of advertisements due to the use of psychological distances within marketing advertising practice.

Within the second subarea of e-commerce, retailers profit from insights to enhance shoppers' experiences on websites or mobile apps, consequently, enhancing their sales. In most cases, delivery time is interpreted as a barrier for online shopping and a disadvantage for online commerce. However, the present thesis suggests viewing delivery times as a driver, which shapes how information is processed, and, consequently, in which form it is preferred. Hence, three managerial recommendations

should be considered. In general, it seems beneficial to use dynamic systems for pictorial product presentations, which adapt to a given delivery time for the product. In particular, in case of short delivery time, concrete, more vivid, product presentations should be used. In contrast, if the product has a higher delivery time abstract, less vivid product presentations lead to a more favorable outcome because the purchase probability is higher. Thus, retailers might adapt their product pictures on websites or in mobile applications by considering the delivery time. This general suggestion leads to two additional scopes of application. First, browsing and purchasing a product is connected to a reference point. Purchase decisions are not always made immediately, but are sometimes planned over a longer time, for instance, in the case of seasonal products. Consequently, retailers should match product pictures with their reference point, for instance, if a distant usage can be anticipated (i.e., winter jacket bought in summer because of a sale), applying less vivid product pictures are beneficial. Second, retailers might sell products when product pictures are abstract, such as surprise boxes. Hence, an adaption to the delivery time is not readily possible. Retailers in this context should not artificially increase delivery time, but use other dimensions of a high psychological distance, e.g., in the product description, to trigger a more abstract mental construal of the consumer such that the abstract product picture fits the abstraction level. As an example, referring to the country of origin of the products, as far as the country is distant to the shoppers' country, it will evoke a spatial distance. Third, retailers should be aware that mobile devices are also used for price comparisons at the point of sale in an offline environment. In this case, even a short delivery time might be perceived as "long" because the reference point is the immediate availability directly in the store. Hence, retailers could fall back on localization services of their mobile app to adapt the product picture accordingly to the anticipated processed delivery time, i.e., offer less vivid pictures even with a short delivery time. In conclusion, this thesis suggests that e-commerce practice should have a more distinct view on delivery time and use it as a basis for adaptions in their shops in digital environments.

For the third subarea dealing with voice assistants, the thesis stresses that businesses creating, offering, or implementing voice assistants in their products should be aware that human-like characteristics play an important role in stimulating positive usage intention. In particular, this thesis proposes to focus on implementing characteristics such as a perceived sociability, to raise consumers' acceptance for this kind of technology and consequently, the intention to use an assistant or related product. For voice assistants, it is beneficial for companies to implement realistic, human-like voices, which are perceived as more lively, interactive, and responsive. Developers should continue to make sure that interacting with voice assistants is an enjoyable experience.

Consequently, this thesis recommends enhancing the hedonistic character by implementing features such as interactive games, which will delight even larger target groups. These enhancements might enhance the human-like perception of voice assistants, as humor can be identified as a human trait. In addition, forms of courtesy, such as those that exist in conversations between people, can increase likeability, create a positive image, and ensure that the assistant is perceived as a pleasant conversation partner. The fact that voice assistants not only follow human instructions but also understand, learn, and adequately respond to the consumer creates a kind of dialogue. This dialogue between user and assistant should be based on natural language and be as authentic as possible. Hence, practitioners might focus in the development of natural "scripts" to create such a realistic dialogue. In conclusion, the thesis suggests enhancing the acceptance of technology using voice assistants (e.g., in smart products) by focusing on human-like interactions via the voice.

The fourth subarea focused on response strategies to complaints on the web for service recovery, however, it concentrated on the silent observer who reads these complaints and responds as an information source prior to purchase. Therefore, this thesis offers important suggestions to the complaint management of companies to enhance the efficiency of their service recovery efforts. Based on the results, it is feasible for companies to consider prospective customers, because existing and established strategies do not necessary apply to these consumers. In particular, the benefits of following an apology and redress strategy with an explanation why the service failure happened are twofold. Based on literature, this is the most powerful combination in response to a complaint and the results propose the same for prospective customers due to risk reduction. Here, the prospective customer has a comprehensive insight into how the company will handle a service failure. This thesis also shows that not all strategies that are beneficial for the complainer also positively affect the prospective customer. Specifically, businesses should not necessarily apply a strategy of private contact. Here, the complainant processing might be all-embracing, however, the prospective customer is not given any additional information about how the problem was solved. This strategy is even worse than not handling the complaint at all. Companies that have to deal with a public complaint should include additional information to the complaint afterwards. This is critical for businesses such as telecommunications providers that are dependent on such contact strategies because of privacy policies or laws. Another noteworthy implication deals with the "in-between" strategies, i.e., different combinations that are between the worst and best answer to the complaint. Results propose that, if offering a monetary redresses is not possible, other strategies do not differ significantly regarding the impact on the prospective consumer (e.g., an apology). This might occur, for instance, if monetary redresses are not possible because of the economic situation. For the complainant an apology might be interpreted as redress, however, businesses, in

cases such as this, should be aware that the prospective customer will be less satisfied with this type of answer because of higher perceived risk, which leads to lower purchase intention. In sum, this thesis suggests that complaint management should not only focus on the complainant in case of a service failure, but also in potential customers.

The fifth subarea focused on eSports event consumption and, therefore, offers significant implications for event management. In general, the results show that attendees participating at an on-site event or choosing to follow the same event on an online environment are choosing the consumption form based on different motivations. Hence, event management should be aware of these differences and align the consumption forms accordingly. For eSports events, in particular, this thesis suggests that for online consumption, event managers should focus on offering detailed insights into the course of the games. This would offer a detailed view so that attendees can enhance their knowledge about the game and corresponding tactics and moves, with a good view on the "virtual" aesthetics of the players and their (virtual) skills. Such an offering leads to a higher event satisfaction as their motivation is fulfilled. To achieve this goal, streams might include (dynamic) multicamera views so that both the in-game content and players in real life can be followed. In contrast, for offline consumption and, thus, attendee on-site participation, event managers should focus on enhancing consumers' social experiences. In particular, the social experience could be improved by enhancing the community's perception, e.g., through meet and greets, group talks, or, during the match, motivating the attendees to cheer as a crowd, thus, strengthening the sense of community. In brief, events profit from management that distinguishes between both consumptions forms by taking different motivations into account so that attendees perceive satisfaction as their needs are addressed.

The sixth subarea focused on how video games success is shaped by core video game elements and, in particular, social elements based on market data analysis. Hence, this thesis offers important implications for publishers and developers creating video games. First and foremost, it suggests considering social elements as an important success driver. In particular, social elements not only include those such as the classic multiplayer feature, but also the social surroundings on distribution platforms. Therefore, the thesis proposes that developers should be keen on stimulating and supporting their userbase on social interactions. In general, these social interactions create benefits for each user within an online community as well as users of a given video game. The results show that discussion threads, which are also used for sharing user-generated content, are an important driver, so implementing such a feature (i.e., possibility of downloading new content such as new skins, maps, or even game modes from other users) stimulates consumers to participate in those discussions, positively

affecting the number of potential owners. In addition, consumers can follow discussions to obtain new information about the video game, e.g., the location of hidden treasures or weapons and, thus, have a more joyful experience. Being active in such communities to get feedback accompanies these measures because users benefit from participating (i.e., bringing in their own ideas). It is important to take this feedback from users seriously. If errors are reported through reviews or feedback, they should be fixed. Hopefully, this will lead to a more positive rating of the video game and attract new users. It makes sense to motivate users to give a positive review of a video game, for instance, by unlocking access to special items in the video game itself for providing a review. Another noteworthy implication is that even for video games that are traditionally focused on a story-driven single-player mode, the implementation of additional social elements or enabling users to socially interact, positively impact the success of a given video game. However, the results also allow for meaningful implications in context of the core elements. First, publishers should be careful about adjusting their price only as a quality index label. In contrast to previous research, one cannot observe a positive impact of a higher price on the number of owners of the given video game and, thus, publishers should be keen on considering taking production budgets and efforts in marketing and competitors for pricing. Second, in-app purchases and DLCs are continuous income streams for a given game. However, this thesis proposes on focusing on DLCs because of their stronger impact on average playtime and, thus, keep the player tied to the game. Afterwards, in-app purchases might be bought because the user stays with the video game for longer. Developers and publishers should be careful about implementing unfair in-app purchases (e.g., necessary coins to proceed) because potential hazards such as negative reviews might arise, which, in turn, will negatively affect sales. In summary, this thesis suggests that game developers and publishers consider social elements as important success driver and re-evaluate decisions such as the pricing of video games.

4.4 Directions for Future Research

The scope of this thesis entails some limitations, which provide new and additional directions for future research. Consequently, the core results and conclusions of this thesis lead to new questions and offer an additional basis for further research. Hence, in addition to future research recommendations in each essay for the given subarea, superordinate research suggestions in digital environments are presented.

First and foremost, this essay focuses on digital environments and chose this as the phenomenon. Future research can build on the present foundation of introducing psychological distances as influential factor of cognitive processing in digital environments. However, further research should address these phenomena also in

analog environments. By taking advertising into account, future research should address whether identified effects also hold true in offline environments e.g., in newspapers or magazines. Though, not only offline environments should be considered for further research, because digital environments are also subject to continual further development, e.g., augmented reality or virtual reality. For instance, virtual reality can take the consumer into a completely new environment perception (Baker et al., 2019). Consequently, it might be argued that one is still in a digital environment; however, the consumer could interpret this as being "on site" e.g., by consuming a sports event, and, therefore, affecting the reference point (Trope and Liberman, 2010). In particular, anchoring to a spatial distance in an advertisement (e.g., where an event is held), the advertisement is processed differently depending on the reference points (home vs. digitally on site). Therefore, consumer processing might be affected differently so that the digital environment dominates the perception of physical presence. Consequently, the assumptions of this thesis should be further investigated if they hold true for all digital environments.

Results in the second essay, with regard to psychological distances and e-commerce, revealed that the cognitive processing varies regarding mental imagery dimensions under review. Although these dimensions are based on recent literature and are, thus, of importance in the present context, only partial effects could be observed. Hence, these results indicate a more differentiated perspective on the effects of advertisement processing because there might be established variables (Maclnnis and Jaworski, 1989), which are not or are differently affected by the observed effects of psychological distance, as previously expected. Hence, further research should carry out a more profound investigation on this issue.

In line with this, both essays in the context of the construal level theory (Trope and Liberman, 2012) offered theoretical and sound explanations for the effects of psychological distances on congruency perception. Taking schema theory into account (Anderson, 1976) and combining it with construal level theory, the thesis introduced explanations for the observed effects. However, there is still room for further research on the underlying effects to achieve a more holistic overview to fully understand the impact of mental construal on congruency perception. Future research can, for instance, expand previous work on consumers' categorization ability (Wakslak et al., 2006).

The thesis investigated the effects of human-like congruency in relation to digital voice assistants. The focus was set on devices such as mobile phones, in which the assistant is embedded as a digital application, following the emphasis of the thesis. However, voice assistants might also be embedded in smart assistants such as Nest Hub (Floemer, 2019), which have a physical, yet clearly distant robotic appearance. While the thesis

suggests that, contrary to the uncanny valley paradox (Mori, 1970) for pure digital voice assistants, human-like characteristics are beneficial, negative effects have also been observed for robots (MacDorman and Ishiguro, 2006). Smart assistants such as the Nest Hub are in between, thus, future research should investigate the proposed effects of non-pure digital, yet not robotic, voice assistants. In line with this, as the first two essays showed how congruency is affected by psychological distances, future research should investigate this issue in the context of smart assistants, because dimensions such as social distance could be of importance in the context of voice assistants, and, thus, affect the perceived congruence due to a perceived human-like similarity.

This might also be of importance for further research in case of complaint management. Besides the offered research recommendations in the essay such as cultural influences and study design, the results of the second essay for information processing in digital environments might also apply in the present context of service recovery. In particular, as previously stated, complaints and the corresponding answer are almost infinite available online (Hennig-Thurau and Walsh, 2004). However, due to this fact, a consumer might encounter a given complaint directly after posting, or within a given distant timeframe. One might argue that this temporal distance could influence the information processing, which is offered by the company. Based on the results, abstract information might be, in the second case (i.e., high temporal distance), more efficient. This would be partially contrary to previous results regarding the design of the service recovery measures and e.g., explanations (Davidow, 2003). In addition, hypothetical distances (e.g., which outcome to expect) or social distances (e.g., triggered by a picture of the customer support employee) could additionally trigger for different mental construal. Recent research indicates an impact of the different mental construal of consumers on a compensation evaluation in offline contexts (Sinha and Lu, 2019). Hence, future research should investigate information processing effects due to psychological distances in complaint management to further enhance the knowledge regarding service recovery for the silent observer.

The fifth essay dealt with differences and similarities in eSports consumption motivation in online and offline consumption form. Because the thesis focused on digital environments, it is comprehensible that eSports, i.e., a sport that had its origin in a digital form, per se, was investigated. Event management research should further investigate beyond existing literature, which is mostly connected to one analog sports form e.g., table tennis (Zhang and Byon, 2017) and what motivates consumers to participate as attendees on site or via online streams. Here, differences could also be beneficial for other research domains, such as advertising. Consumers with a “learning” motivation in online environments might be differently addressed to attendees on site, who seek a more social experience. These assumptions might also be of importance regarding the results of the first essay and advertising in an eSports context, in particular. Referring to

the first essay, events that are subject to advertising efforts address both online (e.g., via stream) and offline (e.g., on-site attendees) consumption forms. Previous research already offers first insights regarding the evaluation of congruency based on relevance (Maille and Fleck, 2011). Taking motivations into account, brands that might be perceived as (medium) congruent by consumers on site at an event, might be perceived as incongruent by online attendees because they do not fit the motivation for online consumption at all. However, the first essay took only online consumption into account and did not address underlying relevance. It is unclear how psychological distances in the context of advertising work by respecting both surroundings simultaneously. Taking a Counter-Strike match into account, presenting an advertisement based on the present results might be interpreted differently between watching at home digitally via stream or tv and being on site at the event. In particular, higher temporal distance might be beneficial for an incongruent in both environments based on the present results; however, this might interact with the overall relevance (i.e., medium congruence vs. incongruence). Future research should, therefore, investigate whether psychological distance anchoring is applicable to both environments by taking them both simultaneously into account and should investigate how the results of the first essay (i.e., congruency affected by psychological distances) interact with motivations and the resulting evaluations.

As previously mentioned, virtual reality differs in content perception (Baker et al., 2019). However, virtual reality is an additional digitally infused way to follow a given stream of an event (Deutscher, 2016). Future research should, therefore, not only extend previous research in the context of offline and online consumption differences (e.g., Hu et al., 2017; Seo and Green, 2008; Zhang and Byon, 2017), but also distinguish between different levels of digital consumption, i.e., virtual reality vs. regular stream on a PC, and related consequences regarding the motivation to consume a given event. In addition, new sport forms such as augmented reality eSports emerge, which are a hybrid between regular sports and digital sports (Melnick, 2018). Here, further research should investigate the needs of consumers to follow such an event, which is not purely digital, but also not completely analog.

In addition, the last essay investigated the success drivers of video games and focused on social elements. However, considering the results of the previous essay regarding eSports and events, future research should consider features that specifically address the needs of eSports and how these affect the success of eSports-related video games. For instance, integrating features that enable streamers to offer detailed insights into the course of a game might positively affect video game success. Games that are well suited for eSports broadcasts might also be positively affected in sales, because viewers of

such streams are often also players themselves (Hamari and Sjöblom, 2017; Warman, 2017). Consequently, future research in this area could contribute to both video game success and event management research and offer meaningful insights for practice.

Finally, most relationships under review in this thesis were based on a short-term effect due to their experimental nature. For instance, results did not show significant effects of psychological distance on attitudinal responses to a brand in regard to advertising. However, the overall evaluation of the advertising was positively affected. Research indicates that this processing of advertising should also affect positively the attitude towards the object (i.e., brand or product) (Dahlen and Lange, 2005). Hence, future research should investigate whether the short-term improvement in perception (e.g., psychological distance anchor for advertisement processing) also has a positive long-term effect on the evaluation of a brand. More generally, further research should examine the proposed short-term effects in this thesis with regard to their long-term effects. In follow-up research, this and the previously mentioned issues should be addressed.

References

Aaker, David (1990), "Brand extensions: The good, the bad, and the ugly," *MIT Sloan Management Review*, 31 (4), 47.

Aggarwal, P and M Zhao (2015), "Seeing the big picture: The effect of height on the level of construal," *Journal of Marketing Research*, 52 (1), 120–33.

Ahn, Tony, Seewon Ryu, and Ingoo Han (2004), "The impact of the online and offline features on the user acceptance of Internet shopping malls," *Electronic Commerce Research and Applications*, 3 (4), 405–20.

Ajzen, Icek (1991), "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, 50 (2), 179–211.

Alalwan, Ali Abdallah, Yogesh K Dwivedi, and Nripendra P Rana (2017), "Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust," *International Journal of Information Management*, 37 (3), 99–110.

Allsop, Dee T, Bryce R Bassett, and James A Hoskins (2007), "Word-of-Mouth Research: Principles and Applications," *Journal of Advertising Research*, 47 (4), 398–411.

Amazon (2019), "Skills Rubrik Humor," *amazon.com*, (accessed March 11, 2019), [available at Skills Rubrik Humor].

Anand, Akshay (2007), "E-Satisfaction--A Comprehensive Framework," IEEE, 55–55.

Anderson, Edward G, Jr., Geoffrey G Parker, and Burcu Tan (2014), "Platform Performance Investment in the Presence of Network Externalities," *Information Systems Research*, 25 (1), 152–72.

Anderson, John R (1976), *Language, Memory, and Thought*, Psychology Press.

Anderson, Rolph E and Srini S Srinivasan (2003), "E-satisfaction and e-loyalty: A contingency framework," *Psychology & Marketing*, 20 (2), 123–38.

Ardichvili, Alexander, Vaughn Page, and Tim Wentling (2003), "Motivation and barriers to participation in virtual knowledge-sharing communities of practice," *Journal of Knowledge Management*, 7 (1), 64–77.

Ariely, Dan and Dan Zakay (2001), "A timely account of the role of duration in decision making," *Acta psychologica*, 108 (2), 187–207.

Aslam, Salman (2019), "YouTube by the Numbers (2019): Stats, Demographics & Fun Facts," *omnicoreagency.com*, (accessed April 25, 2019), [available at www.omnicoreagency.com/youtube-statistics/].

Austin, B A and T F Gordan (1987), "Movie genres: Toward a conceptualized model and standardized definitions," in *Current research in film Audiences, economics, and law*, B. A. Austin, ed., Ablex: Ablex Publishing Co. Norwood, 12–33.

Babin, Laurie A and Alvin C Burns (1997), "Effects of Print Ad Pictures and Copy Containing Instructions to Imagine on Mental Imagery That Mediates Attitudes," *Journal of Advertising*, 26 (3), 33–44.

Backman, Kenneth F, Sheila J Backman, Muzaffer Uysal, and Karen Mohr Sunshine (1995), "Event Tourism: An Examination of Motivations and Activities," *Festival Management and Event Tourism*, 3 (1), 15–24.

Bagozzi, Richard P and Youjae Yi (1988), "On the evaluation of structural equation models," *Journal of the Academy of Marketing Science*, 16 (1), 74–94.

Bailar, Barbara, Leroy Bailey, and Joyce Stevens (1977), "Measures of Interviewer Bias and Variance," *Journal of Marketing Research*, 14 (3), 337–43.

F. Nimmermann, *Congruency, Expectations and Consumer Behavior in Digital Environments*, Handel und Internationales Marketing Retailing and International Marketing, https://doi.org/10.1007/978-3-658-28421-3

Baker, Elizabeth White, Geoffrey S Hubona, and Mark Srite (2019), "Does 'Being There' Matter? The Impact of Web-Based and Virtual World's Shopping Experiences on Consumer Purchase Attitudes," *Information & Management*, 1–55.

Balachander, Subramanian and Sanjoy Ghose (2003), "Reciprocal Spillover Effects: A Strategic Benefit of Brand Extensions," *Journal of Marketing*, 67 (1), 4–13.

Ball, Eugene (2006), "A Bayesian Heart : Computer Recognition and Simulation of Emotion."

Bandura, Albert (1986), *Social foundations of thought and action*, Prentice Hall.

Bansal, Harvir S, P Gregory Irving, and Shirley F Taylor (2004), "A three-component model of customer commitment to service providers," *Journal of the Academy of Marketing Science*, 32 (3), 234.

Bansal, Harvir S, Shirley F Taylor, and Yannik St James (2005), "'Migrating' to new service providers: Toward a unifying framework of consumers' switching behaviors," *Journal of the Academy of Marketing Science*, 33 (1), 96–115.

Barassi, Veronica and Emiliano Treré (2012), "Does Web 3.0 come after Web 2.0? Deconstructing theoretical assumptions through practice," *New Media & Society*, 14 (8), 1269–85.

Baron, Reuben M and David A Kenny (1986), "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations.," *Journal of Personality and Social Psychology*, 51 (6), 1173–82.

Barth, Susanne and Menno D T de Jong (2017), "The privacy paradox – Investigating discrepancies between expressed privacy concerns and actual online behavior – A systematic literature review," *Telematics and Informatics*, 34 (7), 1038–58.

Bartneck, Christoph, Dana Kulić, Elizabeth Croft, and Susana Zoghbi (2008), "Measurement Instruments for the Anthropomorphism, Animacy, Likeability, Perceived Intelligence, and Perceived Safety of Robots," *International Journal of Social Robotics*, 1 (1), 71–81.

Bartneck, Christoph, Michel van der Hoek, Omar Mubin, and Abdullah Al Mahmud (2007), "'Daisy, Daisy, give me your answer do!'," *Proceeding of the ACM/IEEE international conference on Human-robot interaction - HRI '07*.

Bateman, Patrick J, Jacqueline C Pike, and Brian S Butler (2011), "To disclose or not: publicness in social networking sites," *Information Technology & People*, (S. Sawyer, ed.), 24 (1), 78–100.

Batra, Rajeev and Olli T Ahtola (1991), "Measuring the hedonic and utilitarian sources of consumer attitudes," *Marketing letters*, 2 (2), 159–70.

Bawden, David and Lyn Robinson (2008), "The dark side of information: overload, anxiety and other paradoxes and pathologies," *Journal of Information Science*, 35 (2), 180–91.

Beals, Diane E (1998), "Reappropriating Schema: Conceptions of Development From Bartlett and Bakhtin," *Mind*, 5 (1), 3–24.

Beard, Jacob G and Mounir G Ragheb (1983), "Measuring leisure motivation.," *Journal of Leisure Research*, 15 (3), 219–28.

Beck, Roman (2006), "Network Effect Theory," in *The Network(ed) Economy: The Nature, Adoption and Diffusion of Communication Standards*, The Network(ed) Economy: The Nature, Adoption and Diffusion of Communication Standards, R. Beck, ed., Wiesbaden: DUV, 41–78.

Becker, Christian, Stefan Kopp, and Ipke Wachsmuth (2007), "Why Emotions should be Integrated into Conversational Agents," in *Conversational Informatics*, John Wiley & Sons, Ltd, 49–67.

Becker-Olsen, Karen L (2003), "And Now, A Word from our Sponsor: A Look at the Effects of Sponsored Content and Banner Advertising," *Journal of Advertising*, 32 (2), 17–32.

Becker-Olsen, Karen L, B Andrew Cudmore, and Ronald Paul Hill (2006), "The impact of perceived corporate social responsibility on consumer behavior," *Journal of business research*, 59 (1), 46–53.

Bellegarda, Jerome R (2013), "Large-scale personal assistant technology deployment: the siri experience," *Interspeech 2013*.

Bensinger, G (2014), *Amazon wants to ship your package before you buy it*, The Wall Street Journal.

Bente, Gary, Nicole C Krämer, and Anita Petersen (2002), *Virtuelle Realitäten*, Hogrefe Verlag.

Berners-Lee, Tim, James Hendler, and Ora Lassila (2001), "The semantic web," *Scientific american*, 284 (5), 28–37.

Bernier, Emily P and Brian Scassellati (2010), "The similarity-attraction effect in human-robot interaction," IEEE, 286–90.

Bies, Robert J and J F Moag (1987), "Interactional Justice: Communication Criteria of Fairness," in *Research on Negotiations in Organizations*, R. J. Lewicki, B. H. Sheppard, and M. H. Bazerman, eds., Kluwer Academic Publishers-Plenum Publishers, 43–55.

Binken, Jeroen L G and Stefan Stremersch (2009), "The Effect of Superstar Software on Hardware Sales in System Markets," *Journal of Marketing*, 73 (2), 88–104.

Bishop, Melissa M, E Deanne Brocato, and Akshaya Vijayalakshmi (2015), "The role of medium content and ad format congruity in influencing advertising outcomes," *Journal of Marketing Communications*, 23 (4), 371-84.

Blodgett, Jeffrey G, Donna J Hill, and Stephen S Tax (1997), "The effects of distributive, procedural, and interactional justice on postcomplaint behavior," *Journal of Retailing*, 73 (2), 185–210.

Bone, Paula Fitzgerald and Pam Scholder Ellen (1992), "The Generation and Consequences of Communication-Evoked Imagery," *Journal of Consumer Research*, 19 (1), 93–104.

Bornemann, Torsten and Christian Homburg (2011), "Psychological Distance and the Dual Role of Price," *Journal of Consumer Research*, 38 (3), 490–504.

Bradley, M M and P J Lang (1994), "Measuring emotion: the Self-Assessment Manikin and the Semantic Differential.," *Journal of behavior therapy and experimental psychiatry*, 25 (1), 49–59.

Braga, João N, Mário B Ferreira, and Steven J Sherman (2015), "The effects of construal level on heuristic reasoning: The case of representativeness and availability.," *Decision*, 2 (3), 216–27.

Brahnam, Sheryl and Antonella De Angeli (2012), "Gender affordances of conversational agents," *Interacting with Computers*, 24 (3), 139–53.

Breitsohl, Jan, Marwan Khammash, and Gareth Griffiths (2010), "E-business complaint management: perceptions and perspectives of online credibility," *Journal of Enterprise Information Management*, 23 (5), 653–60.

Bründl, Simon, Christian Matt, and Thomas Hess (2017), "Consumer use of Social Live Streaming Services: The Influence of Co-Experience and Effectance on Enjoyment," *Proceedings of the 25th European Conference on Information Systems (ECIS)*, 1775–91.

Buchanan-Oliver, Margo and Yuri Seo (2012), "Play as co-created narrative in computer game consumption: The hero's journey in Warcraft III," *Journal of Consumer Behaviour*, 11 (6), 423–31.

Burke, R R (2002), "Technology and the Customer Interface: What Consumers Want in the Physical and Virtual Store," *Journal of the Academy of Marketing Science*, 30 (4), 411–32.

Burns, Alvin C, Abhijit Biswas, and Laurie A Babin (1993), "The Operation of Visual Imagery as a Mediator of Advertising Effects," *Journal of Advertising*, 22 (2), 71–85.

Bushong, Benjamin, Lindsay M King, Colin F Camerer, and Antonio Rangel (2010), "Pavlovian Processes in Consumer Choice: The Physical Presence of a Good Increases Willingness-to-Pay," *The American Economic Review*, 100 (4), 1556–71.

Butler, Brian S (2001), "Membership Size, Communication Activity, and Sustainability: A Resource-Based Model of Online Social Structures," *Information Systems Research*, 12 (4), 346–62.

Butler, Brian S, Patrick J Bateman, Peter H Gray, and E Ilana Diamant (2014), "An Attraction-Selection-Attrition Theory of Online Community Size and Resilience," *MIS quarterly*, 38 (3), 699–728.

Byon, Kevin K, Michael Cottingham, and Michael S Carroll (2010), "Marketing murderball: the influence of spectator motivation factors on sports consumption behaviours of wheelchair rugby spectators," *International Journal of Sports Marketing and Sponsorship*, 12 (1), 71–89.

Callejas, Zoraida, Ramón López-Cózar, Nieves Ábalos, and David Griol (2011), "Affective Conversational Agents," in *Conversational Agents and Natural Language Interaction: Techniques and Effective Practices: Techniques and Effective Practices*, The Role of Personality and Emotion in Spoken Interactions, D. Perez-Marin and I. Pascual-Nieto, eds., IGI Global, 203–22.

Campbell, Colin (2015), "A secret slice of loading screen history," *Polygon.com*, (accessed May 5, 2017), [available at https://www.polygon.com/2015/1/13/7540047/a-secret-slice-of-loading-screen-history].

Capgemini (2018), "Conversational Commerce – Why Consumers Are Embracing Voice Assistants in Their Lives."

Carrillat, François A, Barbara A Lafferty, and Eric G Harris (2005), "Investigating sponsorship effectiveness," *Journal of Brand Management*, 13 (1), 50–64.

Cassell, Justine, Catherine Pelachaud, Norman Badler, Mark Steedman, Brett Achorn, Tripp Becket, Brett Douville, Scott Prevost, and Matthew Stone (1994), *Animated conversation: rule-based generation of facial expression, gesture & spoken intonation for multiple conversational agents*, *the 21st annual conference*, New York, New York, USA: ACM, 413–20.

Chaffey, Dave (2019), "Global social media research summary 2019 | Smart Insights," *smartinsights.com*, (accessed April 26, 2019), [available at https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/].

Chang, Yaping, Jun Yan, Jinlong Zhang, and Jin Luo (2010), "Online In-Game Advertising Effect: Examining the Influence of a Match Between Games and Advertising," *Journal of Interactive Advertising*, 11 (1), 63–73.

Chen, Chen-Yueh, Yi-Hsiu Lin, and Hui-Ting Chiu (2013), "Development and psychometric evaluation of sport stadium atmosphere scale in spectator sport events," *European Sport Management Quarterly*, 13 (2), 200–215.

Chen, Cheng and Louis Leung (2016), "Are you addicted to Candy Crush Saga? An exploratory study linking psychological factors to mobile social game addiction," *Telematics and Informatics*, 33 (4), 1155–66.

Chen, Chia-Chen and Yi-Chen Lin (2018), "What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement," *Telematics and Informatics*, 35 (1), 293–303.

Chen, Pei-Yu, Shin-yi Wu, and Jungsun Yoon (2004), "The impact of online recommendations and consumer feedback on sales," *Proceedings of the International Conference on Information Systems 2004.*

Chen, Ying-Hueih, I-Chieh Hsu, and Chia-Chen Lin (2010), "Website attributes that increase consumer purchase intention: A conjoint analysis," *Journal of business research*, 63 (9-10), 1007–14.

Chen, Zoey and Nicholas H Lurie (2013), "Temporal Contiguity and Negativity Bias in the Impact of Online Word of Mouth," *Journal of Marketing Research*, 50 (4), 463–76.

Cheng, Simone, Terry Lam, and Cathy H C Hsu (2006), "Negative Word-of-Mouth Communication Intention: An Application of the Theory of Planned Behavior," *Journal of Hospitality & Tourism Research*, 30 (1), 95–116.

Cheung, Christy M K, Matthew K O Lee, and Neil Rabjohn (2008), "The impact of electronic word-of-mouth," *Internet Research*, 18 (3), 229–47.

Cheung, Man Yee, Chuan Luo, Choon Ling Sia, and Huaping Chen (2009), "Credibility of Electronic Word-of-Mouth: Informational and Normative Determinants of On-line Consumer Recommendations," *International Journal of Electronic Commerce*, 13 (4), 9–38.

Chevalier, Judith A and Dina Mayzlin (2006), "The Effect of Word of Mouth on Sales: Online Book Reviews," *Journal of Marketing Research*, 43 (3), 345–54.

Chiu, Fa-Chung (2012), "Fit between future thinking and future orientation on creative imagination," *Thinking Skills and Creativity*, 7 (3), 234–44.

Cho, Chang-Hoan (2003), "Factors Influencing Clicking of Banner Ads on the WWW," *CyberPsychology & Behavior*, 6 (2), 201–15.

Choi, S M and N J Rifon (2002), "Antecedents and consequences of web advertising credibility: A study of consumer response to banner ads," *Journal of Interactive Advertising*, 3 (1), 12–24.

Chung, Sorim, Thomas Kramer, and Elaine M Wong (2018), "Do touch interface users feel more engaged? The impact of input device type on online shoppers' engagement, affect, and purchase decisions," *Psychology & Marketing*, 35 (11), 795–806.

Chung, Wonjun and Chang Wan Woo (2011), "The effects of hosting an international sports event on a host country," *International Journal of Sports Marketing and Sponsorship*, 12 (4), 2–21.

Church, Jeffrey, Neil Gandal, and David Krause (2008), "Indirect Network Effects and Adoption Externalities," *Review of Network Economics*, 7 (3), 1–22.

Claus, Bart and Luk Warlop (2017), "The Tree Is Mine, The Forest Isn't: An Extended Abstract on the Construal Level of Possessions," in *Marketing at the Confluence between Entertainment and Analytics*, Developments in Marketing Science: Proceedings of the Academy of Marketing Science, P. Rossi, ed., Cham: Springer International Publishing, 1301–5.

Clements, M T and Hiroshi Ohashi (2005), "Indirect Network Effects and the Product Cycle: Video Games in the U.S., 1994–2002*," *The Journal of Industrial Economics*, 53 (4), 515–42.

Cocke, Taylor (2018), "Esports Essentials: League of Legends and the Rise of MOBA Esports - The Esports Observer," (accessed March 27, 2019), [available at https://esportsobserver.com/esports-essentials-league-of-legends/].

Cohen, Jacob (2013), *Statistical Power Analysis for the Behavioral Sciences*, Routledge.

Cohen, Patricia (2014), *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, Psychology Press.

Cole, Helena and Mark D Griffiths (2007), "Social Interactions in Massively Multiplayer Online Role-Playing Gamers," *CyberPsychology & Behavior*, 10 (4), 575–83.

Collie, Thérèse A, Beverley Sparks, and Graham Bradley (2000), "Investing in Interactional Justice: A Study of the Fair Process Effect within a Hospitality Failure Context," *Journal of Hospitality & Tourism Research*, 24 (4), 448–72.

Conlon, D E and N M Murray (1996), "Customer Perceptions of Corporate Responses to Product Complaints: the Role of Explanations," *Academy of Management Journal*, 39 (4), 1040–56.

Cook, Karen S and Karen A Hegtvedt (1983), "Distributive Justice, Equity, and Equality," *Annual Review of Sociology*, 9, 217–41.

Cooper, R G (1979), "The Dimensions of Industrial New Product Success and Failure," *Journal of Marketing*, 43 (3), 93.

Cornwell, T Bettina, Michael S Humphreys, Angela M Maguire, Clinton S Weeks, and Cassandra L Tellegen (2006), "Sponsorship-Linked Marketing: The Role of Articulation in Memory," *Journal of Consumer Research*, 33 (3), 312–21.

Cox, Joe (2013), "What Makes a Blockbuster Video Game? An Empirical Analysis of US Sales Data," *Managerial and Decision Economics*, 35 (3), 189–98.

Coyle, James R and Esther Thorson (2001), "The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites," *Journal of Advertising*, 30 (3), 65–77.

Crompton, John L (2003), "Adapting Herzberg: A Conceptualization of the Effects of Hygiene and Motivator Attributes on Perceptions of Event Quality," *Journal of Travel Research*, 41 (3), 305–10.

Crompton, John L and Stacey L McKay (1997), "Motives of visitors attending festival events," *Annals of Tourism Research*, 24 (2), 425–39.

d Astous, Alain and Pierre Bitz (1995), "Consumer evaluations of sponsorship programmes," *European journal of Marketing*, 29 (12), 6–22.

Dahlen, Micael and Fredrik Lange (2005), "Advertising weak and strong brands: Who gains?," *Psychology & Marketing*, 22 (6), 473–88.

Dahlen, Micael, Sara Rosengren, Fredrik Torn, and Niclas Öhman (2008), "Could Placing ADS Wrong be Right?: Advertising Effects of Thematic Incongruence," *Journal of Advertising*, 37 (3), 57–67.

Dale, Barrie, Jos van Iwaarden, Ton van der Wiele, and Roger Williams (2005), "Service improvement in a sports environment," *Managing Service Quality: An International Journal*, 15 (5), 470–84.

Davidow, Moshe (2000), "The Bottom Line Impact of Organizational Responses to Customer Complaints," *Journal of Hospitality & Tourism Research*, 24 (4), 473–90.

Davidow, Moshe (2003), "Organizational Responses to Customer Complaints: What Works and What Doesn't," *Journal of Service Research*, 5 (3), 225–50.

Davis, Fred D (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS quarterly*, 13 (3), 319.

Davis, Fred D, Richard P Bagozzi, and Paul R Warshaw (1992), "Extrinsic and Intrinsic Motivation to Use Computers in the Workplace," *Journal of Applied Social Psychology*, 22 (14), 1111–32.

de Matos, Celso Augusto, Jorge Luiz Henrique, and Carlos Alberto Vargas Rossi (2007), "Service Recovery Paradox: A Meta-Analysis," *Journal of Service Research*, 10 (1), 60–77.

De Pelsmacker, Patrick, Maggie Geuens, and Pascal Anckaert (2002), "Media Context and Advertising Effectiveness: The Role of Context Appreciation and Context/Ad Similarity," *Journal of Advertising*, 31 (2), 49–61.

Deci, Edward L (1972), "The effects of contingent and noncontingent rewards and controls on intrinsic motivation," *Organizational Behavior and Human Performance*, 8 (2), 217–29.

Deighton, John and Leora Kornfeld (2009), "Interactivity's Unanticipated Consequences for Marketers and Marketing," *Journal of Interactive Marketing*, 23 (1), 4–10.

Deng, Li and Xuedong Huang (2004), "Challenges in adopting speech recognition," *Communications of the ACM*, 47 (1), 69–75.

Desai, Kalpesh Kaushik and Suman Basuroy (2005), "Interactive influence of genre familiarity, star power, and critics' reviews in the cultural goods industry: The case of motion pictures," *Psychology & Marketing*, 22 (3), 203–23.

Deutscher, John (2016), "Virtual reality live streaming on Azure Media Services," *microsoft.com*, (accessed May 13, 2019), [available at https://azure.microsoft.com/de-de/blog/live-virtual-reality-streaming/].

Dewi, Ike Janita and Swee Hoon Ang (2001), "Between Imagination and Reality: a Study on the Comparative Effectiveness of Advertising and Product Trial," *Asia Pacific Advances in Consumer Research*, 4, 74–80.

Dhar, Ravi and Klaus Wertenbroch (2000), "Consumer Choice between Hedonic and Utilitarian Goods," *Journal of Marketing Research*, 37 (1), 60–71.

Dimoka, Angelika, Yili Hong, and Paul A Pavlou (2012), "On Product Uncertainty in Online Markets: Theory and Evidence," *MIS quarterly*, 36 (2), 395–426.

Doney, Patricia M and Joseph P Cannon (1997), "An Examination of the Nature of Trust in Buyer-Seller Relationships," *Journal of Marketing*, 61 (2), 35–51.

Donghun, Lee and Linda J Schoenstedt (2011), "Comparison of eSports and Traditional Sports Consumption Motives," *ICHPER-SD Journal of Research*, 6 (2), 39–44.

Dowell, Margaret-Mary Sulentic (2019), "Toward a Working Definition of Digital Literacy," in *Advanced Methodologies and Technologies in Library Science, Information Management, and Scholarly Inquiry*, Advances in Library and Information Science, IGI Global, 118–29.

Downie, Michelle, Genevieve A Mageau, and Richard Koestner (2008), "What Makes for a Pleasant Social Interaction? Motivational Dynamics of Interpersonal Relations," *The Journal of Social Psychology*, 148 (5), 523–34.

Duan, W, B Gu, and A Whinston (2008), "The dynamics of online word-of-mouth and product sales—An empirical investigation of the movie industry," *Journal of Retailing*, 84 (2), 233–42.

Einwiller, Sabine A and Sarah Steilen (2015), "Handling complaints on social network sites – An analysis of complaints and complaint responses on Facebook and Twitter pages of large US companies," *Public Relations Review*, 41 (2), 195–204.

Elberse, Anita and Jehoshua Eliashberg (2003), "Demand and Supply Dynamics for Sequentially Released Products in International Markets: The Case of Motion Pictures," *Marketing Science*, 22 (3), 329–54.

Elder, Ryan S and Aradhna Krishna (2012), "The 'Visual Depiction Effect' in Advertising: Facilitating Embodied Mental Simulation through Product Orientation," *Journal of Consumer Research*, 38 (6), 988–1003.

eMarketer (2018), "Retail e-commerce sales worldwide from 2014 to 2021 (in billion U.S. dollars)," *statista.com*, (accessed February 13, 2019), [available at https://www.statista.co

m/statistics/379046/worldwide-retail-e-commerce-sales/].

Entertainment Software Association (2016), "Two-Thirds of American Households Regularly Play Video Games - The Entertainment Software Association," (accessed November 24, 2017), [available at http://www.theesa.com/article/two-thirds-american-households-regularly-play-video-games].

Epley, Nicholas, Adam Waytz, and John T Cacioppo (2007), "On seeing human: A three-factor theory of anthropomorphism.," *Psychological review*, 114 (4), 864–86.

Eroglu, Sevgin A, Karen A Machleit, and Lenita M Davis (2003), "Empirical testing of a model of online store atmospherics and shopper responses," *Psychology & Marketing*, 20 (2), 139–50.

Esch, Franz-Rudolf and Patrick Geus (2005), "Ansätze zur Messung des Markenwerts," in *Moderne Markenführung*, Wiesbaden: Gabler Verlag, Wiesbaden, 1263–1305.

ESL (2017), "CS:GO Archives - ESL Meisterschaft," *eslgaming.com*, (accessed November 24, 2017), [available at http://pro.eslgaming.com/deutschland/winter-2017/csgo/].

Estelami, Hooman (2000), "Competitive and Procedural Determinants of Delight and Disappointment in Consumer Complaint Outcomes," *Journal of Service Research*, 2 (3), 285–300.

Farnham, Shelly, Harry R Chesley, Debbie E McGhee, Reena Kawal, and Jennifer Landau (2000), "Structured online interactions: improving the decision-making of small discussion groups," New York, New York, USA: ACM Press, 299–308.

Feiereisen, S, V Wong, and A J Broderick (2007), "Analogies and Mental Simulations in Learning for RNPs (Really New Products): The Role of Visual Attention," *The Journal of Product Innovation Management*, 25 (6), 593-607.

Ferrara, Emilio, Onur Varol, Clayton Davis, Filippo Menczer, and Alessandro Flammini (2016), "The rise of social bots," *Communications of the ACM*, 59 (7), 96–104.

Festinger, Leon (1957), *A Theory of Cognitive Dissonance*, Stanford: Stanford University Press.

Festinger, Leon (1959), "Some attitudinal consequences of forced decisions," *Acta psychologica*, 15, 389–90.

Fink, J S, Galen Trail, and D F Anderson (2002), "Environmental Factors Associated with Spectator Attendance and Sport Consumption Behavior," *Sport Marketing Quarterly*, 11.

Fishbein, M and I Ajzen (1975), *Belief, attitude, intention, and behavior: an introduction to theory and research*, Addison-Wesley Pub. Co.

Fleck, Nathalie, Michael Korchia, and Isabelle Le Roy (2012), "Celebrities in Advertising: Looking for Congruence or Likability?," *Psychology & Marketing*, 29 (9), 651–62.

Floemer, Andreas (2019), "Nest Home: Google benennt Smarthome-Sparte um und bringt den Hub nach Deutschland," *t3n.de*, (accessed May 10, 2019), [available at https://t3n.de/news/nest-home-google-benennt-smarthome-sparte-um-und-bringt-den-hub-nach-deutschland-1161348/].

Formica, Sandro and Muzaffer Uysal (1995), "A Market Segmentation of Festival Visitors," *Festival Management and Event Tourism*, 3 (4), 175–82.

Fornell, Claes and David F Larcker (1981), "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research*, 18 (1), 39–50.

Foye, Lauren (2018), "Digital TV & Video: Consumer Attitudes - Network & OTT-Strategies - 2018-2023."

Freeman, Guo and Donghee Yvette Wohn (2017), "eSports as An Emerging Research Context at CHI: Diverse Perspectives on Definitions," *the 2017 CHI Conference Extended Abstracts*, 1601–8.

Fridin, Marina and Mark Belokopytov (2014), "Acceptance of socially assistive humanoid robot by preschool and elementary school teachers," *Computers in Human Behavior*, 33, 23–31.

Friedländer, Mathilde B (2017), "Streamer Motives and User-Generated Content on Social Live-Streaming Services," *Journal of Information Science Theory and Practice*, 5 (1), 65–84.

Fuchs, Christoph, Emanuela Prandelli, and Martin Schreier (2010), "The Psychological Effects of Empowerment Strategies on Consumers' Product Demand," *Journal of Marketing*, 74 (1), 65–79.

Fujita, Kentaro, Tal Eyal, Shelly Chaiken, Yaacov Trope, and Nira Liberman (2008), "Influencing attitudes toward near and distant objects," *Journal of Experimental Social Psychology*, 44 (3), 562–72.

Furnham, Adrian, Barrie Gunter, and Freya Richardson (2002), "Effects of Product–Program Congruity and Viewer Involvement on Memory for Televised Advertisements," *Journal of Applied Social Psychology*, 32 (1), 124–41.

Galegher, Jolene, Lee Sproull, and Sara Kiesler (1998), "Legitimacy, Authority, and Community in Electronic Support Groups," *Written Communication*, 15 (4), 493–530.

Gallaugher, John M and Yu-Ming Wang (2002), "Understanding Network Effects in Software Markets: Evidence from Web Server Pricing," *MIS quarterly*, 26 (4), 303.

Gamespot (2016), "*Grand Theft Auto V Online Mode has generate half a billion Dollars*," *gamespot.com*, (accessed November 24, 2017), [available at https://www.gamespot.com/articles/gta-5s-online-mode-has-generated-half-a-billion-do/1100-6438765/].

Gantz, Walter and Lawrence A Wenner (1995), "Fanship and the Television Sports Viewing Experience," *Sociology of Sport Journal*, 12 (1), 56–74.

Garner, W R (1962), *Uncertainty and structure as psychological concepts.*, Oxford: Wiley.

Garrigos Simon, Fernando J, Rafael Lapiedra Alcamí, and Teresa Barberá Ribera (2012), "Social networks and Web 3.0: their impact on the management and marketing of organizations," *Management Decision*, (D. Ribeiro Soriano, ed.), 50 (10), 1880–90.

Gefen, David and Catherine M Ridings (2005), "If You Spoke As She Does, Sir, Instead of the Way You Do: A Sociolinguistics Perspective of Gender Differences in Virtual Communities," *SIGMIS Database*, 36 (2), 78–92.

Getz, Donald (1991), *Festivals, Special Events, and Tourism*, New York : Van Nostrand Reinhold.

Ghose, Anindya, Michael D Smith, and Rahul Telang (2006), "Internet Exchanges for Used Books: An Empirical Analysis of Product Cannibalization and Welfare Impact," *Information Systems Research*, 17 (1), 3–19.

Gibbs, S (2018), "How smart speakers stole the show from smartphones," *theguardian.com*, (accessed March 19, 2018), [available at www.theguardian.com/technology/2018/jan/06/how-smart-speakers-stole-the-show-from-smartphones].

Glass, Gene V, Percy D Peckham, and James R Sanders (1972), "Consequences of Failure to Meet Assumptions Underlying the Fixed Effects Analyses of Variance and Covariance," *Review of Educational Research*, 42 (3), 237.

Goldsmith, Ronald E, Barbara A Lafferty, and Stephen J Newell (2000), "The Impact of Corporate Credibility and Celebrity Credibility on Consumer Reaction to Advertisements and Brands," *Journal of Advertising*, 29 (3), 43–54.

Goodman, Joseph K and Selin A Malkoc (2012), "Choosing Here and Now versus There and Later: The Moderating Role of Psychological Distance on Assortment Size Preferences," *Journal of Consumer Research*, 39 (4), 751–68.

Gorn, Gerald J, Amitava Chattopadhyay, Jaideep Sengupta, and Shashank Tripathi (2004), "Waiting for the Web: How Screen Color Affects Time Perception," *Journal of Marketing Research*, 41 (2), 215–25.

Goudey, Alain and Gaël Bonnin (2016), "Must smart objects look human? Study of the impact of anthropomorphism on the acceptance of companion robots," *Recherche et Applications en Marketing (English Edition)*, 31 (2), 2–20.

Gray, Peter B, Jimmy Vuong, David T Zava, and Timothy S McHale (2018), "Testing men's hormone responses to playing League of Legends: No changes in testosterone, cortisol, DHEA or androstenedione but decreases in aldosterone," *Computers in Human Behavior*, 83, 230–34.

Gretz, Richard T (2010), "Hardware quality vs. network size in the home video game industry," *Journal of Economic Behavior & Organization*, 76 (2), 168–83.

Griffin, R J, Zheng Yang, E ter Huurne, F Boerner, S Ortiz, and S Dunwoody (2008), "After the Flood: Anger, Attribution, and the Seeking of Information," *Science Communication*, 29 (3), 285–315.

Griffith, David A and Qimei Chen (2004), "The Influence of Virtual Direct Experience (VDE) on On-Line Ad Message Effectiveness," *Journal of Advertising*, 33 (1), 55–68.

Guitart, Ivan A and Guillaume Hervet (2017), "The impact of contextual television ads on online conversions: An application in the insurance industry," *International Journal of Research in Marketing*, 34 (2), 480–98.

Gursoy, Dogan, Eric R Spangenberg, and Denney G Rutherford (2006), "The Hedonic and Utilitarian Dimensions of Attendees' Attitudes Toward Festivals," *Journal of Hospitality & Tourism Research*, 30 (3), 279–94.

Hair, Joe F, Christian M Ringle, and Marko Sarstedt (2014), "PLS-SEM: Indeed a Silver Bullet," *Journal of Marketing Theory and Practice*, 19 (2), 139–52.

Hair, Joseph F, William C Black, Barry J Babin, and Rolph E Anderson (2013), *Multivariate Data Analysis: Pearson New International Edition*, Pearson Higher Ed.

Halkias, G and F Kokkinaki (2014), "The degree of ad–brand incongruity and the distinction between schema-driven and stimulus-driven attitudes," *Journal of Advertising*, 43 (4), 397–409.

Halkias, Georgios and Flora Kokkinaki (2013), "Increasing advertising effectiveness through incongruity-based tactics: The moderating role of consumer involvement," *Journal of Marketing Communications*, 19 (3), 182–97.

Hallmann, Kirstin and Thomas Giel (2017), "eSports – Competitive sports or recreational activity?," *Sport Management Review*.

Hamari, Juho and Max Sjöblom (2017), "What is eSports and why do people watch it?," *Internet Research*, 27 (2), 211–32.

Hamari, Juho, Aqdas Malik, Johannes Koski, and Aditya Johri (2018), "Uses and Gratifications of Pokémon Go: Why do People Play Mobile Location-Based Augmented Reality Games?," *International Journal of Human–Computer Interaction*, 35 (9), 804–19.

Hamilton, William A, Oliver Garretson, and Andruid Kerne (2014), "Streaming on twitch," *Conference proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems*, (M. Jones, P. Palanque, A. Schmidt, and T. Grossman, eds.), 1315–24.

Han, Sang Pil, Sungho Park, and Wonseok Oh (2016), "Mobile App Analytics: A Multiple Discrete-continuous Choice Framework," *MIS quarterly*, 40 (4), 983–1008.

Han, Sangpil, Jiwon Choi, Hyunchil Kim, John A Davis, and Ki-Young Lee (2015), "The effectiveness of image congruence and the moderating effects of sponsor motive and cheering event fit in sponsorship," *International Journal of Advertising*, 32 (2), 301–17.

Harris, Randy Allen (2005), *Voice Interaction Design: Crafting the New Conversational Speech Systems*, San Francisco, CA, USA: Morgan Kaufmann Publishers Inc.

Hartmann, Tilo and Christoph Klimmt (2006), "Gender and Computer Games: Exploring Females' Dislikes," *Journal of Computer-Mediated Communication*, 11 (4), 910–31.

Hauswald, Johann, Michael A Laurenzano, Yunqi Zhang, Cheng Li, Austin Rovinski, Arjun Khurana, Ronald G Dreslinski, Trevor Mudge, Vinicius Petrucci, Lingjia Tang, and Jason Mars (2015), "Sirius: An Open End-to-End Voice and Vision Personal Assistant and Its Implications for Future Warehouse Scale Computers," New York, NY, USA: ACM, 223–38.

Hayes, Andrew F (2017), *Introduction to Mediation, Moderation, and Conditional Process Analysis, Second Edition*, Guilford Publications.

Hayes, Andrew F and Kristopher J Preacher (2013), "Statistical mediation analysis with a multicategorical independent variable," *British Journal of Mathematical and Statistical Psychology*, 67 (3), 451–70.

Hayes-Roth, Barbara (1995), "An architecture for adaptive intelligent systems," *Artificial Intelligence*, 72 (1-2), 329–65.

Heere, Bob (2018), "Embracing the sportification of society: Defining e-sports through a polymorphic view on sport," *Sport Management Review*, 21 (1), 21–24.

Heerink, Marcel, Ben Kröse, Vanessa Evers, and Bob Wielinga (2010), "Assessing Acceptance of Assistive Social Agent Technology by Older Adults: the Almere Model," *International Journal of Social Robotics*, 2 (4), 361–75.

Hennig-Thurau, Thorsten and Gianfranco Walsh (2004), "Electronic Word-of-Mouth: Motives for and Consequences of Reading Customer Articulations on the Internet," *International Journal of Electronic Commerce*, 8 (2), 51–74.

Hennig-Thurau, Thorsten, André Marchand, and Barbara Hiller (2012), "The relationship between reviewer judgments and motion picture success: re-analysis and extension," *Journal of Cultural Economics*, 36 (3), 249–83.

Hennig-Thurau, Thorsten, Edward C Malthouse, Christian Friege, Sonja Gensler, Lara Lobschat, Arvind Rangaswamy, and Bernd Skiera (2010), "The Impact of New Media on Customer Relationships," *Journal of Service Research*, 13 (3), 311–30.

Hennig-Thurau, Thorsten, Kevin P Gwinner, Gianfranco Walsh, and Dwayne D Gremler (2004), "Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet?," *Journal of Interactive Marketing*, 18 (1), 38–52.

Hennig-Thurau, Thorsten, Mark B Houston, and Torsten Heitjans (2009), "Conceptualizing and Measuring the Monetary Value of Brand Extensions: The Case of Motion Pictures," *Journal of Marketing*, 73 (6), 167–83.

Hernandez, José Mauro da Costa, Scott A Wright, and Filipe Ferminiano Rodrigues (2015), "Attributes Versus Benefits: The Role of Construal Levels and Appeal Type on the Persuasiveness of Marketing Messages," *Journal of Advertising*, 44 (3), 243–53.

Herrewijn, Laura and Karolien Poels (2015), "The impact of social setting on the recall and recognition of in-game advertising," *Computers in Human Behavior*, 53, 544–55.

Hilvert-Bruce, Zorah, James T Neill, Max Sjöblom, and Juho Hamari (2018), "Social motivations of live-streaming viewer engagement on Twitch," *Computers in Human Behavior*, 84, 58–67.

Hirschman, Elizabeth C and Morris B Holbrook (1982), "Hedonic Consumption: Emerging Concepts, Methods and Propositions," *Journal of Marketing*, 46 (3), 92.

Homburg, Christian and Andreas Fürst (2005), "How Organizational Complaint Handling Drives Customer Loyalty: An Analysis of the Mechanistic and the Organic Approach," *Journal of Marketing*, 69 (3), 95–114.

Homburg, Christian and Andreas Fürst (2007), "See no evil, hear no evil, speak no evil: a study of defensive organizational behavior towards customer complaints," *Journal of the Academy of Marketing Science*, 35 (4), 523–36.

Hootsuite (2019), "Digital 2019: Essential Insights Into How People Around the World Use the Internet, Mobile Devices, Social Media, and E-Commerce
," 1–221.

Horowitz, M. J. (1972), "Image formation: clinical observations and a cognitive model," in *The function and nature of imagery*, P. W. Sheehan, ed., New York: Academic Press New York
, 281–309.

Horstmann, Aike C, Nikolai Bock, Eva Linhuber, Jessica M Szczuka, Carolin Straßmann, and Nicole C Krämer (2018), "Do a robot's social skills and its objection discourage interactants from switching the robot off?," *PLOS ONE*, (H. Kjellström, ed.), 13 (7), e0201581.

Hoshikawa, Karina (2016), "A Brief History of How Subscription Boxes Changed the Way We Shop for Beauty Products," *fashionista.com*, (accessed March 8, 2019), [available at https://fashionista.com/2016/08/beauty-subscription-boxes-history].

House, Robert J (2004), *Culture, leadership, and organizations. The GLOBE study of 62 societies*, Thousand Oaks: Sage Publication.

Houston, Michael J, Terry L Childers, and Susan E Heckler (1987), "Picture-Word Consistency and the Elaborative Processing of Advertisements," *Journal of Marketing Research*, 24 (4), 359–69.

Hsu, Chin-Lung and Hsi-Peng Lu (2004), "Why do people play on-line games? An extended TAM with social influences and flow experience," *Information & Management*, 41 (7), 853–68.

Hu, Li tze and Peter M Bentler (1999), "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives," *Structural Equation Modeling: A Multidisciplinary Journal*, 6 (1), 1–55.

Hu, Mu, Mingli Zhang, and Yu Wang (2017), "Why do audiences choose to keep watching on live video streaming platforms?," *Computers in Human Behavior*, 75, 594–606.

Huang, J H and T K Yang (2012), "The effectiveness of in-game advertising: the impacts of ad type and game/ad relevance," *International Journal of Electronic Business Management*, 10 (1), 61–72.

Hura, Susan L (2017), "Usability Testing of Spoken Conversational Systems," *J. Usability Studies*, 12 (4), 155–63.

IGN (2013), "GTA 5 Currently Holds Seven Guinness World Records - IGN."

Imaz, M and D Benyon (2007), "Designing with Blends: Conceptual Foundations of Human–Computer Interaction and Software Engineering", MIT Press, Cambridge.

IMDB (2016), "*Grand Theft Auto V*," *www.imdb.com*, (accessed November 24, 2017), [available at http://www.imdb.com/title/tt2103188/].

Irmak, Caglar, Cheryl J Wakslak, and Yaacov Trope (2013), "Selling the Forest, Buying the Trees: The Effect of Construal Level on Seller-Buyer Price Discrepancy," *Journal of Consumer Research*, 40 (2), 284–97.

Ismagilova, Elvira, Emma L Slade, Nripendra P Rana, and Yogesh K Dwivedi (2019), "The Effect of Electronic Word of Mouth Communications on Intention to Buy: A Meta-Analysis," *Information Systems Frontiers*, 1–24.

Jarvenpaa, Sirkka L, Noam Tractinsky, and Michael Vitale (2000), "Consumer trust in an Internet store," *Information Technology and Management*, 1 (1-2), 45–71.

Jeong, So Won, Ann Marie Fiore, Linda S Niehm, and Frederick O Lorenz (2013), "The role of experiential value in online shopping," *Internet Research*, 19 (1), 105–24.

Jeong, Yongick and Cynthia M King (2010), "Impacts of Website Context Relevance on Banner Advertisement Effectiveness," *Journal of Promotion Management*, 16 (3), 247–64.

Jhang, Ji Hoon, Susan Jung Grant, and Margaret C Campbell (2012), "Get It? Got It. Good! Enhancing New Product Acceptance by Facilitating Resolution of Extreme Incongruity," *Journal of Marketing Research*, 49 (2), 247–59.

Jiang and Benbasat (2007), "The Effects of Presentation Formats and Task Complexity on Online Consumers' Product Understanding," *MIS quarterly*, 31 (3), 475.

Jiang, Zhenhui and Izak Benbasatz (2014), "Virtual Product Experience: Effects of Visual and Functional Control of Products on Perceived Diagnosticity and Flow in Electronic Shopping," *Journal of Management Information Systems*, 21 (3), 111–47.

Jin, Xiao-Ling, Matthew K O Lee, and Christy M K Cheung (2010), "Predicting continuance in online communities: model development and empirical test," *Behaviour & Information Technology*, 29 (4), 383–94.

Kahneman, Daniel (1973), *Attention and effort*, Prentice Hall.

Kamleitner, Bernadette (2011), "When Imagery Influences Spending: The role of ownership simulations," *Journal of Psychology*, 219 (4), 231–37.

Kamleitner, Bernadette and Silvia Feuchtl (2015), "'As if It Were Mine': Imagery Works by Inducing Psychological Ownership," *Journal of Marketing Theory and Practice*, 23 (2), 208–23.

Kane, Gerald C and Maryam Alavi (2007), "Information Technology and Organizational Learning: An Investigation of Exploration and Exploitation Processes," *Organization Science*, 18 (5), 796–812.

Kane, Joanne, Leaf Van Boven, and A Peter McGraw (2012), "Prototypical prospection: future events are more prototypically represented and simulated than past events," *European Journal of Social Psychology*, (K. Epstude and J. Peetz, eds.), 42 (3), 354–62.

Kannan, P K and Hongshuang Alice Li (2016), "Digital marketing: A framework, review and research agenda," *International Journal of Research in Marketing*, 34 (1), 22–45.

Kardes, Frank R, Maria L Cronley, and John Kim (2006), "Construal-Level Effects on Preference Stability, Preference-Behavior Correspondence, and the Suppression of Competing Brands," *Journal of Consumer Psychology*, 16 (2), 135–44.

Kardes, Frank R, Maria L Cronley, James J Kellaris, and Steven S Posavac (2004), "The Role of Selective Information Processing in Price-Quality Inference: Table 1," *Journal of Consumer Research*, 31 (2), 368–74.

Karp, David A and William C Yoels (1990), "Sport and Urban Life," *Journal of Sport and Social Issues*, 14 (2), 77–102.

Katz, Elihu, Hadassah Haas, and Michael Gurevitch (1973), "On the Use of the Mass Media for Important Things," *American Sociological Review*, 38 (2), 164–81.

Katz, Elihu, Jay G Blumler, and Michael Gurevitch (1973), "Uses and Gratifications Research," *The Public Opinion Quarterly*, 37 (4), 509–23.

Katz, Michael L and Carl Shapiro (1994), "Systems Competition and Network Effects," *The Journal of Economic Perspectives*, 8 (2), 93–115.

Kaye, Linda K, Charlotte R Pennington, and Joseph J McCann (2018), "Do casual gaming environments evoke stereotype threat? Examining the effects of explicit priming and avatar gender," *Computers in Human Behavior*, 78, 142–50.

Keller, Kevin Lane (2014), "Research Priorities 2014-2016," 1–20.

Kelley, H H (1967), "Attribution theory in social psychology," *Nebraska Symposium on Motivation*, 192–238.

Kemp, Simon (2018), "Digital in 2018 - Essential Insights into Internet, Social Media, Mobile, and Ecommerce Use Around the World," we are social, 1–153.

Keng, Ching-Jui and Hung-Yuan Lin (2006), "Impact of Telepresence Levels on Internet Advertising Effects," *CyberPsychology & Behavior*, 9 (1), 82–94.

Kerr, Anna and Daryl May (2011), "An exploratory study looking at the relationship marketing techniques used in the music festival industry," *Journal of Retail & Leisure Property*, 9 (5), 451–64.

Kim, Hakkyun and Deborah Roedder John (2008), "Consumer response to brand extensions: Construal level as a moderator of the importance of perceived fit," *Journal of Consumer Psychology*, 18 (2), 116–26.

Kim, Hee-Woong, Hock Chuan Chan, and Sumeet Gupta (2007), "Value-based Adoption of Mobile Internet: An empirical investigation," *Decision Support Systems*, 43 (1), 111–26.

Kim, Sung S, Naresh K Malhotra, and Sridhar Narasimhan (2005), "Research Note—Two Competing Perspectives on Automatic Use: A Theoretical and Empirical Comparison," *Information Systems Research*, 16 (4), 418–32.

Kim, Yongjae and Stephen D Ross (2006), "An exploration of motives in sport video gaming," *International Journal of Sports Marketing and Sponsorship*, 8 (1), 28–40.

Kim, Young Hoon, Dan J Kim, and Tun-Min Catherine Jai (2016), "One Destination and Two Events," *Event Management*, 20 (3), 327–39.

King, Karen Whitehill, Leonard N Reid, and Wendy Macias (2004), "Selecting Media for National Advertising Revisited: Criteria of Importance to Large-Company Advertising Managers," *Journal of Current Issues & Research in Advertising*, 26 (1), 59–67.

Kinsella, Bret (2018), "Smart Speaker Owner Demographics Are Getting Younger as Market Nearly Tripled in 12 Months," *voicebot.ai*.

Kirkup, Naomi and Matthew Sutherland (2015), "Exploring the relationships between motivation, attachment and loyalty within sport event tourism," *Current Issues in Tourism*, 20 (1), 7–14.

Kopp, Stefan, Lars Gesellensetter, Nicole C Krämer, and Ipke Wachsmuth (2005), "A Conversational Agent as Museum Guide – Design and Evaluation of a Real-World Application," in *Intelligent Virtual Agents*, Lecture Notes in Computer Science, Berlin, Heidelberg: Springer Berlin Heidelberg, 329–43.

Kosslyn, Stephen M, Jennifer Brunn, Kyle R Cave, and Roger W Wallach (1984), "Individual differences in mental imagery ability: A computational analysis," *Cognition*, 18 (1-3), 195–243.

Koufaris, Marios and William Hampton-Sosa (2004), "The development of initial trust in an online company by new customers," *Information & Management*, 41 (3), 377–97.

Krishnamurthy, Parthasarathy and Mita Sujan (1999), "Retrospection Versus Anticipation: the Role of the Ad Under Retrospective and Anticipatory Self-Referencing," *Journal of Consumer Research*, 26 (1), 55–69.

Kuk, George (2006), "Strategic Interaction and Knowledge Sharing in the Kde Developer Mailing List," *Management Science*, 52 (7), 1031–42.

Kulczynski, Alicia, Stacey Baxter, and Tamara Young (2016), "Measuring Motivations for Popular Music Concert Attendance," *Event Management*, 20 (2), 239–54.

Laczniak, Russell N, Thomas E DeCarlo, and Sridhar N Ramaswami (2001), "Consumers' Responses to Negative Word-of-Mouth Communication: An Attribution Theory Perspective," *Journal of Consumer Psychology*, 11 (1), 57–73.

Lamberton, Cait and Andrew T Stephen (2016), "A thematic exploration of digital, social media, and mobile marketing: Research evolution from 2000 to 2015 and an agenda for future inquiry," *Journal of Marketing*, 80 (6), 146–72.

Lampel, Joseph and Ajay Bhalla (2007), "The Role of Status Seeking in Online Communities: Giving the Gift of Experience," *Journal of Computer-Mediated Communication*, 12 (2), 434–55.

Lao, Aurély (2014), "Mental imagery and its determinants as factors of consumers emotional and behavioural responses: Situation analysis in online shopping," *Recherche et Applications en Marketing (English Edition)*, 28 (3), 58–81.

Larose, Robert, Dana Mastro, and Matthew S Eastin (2001), "Understanding Internet Usage," *Social Science Computer Review*, 19 (4), 395–413.

Ledbetter, Andrew M and Jeffrey H Kuznekoff (2011), "More Than a Game: Friendship Relational Maintenance and Attitudes Toward Xbox LIVE Communication," *Communication Research*, 39 (2), 269–90.

Lee, Choong-Ki, Yong-Ki Lee, and Bruce E Wicks (2004), "Segmentation of festival motivation by nationality and satisfaction," *Tourism Management*, 25 (1), 61–70.

Lee, Mira and Ronald J Faber (2007), "Effects of Product Placement in On-Line Games on Brand Memory: A Perspective of the Limited-Capacity Model of Attention," *Journal of Advertising*, 36 (4), 75–90.

Lee, Myung Soo, Dennis M Sandler, and David Shani (1997), "Attitudinal constructs towards sponsorship," *International Marketing Review*, 14 (3), 159–69.

Lee, Robin S (2013), "Vertical Integration and Exclusivity in Platform and Two-Sided Markets," *American Economic Review*, 103 (7), 2960–3000.

Lee, Woojin and Ulrike Gretzel (2012), "Designing persuasive destination websites: A mental imagery processing perspective," *Tourism Management*, 33 (5), 1270–80.

Lee, Yih Hwai and Charlotte Mason (1999), "Responses to Information Incongruency in Advertising: The Role of Expectancy, Relevancy, and Humor," *Journal of Consumer Research*, 26 (2), 156–69.

Leeflang, Peter S H, Peter C Verhoef, Peter Dahlström, and Tjark Freundt (2014), "Challenges and solutions for marketing in a digital era," *European Management Journal*, 32 (1), 1–12.

Lessard-Bonaventure, Simon and Jean-Charles Chebat (2015), "Psychological Ownership, Touch, and Willingness to Pay for an Extended Warranty," *Journal of Marketing Theory and Practice*, 23 (2), 224–34.

Lester, James C, Sharolyn A Converse, Susan E Kahler, S Todd Barlow, Brian A Stone, and Ravinder S Bhogal (1997), "The persona effect: Affective impact of animated pedagogical agents," New York, New York, USA: ACM Press, 359–66.

Lewis, Carmen C, Cherie E Fretwell, Jim Ryan, and James B Parham (2013), "Faculty Use of Established and Emerging Technologies in Higher Education: A Unified Theory of Acceptance and Use of Technology Perspective," *International Journal of Higher Education*, 2 (2), 22-34.

Li, Hao and Hui-Yi Lo (2014), "Do You Recognize Its Brand? The Effectiveness of Online In-Stream Video Advertisements," *Journal of Advertising*, 44 (3), 208–18.

Li, Xiang and James F Petrick (2005), "A Review of Festival and Event Motivation Studies," *Event Management*, 9 (4), 239–45.

Li, Zhaolin Erick, Qiang Lu, and Masoud Talebian (2014), "Online versus bricks-and-mortar retailing: a comparison of price, assortment and delivery time," *International Journal of Production Research*, 53 (13), 3823–35.

Liberman, Nira and Yaacov Trope (2008), "The Psychology of Transcending the Here and Now," *Science*, 322 (5905), 1201–5.

Liberman, Nira, Michael D Sagristano, and Yaacov Trope (2002), "The effect of temporal distance on level of mental construal," *Journal of Experimental Social Psychology*, 38 (6), 523–34.

Lim, Seongtaek, Sang Yun Cha, Chala Park, Inseong Lee, and Jinwoo Kim (2012), "Getting closer and experiencing together: Antecedents and consequences of psychological distance in social media-enhanced real-time streaming video," *Computers in Human Behavior*, 28 (4), 1365–78.

Limayem, Hirt, Cheung (2007), "How Habit Limits the Predictive Power of Intention: The Case of Information Systems Continuance," *MIS quarterly*, 31 (4), 705.

Limayem, Moez and Sabine Gabriele Hirt (2003), "Force of Habit and Information Systems Usage: Theory and Initial Validation," *Journal of the Association for Information Systems*, 4 (1), 3.

Lin, Long Yi (2010), "The relationship of consumer personality trait, brand personality and brand loyalty: an empirical study of toys and video games buyers," *Journal of Product & Brand Management*, 19 (1), 4–17.

Liu, Charles Zhechao, Yoris A Au, and Hoon Seok Choi (2014), "Effects of Freemium Strategy in the Mobile App Market: An Empirical Study of Google Play," *Journal of Management Information Systems*, 31 (3), 326–54.

Liu, Wumei, Rajeev Batra, and Haizhogn Wang (2017), "Product Touch and Consumers Online and Offline Buying - The Role of Mental Representation," *Journal of Retailing*, 93 (3), 1–13.

Loewenstein, George (1996), "Out of Control: Visceral Influences on Behavior," *Organizational Behavior and Human Decision Processes*, 65 (3), 272–92.

Lohmöller, Jan-Bernd (1989), *Latent Variable Path Modeling with Partial Least Squares*, Heidelberg: Springer Science & Business Media.

Lutz, Kathy A and Richard J Lutz (1978), "Imagery-Eliciting Strategies: Review and Implications of Research," *ACR North American Advances*, NA-05.

Lynch, John G. and Gal Zauberman (2007), "Construing Consumer Decision Making," *Journal of Consumer Psychology*, 17 (2), 107–12.

MacDorman, K F and Hiroshi Ishiguro (2006), "The uncanny advantage of using androids in cognitive and social science research," *Interaction Studies*, 7 (3), 293–377.

Macey, Joseph and Juho Hamari (2017), "Investigating Relationships Between Video Gaming, Spectating Esports, and Gambling," *Computers in Human Behavior*, 80, 344-53.

MacInnis, Deborah J and Linda L Price (1987), "The Role of Imagery in Information Processing: Review and Extensions," *Journal of Consumer Research*, 13 (4), 473.

Maclnnis, Deborah J and Bernard J Jaworski (1989), "Information Processing from Advertisements: Toward an Integrative Framework," *Journal of Marketing*, 53 (4), 1–23.

Magotra, Irbha, Jyoti Sharma, and Supran Kumar Sharma (2016), "Assessing personal disposition of individuals towards technology adoption," *Future Business Journal*, 2 (1), 81–101.

Maier, Erik and Florian Dost (2017), "The positive effect of contextual image backgrounds on fluency and liking," *Journal of Retailing and Consumer Services*, 40, 109–16.

Maille, V and N Fleck (2011), "Perceived congruence and incongruence: Toward a clarification of the concept, its formation and measure," *Recherche et Applications en Marketing,* 26 (2), 77–113.

Malkoc, Selin A, Gal Zauberman, and James R Bettman (2010), "Unstuck from the concrete: Carryover effects of abstract mindsets in intertemporal preferences," *Organizational Behavior and Human Decision Processes*, 113 (2), 112–26.

Mandler, G (1982), "The Structure of Value: Accounting for Taste," in *Affect and Cognition*, M. S. Clarck and S. T. Fiske, eds., 3-36, 3–36.

Marchand, André (2016), "The power of an installed base to combat lifecycle decline: The case of video games," *International Journal of Research in Marketing*, 33 (1), 140–54.

Marchand, André and Thorsten Hennig-Thurau (2013), "Value Creation in the Video Game Industry: Industry Economics, Consumer Benefits, and Research Opportunities," *Journal of Interactive Marketing*, 27 (3), 141–57.

Marks, D F (1995), "New directions for mental imagery research.," *Journal of Mental Imagery*, 3-4 (19), 153–67.

Marks, David F (1973), "Visual imagery differences and eye movements in the recall of pictures," *Perception & Psychophysics*, 14 (3), 407–12.

Martensen, Anne and Lars Gronholdt (2008), "How events work: understanding consumer responses to event marketing," *Innovative Marketing*, 4 (4), 44–56.

Martensen, Anne, Lars Gronholdt, Lars Bendtsen, and Martin Juul Jensen (2007), "Application of a Model for the Effectiveness of Event Marketing," *Journal of Advertising Research*, 47 (3), 283–301.

Maslow, A H (1943), "A theory of human motivation," *Psychological review*, 50 (4), 370–96.

Maxham, James G, III and Richard G Netemeyer (2002a), "Modeling customer perceptions of complaint handling over time: the effects of perceived justice on satisfaction and intent," *Journal of Retailing*, 78 (4), 239–52.

Maxham, James G, III and Richard G Netemeyer (2002b), "A Longitudinal Study of Complaining Customers' Evaluations of Multiple Service Failures and Recovery Efforts," *Journal of Marketing*, 66 (4), 57–71.

Maxham, James G, III and Richard G Netemeyer (2003), "Firms Reap What They Sow: The Effects of Shared Values and Perceived Organizational Justice on Customers' Evaluations of Complaint Handling," *Journal of Marketing*, 67 (1), 46–62.

Mazodier, Marc and Dwight Merunka (2011), "Achieving brand loyalty through sponsorship: the role of fit and self-congruity," *Journal of the Academy of Marketing Science*, 40 (6), 807–20.

Mazodier, Marc and Pascale Quester (2014), "The role of sponsorship fit for changing brand affect: A latent growth modeling approach," *International Journal of Research in Marketing*, 31 (1), 16–29.

McCarthy, John, Marvin Lee Minsky, Claude Elwood Shannon, and Nathaniel Rochester (1955), *A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence*.

McCollough, Michael A, Leonard L Berry, and Manjit S Yadav (2000), "An Empirical Investigation of Customer Satisfaction after Service Failure and Recovery," *Journal of Service Research*, 3 (2), 121–37.

McDonald, Emma (2017), "The Global Games Market 2017 | Per Region & Segment | Newzoo."

McDonald, Emma (2019), “Betting on Billions -Unlocking the Power of Mobile Gamers,” Newzoo & Activision Blizzard Media, 1–25.

McDonald, Mark A, George R Milne, and J Hong (2002), “Motivational factors for evaluating sport spectator and participant markets,” *Sport Marketing Quarterly*, 11 (2), 100–113.

Mehrabian, Albert and James A Russell (1974), "*An approach to environmental psychology,"* MIT Press (MA).

Mela, Carl F (2018), “Research Priorities 2018-2020,” 1–21.

Melnick, Kyle (2018), “Futuristic AR eSports Tournament Coming To USA - VRScout,” *vrscout.com*, (accessed May 10, 2019), [available at https://vrscout.com/news/ar-esports-tournament-usa-hado/].

Merhi, Mohammad I (2016), “Towards a framework for online game adoption,” *Computers in Human Behavior*, 60, 253–63.

Messick, David M and Karen S Cook (1984), “Equity Theory: Psychological and Sociological Perspectives.,” *Contemporary Sociology*, 13 (5), 619.

Metzger, Miriam J and Andrew J Flanagin (2013), “Credibility and trust of information in online environments: The use of cognitive heuristics,” *Journal of Pragmatics*, 59, 210–20.

Meyers-Levy, Joan and Alice M Tybout (1989), “Schema Congruity as a Basis for Product Evaluation,” *Journal of Consumer Research*, 16 (1), 39–54.

Micu, Camelia C and Robin A Coulter (2012), “The Impact of Pretrial Advertising on Post trial Product Evaluations: Assessing the Effects of Attribute Information for Hedonic and Utilitarian Products,” *Journal of Marketing Theory and Practice*, 20 (2), 189–202.

Millen, David R, Michael A Fontaine, and Michael J Muller (2002), “Understanding the benefit and costs of communities of practice,” *Communications of the ACM*, 45 (4), 69.

Milne, George R and Mark A McDonald (1999), *Sport marketing*, Sudbury, Mass: Jones and Bartlett.

Minecraftforum (2017), “*Official community forums, a great place to talk about the game* ,” *minecraftforum.net*, (accessed November 24, 2017), [available at www.minecraftforum.net

Miyazaki, Anthony D (1993), “How Many Shopping Days Until Christmas? a Preliminary Investigation of Time Pressures, Deadlines, and Planning Levels on Holiday Gift Purchases,” *ACR North American Advances*, NA-20.

Moe, Wendy W and Peter S Fader (2001), “Modeling Hedonic Portfolio Products: A Joint Segmentation Analysis of Music Compact Disc Sales,” *Journal of Marketing Research*, 38 (3), 376–85.

Monahan, Jennifer L (1998), “I Don't Know It But I like You: The Influence of Nonconscious Affect on Person Perception,” *Human Communication Research*, 24 (4), 480–500.

Moon, Ji-Won and Young-Gul Kim (2001), “Extending the TAM for a World-Wide-Web context,” *Information & Management*, 38 (4), 217–30.

Moore, David J and Leah J Bovell (2008), “The Affective-Cognitive Model of Stimulus-Based Affect: Individual Differences in Response to the Vividness of Product Descriptions,” *Noth American Advances in Consumer Research*, 35, 695–96.

Moore, Robert S, Claire Allison Stammerjohan, and Robin A Coulter (2005), “Banner Advertiser-Web Site Context Congruity and Color Effects on Attention and Attitudes,” *Journal of Advertising*, 34 (2), 71–84.

Moorman, Marjolein, Peter C Neijens, and Edith G Smit (2002), “The Effects of Magazine-Induced Psychological Responses and Thematic Congruence on Memory and Attitude toward the Ad in a Real-Life Setting,” *Journal of Advertising*, 31 (4), 27–40.

Mori, M (1970), “The uncanny valley,” *Energy*, 7 (4), 33–35.

Mori, Masahiro, Karl MacDorman, and Norri Kageki (2012), “The Uncanny Valley [From the Field],” *IEEE Robotics & Automation Magazine*, 19 (2), 98–100.

Müller, Holger (2013), "The real-exposure effect revisited — How purchase rates vary under pictorial vs. real item presentations when consumers are allowed to use their tactile sense," *International Journal of Research in Marketing*, 30 (3), 304–7.

Nass, Clifford and Kwan Min Lee (2001), "Does computer-synthesized speech manifest personality? Experimental tests of recognition, similarity-attraction, and consistency-attraction.," *Journal of Experimental Psychology: Applied*, 7 (3), 171–81.

Nass, Clifford Ivar and Youngme Moon (2000), "Machines and Mindlessness: Social Responses to Computers."

Nass, Clifford, Jonathan Steuer, and Ellen R Tauber (1994), "Computers are social actors," New York, New York, USA: ACM Press, 204.

Nelson, Michelle R (2002), "Recall of Brand Placements in Computer/Video Games," *Journal of Advertising Research*, 42 (2), 80–92.

Nicholson, Rachael E and Douglas G Pearce (2001), "Why Do People Attend Events: A Comparative Analysis of Visitor Motivations at Four South Island Events," *Journal of Travel Research*, 39 (4), 449–60.

Nigam, M K and D Klahr (2000), "If robots make choices, are they alive? Children's judgments of the animacy of intelligent artifacts," *Proceedings of the nd Annual Conference of the Cognitive Science Society*.

Nisbett, Richard and Lee Ross (1980), "Assigning Weights to Sata: The Vividness Criterion," in *Human inference Strategies and shortcomings of social judgment*, R. Nisbett and L. Ross, eds., Inglewood Cliffs: Human inference: Strategies and shortcomings of social judgment, 43–62.

Ohanian, Roobina (1990), "Construction and Validation of a Scale to Measure Celebrity Endorsers' Perceived Expertise, Trustworthiness, and Attractiveness," *Journal of Advertising*, 19 (3), 39–52.

Oliver, Richard L (1977), "Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation.," *Journal of Applied Psychology*, 62 (4), 480–86.

Oliver, Richard L (1980), "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research*, 17 (4), 460–69.

Oliver, Richard L and Wayne S DeSarbo (1988), "Response Determinants in Satisfaction Judgments," *Journal of Consumer Research*, 14 (4), 495–507.

Olney, Thomas J, Morris B Holbrook, and Rajeev Batra (1991), "Consumer Responses to Advertising: The Effects of Ad Content, Emotions, and Attitude toward the Ad on Viewing Time," *Journal of Consumer Research*, 17 (4), 440.

Olson, C (2016), "Just say it: The future of search is voice and personal digital assistants," *campaignlive.co.uk*, (accessed February 19, 2019), [available at https://www.campaignlive.co.uk/article/just-say-it-future-search-voice-personal-digital-assistants/1392459].

Olson, Erik L and Hans Mathias Thjømøe (2011), "Explaining and Articulating the Fit Construct in Sponsorship," *Journal of Advertising*, 40 (1), 57–70.

Ortony, Andrew (2003), "On making believable emotional agents believable," in *Emotions in Humans and Artifacts*, R. Trappl, P. Petta, and S. Payr, eds., 189–211.

Osgood, Charles E and Percy H Tannenbaum (1955), "The principle of congruity in the prediction of attitude change.," *Psychological review*, 62 (1), 42–55.

Ostinelli, Massimiliano and Ulf Böckenholt (2017), "Overcoming lower imagery ability through process priming," *International Journal of Research in Marketing*, 34 (4), 799–812.

Oyedele, Adesegun and Penny M Simpson (2018), “Streaming apps: What consumers value,” *Journal of Retailing and Consumer Services*, 41, 296–304.

Paivio, Allan (1991), “Dual coding theory: Retrospect and current status.,” *Canadian Journal of Psychology/Revue canadienne de psychologie*, 45 (3), 255–87.

Palmgreen, Philip, Lawrence A Wenner, and Karl Erik Rosengren (1985), “Uses and Gratifications Research: The Past Ten Years,” in *Media Gratifications Research. Current Perspectives*, Media Gratifications Research. Current Perspectives, K. E. Rosengren, L. A. Wenner, and P. Palmgren, eds., London: SAGE Publication, 11–37.

Park, Jihye, Sharron J Lennon, and Leslie Stoel (2005), “On-line product presentation: Effects on mood, perceived risk, and purchase intention,” *Psychology & Marketing*, 22 (9), 695–719.

Parsons, Andrew and Denise Conroy (2006), “Sensory stimuli and e-tailers,” *Journal of Consumer Behaviour*, 5 (1), 69–81.

Peck, Joann and Suzanne B Shu (2009), “The Effect of Mere Touch on Perceived Ownership,” *Journal of Consumer Research*, 36 (3), 434–47.

Peck, Joann and Terry L Childers (2003), “Individual Differences in Haptic Information Processing: The ‘Need for Touch’ Scale,” *Journal of Consumer Research*, 30 (3), 430–42.

Peck, Joann, Victor A Barger, and Andrea Webb (2013), “In search of a surrogate for touch: The effect of haptic imagery on perceived ownership,” *Journal of Consumer Psychology*, 23 (2), 189–96.

Petrova, Petia K and Robert B Cialdini (2005), “Fluency of Consumption Imagery and the Backfire Effects of Imagery Appeals,” *Journal of Consumer Research*, 32 (3), 442–52.

Petty, Richard E and John T Cacioppo (1986), "The Elaboration Likelihood Model of Persuasion," *Advances in Experimental Social Psychology, Advances in Experimental Social Psychology*, Elsevier, 123–205.

Pham, Michel Tuan and A V Muthukrishnan (2002), “Search and Alignment in Judgment Revision: Implications for Brand Positioning,” *Journal of Marketing Research*, 39 (1), 18–30.

Phillips, D M (1996), “Anticipating the Future: The Role of Consumption Visions in Consumer Behavior.,” *Advances in Consumer Research*, 23 (1), 70–75.

Phillips, Diane M, Jerry C Olson, and Hans Baumgartner (1995), “Consumption Visions in Consumer Decision Making,” *ACR North American Advances*, 22, 280–84.

Picard, Rosalind W (2003), “Affective computing: challenges,” *International Journal of Human-Computer Studies*, 59 (1-2), 55–64.

Pierce, Jon L, Tatiana Kostova, and Kurt T Dirks (2003), “The state of psychological ownership: Integrating and extending a century of research.,” *Review of General Psychology*, 7 (1), 84–107.

Pizzo, Anthony, Bradley Baker, Sangwon Na, Mi Ae Lee, Doohan Kim, and Daniel Funk (2017), “eSport vs Sport: A Comparison of Spectator Motives,” *Sport Marketing Quarterly*, 27 (2), 108–23.

Pocketgamer (2017), “*App Store Metrics*,” *pocketgamer.biz*, (accessed November 24, 2017), [available at http://www.pocketgamer.biz/metrics/app-store/].

Pollay, Richard W and Banwari Mittal (1993), “Here's the Beef: Factors, Determinants, and Segments in Consumer Criticism of Advertising,” *Journal of Marketing*, 57 (3), 99–114.

Pons, Frank, Mehdi Mourali, and Simon Nyeck (2006), “Consumer Orientation Toward Sporting Events,” *Journal of Service Research*, 8 (3), 276–87.

Raman, Arumugam and Yahya Don (2013), “Preservice Teachers’ Acceptance of Learning Management Software: An Application of the UTAUT2 Model,” *International Education Studies*, 6 (7).

Rana, Williams, Dwivedi (2012), "Theories and Theoretical Models for Examining the Adoption of E-Government Services," *e-Service Journal*, 8 (2), 26.

Reeves, B and C Nass (1996), "The media equation - How people treat computers, television, and new media like real people and places," Chicago, IL, US: Center for the Study of Language and Information; New York, NY, US: Cambridge University Press.

Rickenberg, Raoul and Byron Reeves (2000), "The effects of animated characters on anxiety, task performance, and evaluations of user interfaces," New York, New York, USA: ACM Press, 49–56.

Ridings, Catherine M and David Gefen (2004), "Virtual Community Attraction: Why People Hang Out Online," *Journal of Computer-Mediated Communication*, 10 (1).

Ridinguer, L and J James (2002), "Female and male sport fans: A comparison of sport consumption motives," *Journal of Sport Behavior*, 25 (3), 260–78.

Riedl, René, Peter N C Mohr, Peter H Kenning, Fred D Davis, and Hauke R Heekeren (2014), "Trusting Humans and Avatars: A Brain Imaging Study Based on Evolution Theory," *Journal of Management Information Systems*, 30 (4), 83–114.

Riek, Laurel D, Tal-Chen Rabinowitch, Bhismadev Chakrabarti, and Peter Robinson (2009), "How anthropomorphism affects empathy toward robots," New York, New York, USA: ACM Press, 245.

Rifon, Nora J, Sejung Marina Choi, Carrie S Trimble, and Hairong Li (2004), "Congruence Effects in Sponsorship: The Mediating Role of Sponsor Credibility and Consumer Attributions of Sponsor Motive," *Journal of Advertising*, 33 (1), 29–42.

Rochet, Jean-Charles and Jean Tirole (2003), "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association*, 1 (4), 990–1029.

Roggeveen, Anne L, Dhruv Grewal, Claudia Townsend, and R Krishnan (2015), "The Impact of Dynamic Presentation Format on Consumer Preferences for Hedonic Products and Services," *Journal of Marketing*, 79 (6), 34–49.

Rohm, Andrew J and Vanitha Swaminathan (2004), "A typology of online shoppers based on shopping motivations," *Journal of business research*, 57 (7), 748–57.

Rosenberg, Milton J (1960), "Attitude organization and change. An analysis of consistency among attitude components," *Yale studies in attitude and communication*, New Haven: Yale Univ. Press.

Rossiter, John R (1982), "Visual Imagery: Applications to Advertising.," *Advances in Consumer Research*, 9 (1), 101–6.

Rothschild, Michael L and William C Gaidis (1981), "Behavioral Learning Theory: Its Relevance to Marketing and Promotions," *Journal of Marketing*, 45 (2), 70–78.

Roy, Gobinda, Biplab Datta, and Rituparna Basu (2016), "Trends and Future Directions in Online Marketing Research," *Journal of Internet Commerce*, 16 (1), 1–31.

Ruth, Julie A and Bernard L Simonin (2003), "Brought to You by Brand A and Brand B," *Journal of Advertising*, 32 (3), 19–30.

Salancik, Gerald R and Jeffrey Pfeffer (1978), "Uncertainty, Secrecy, and the Choice of Similar Others," *Social Psychology*, 41 (3), 246.

Salehan, Mohammad, Dan J Kim, and Changsu Kim (2017), "Use of Online Social Networking Services from a Theoretical Perspective of the Motivation-Participation-Performance Framework," *Journal of the Association for Information Systems*, 18 (2), 141–72.

Salwen, Michael B, Bruce Garrison, and Paul D Driscoll (2004), "Uses and Gratifications of Online and Offline News: New Wine in an Old Bottle?," in *Online News and the Public*, Online News and the Public, Routledge, 241–56.

Sawilowsky, Shlomo S and R Clifford Blair (1992), "A more realistic look at the robustness and Type II error properties of the t test to departures from population normality," *Psychological Bulletin*, 111 (2), 352–60.

Schaupp, L. Christian and France Bélanger (2005), "A Conjoint Analysis of Online Consumer Satisfaction," *Journal of Electronic Commerce Research*, 6 (2), 95–111.

Scheibe, Katrin, Kaja J Fietkiewicz, and Wolfgang G Stock (2016), "Information Behavior on Social Live Streaming Services," *Journal of Information Science Theory and Practice*, 4 (2), 6–20.

Schilling, Melissa A (2002), "Technology Success and Failure in Winner-Take-All Markets: The Impact of Learning Orientation, Timing, and Network Externalities," *Academy of Management Journal*, 45 (2), 387–98.

Schneider, Christoph (2006), "Virtual Product Experience: The Effects of Interactivity Task and Product Type on Presence Perceptions," *AMCIS Proceedings*, 998–1003.

Scholz, Tobias M (2019), *eSports is Business*, Cham: Palgrave Pivot.

Schwanenflugel, Paula J, Katherine Kip Harnishfeger, and Randall W Stowe (1988), "Context availability and lexical decisions for abstract and concrete words," *Journal of Memory and Language*, 27 (5), 499–520.

Seeger, A M, J Pfeiffer, and A Heinzl (2017), "When do we need a human? Anthropomorphic design and trustworthiness of conversational agents," *Proceedings of the Sixteenth Annual Pre-ICIS Workshop on HCI Research in MIS*, 15, 1–6.

Segev, S, W Wang, and J Fernandes (2014), "The effects of ad–context congruency on responses to advertising in blogs: Exploring the role of issue involvement," *International Journal of Advertising*, 33 (1), 17–36.

Sen, Shahana and Dawn Lerman (2007), "Why are you telling me this? An examination into negative consumer reviews on the Web," 21 (4), 76–94.

Seo, Won and Christine Green (2008), "Development of the Motivation Scale for Sport Online Consumption," *Journal of Sport Management*, 22 (1), 82-109.

Seo, Yuri (2013), "Electronic sports: A new marketing landscape of the experience economy," *Journal of Marketing Management*, 29 (13-14), 1542–60.

Seo, Yuri and Sang-Uk Jung (2016), "Beyond solitary play in computer games: The social practices of eSports," *Journal of Consumer Culture*, 16 (3), 635–55.

Severin, W J and J W Tankard (2013), *Communication Theories: Pearson New International Edition*, Austin: Pearson.

Shamdasani, Prem N, Andrea J S Stanaland, and Juliana Tan (2001), "Location, Location, Location: Insights for Advertising Placement on the Web," *Journal of Advertising Research*, 41 (4), 7–21.

Sheoran, Monika, Divesh Kumar, Vinod Kumar, and Deepak Verma (2018), "Understanding the trends of marketing research and its future directions: a citation analysis," *The Bottom Line*, 31 (3/4), 191–207.

Shiv, Baba and Alexander Fedorikhin (1999), "Heart and Mind in Conflict: the Interplay of Affect and Cognition in Consumer Decision Making," *Journal of Consumer Research*, 26 (3), 278–92.

Sinha, Jayati and Fang-Chi Lu (2019), "Ignored or Rejected: Retail Exclusion Effects on Construal Levels and Consumer Responses to Compensation," *Journal of Consumer Research*.

Sjöblom, Max and Juho Hamari (2017), "Why do people watch others play video games? An empirical study on the motivations of Twitch users," *Computers in Human Behavior*, 75, 985–96.

Slepian, Michael L, E J Masicampo, and Nalini Ambady (2015), "Cognition from on high and down low: Verticality and construal level.," *Journal of Personality and Social Psychology*, 108 (1), 1–17.

Smith, Amy K, Ruth Bolton, and Janet Wagner (1999), "A model of customer satisfaction with service encounters involving failure and recovery," *Journal of Marketing Research*, 36 (3), 356–72.

Song, Ji Hee and George M Zinkhan (2008), "Determinants of Perceived Web Site Interactivity," *Journal of Marketing*, 72 (2), 99–113.

Sparks, Beverley A and Janet R McColl-Kennedy (2001), "Justice strategy options for increased customer satisfaction in a services recovery setting," *Journal of business research*, 54 (3), 209–18.

Spector, Paul E and Michael T Brannick (2011), "Methodological Urban Legends: The Misuse of Statistical Control Variables," *Organizational Research Methods*, 14 (2), 287–305.

Speed, R and P Thompson (2000), "Determinants of Sports Sponsorship Response," *Journal of the Academy of Marketing Science*, 28 (2), 226–38.

Spiggle, Susan, Hang T Nguyen, and Mary Caravella (2012), "More Than Fit: Brand Extension Authenticity," *Journal of Marketing Research*, 49 (6), 967–83.

Spreng, Richard A and Richard W Olshavsky (1993), "A desires congruency model of consumer satisfaction," *Journal of the Academy of Marketing Science*, 21 (3), 169.

Sproull, Lee, Mani Subramani, Sara Kiesler, Janet Walker, and Keith Waters (1996), "When the Interface Is a Face," *Human-Computer Interaction*, 11 (2), 97–124.

Statista (2019a), "U.S. teens: video content consumption by platform 2018 | Statistic," *statista.com*, (accessed April 25, 2019a), [available at https://www.statista.com/statistics/631146/teens-video-content-platform-usa/].

Statista (2019b), "Global retail e-commerce market size 2014-2021 | Statista," *statista.com*, (accessed April 25, 2019b), [available at https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/].

Statista (2019c), "U.S. digital video penetration 2021 | Statistic," *statista.com*, (accessed April 25, 2019c), [available at https://www.statista.com/statistics/271612/percentage-of-digital-video-viewers-in-the-united-states/].

Stayman, Douglas M, Dana L Alden, and Karen H Smith (1992), "Some Effects of Schematic Processing on Consumer Expectations and Disconfirmation Judgments," *Journal of Consumer Research*, 19 (2), 240–55.

Steam (2015), "*The Witcher 3*," *steamdb.info*, (accessed November 24, 2017), [available at https://steamdb.info/app/292030/].

Steam (2017), "Counter-Strike: Global Offensive," *steamdb.info*, (accessed November 24, 2017), [available at https://steamdb.info/app/730/].

Steam (2018), "*Most played games*," *steamdb.info*, (accessed May 1, 2018), [available at https://steamdb.info/].

Steinmann, S, T Kilian, and D Brylla (2014), "Experiencing Products Virtually: The Role of Vividness and Interactivity in Influencing Mental Imagery and User Reactions."

Steinmann, Sascha, Gunnar Mau, and Hanna Schramm-Klein (2015), "Brand Communication Success in Online Consumption Communities," *Psychology & Marketing*, 32 (3), 356–71.

Stephen, Andrew T (2016), "The role of digital and social media marketing in consumer behavior," *Consumer behavior*, 10, 17–21.

Sternthal, Brian, Ruby Dholakia, and Clark Leavitt (1978), "The Persuasive Effect of Source Credibility: Tests of Cognitive Response," *Journal of Consumer Research*, 4 (4), 252–60.

Steuer, Jonathan (1992), "Defining Virtual Reality: Dimensions Determining Telepresence," *Journal of communication*, 42 (4), 73–93.

Stilley, Karen M, J Jeffrey Inman, and Kirk L Wakefield (2010), "Planning to Make Unplanned Purchases? The Role of In-Store Slack in Budget Deviation," *Journal of Consumer Research*, 37 (2), 264–78.

Stuart, Elnora W, Terence A Shimp, and Randall W Engle (1987), "Classical Conditioning of Consumer Attitudes: Four Experiments in an Advertising Context," *Journal of Consumer Research*, 14 (3), 334–49.

Sujan, Mita, James R Bettman, and Harish Sujan (1986), "Effects of Consumer Expectations on Information Processing in Selling Encounters," *Journal of Marketing Research*, 23 (4), 346–53.

Sundar, S Shyam and Anthony M Limperos (2013), "Uses and Grats 2.0: New Gratifications for New Media," *Journal of Broadcasting & Electronic Media*, 57 (4), 504–25.

Sussman, Stephanie Watts and Wendy Schneier Siegal (2003), "Informational Influence in Organizations: An Integrated Approach to Knowledge Adoption," *Information Systems Research*, 14 (1), 47–65.

Suzuki, N, K Ishii, and M Okada (1998), "Talking Eye: autonomous creature as accomplice for human," IEEE Comput. Soc, 409–14.

Tadeusiewicz, Ryszard (2010), "Speech in human system interaction," IEEE, 2–13.

Tangari, Andrea Heintz, Scot Burton, and Ronn J Smith (2015), "Now that's a Bright Idea: The Influence of Consumer Elaboration and Distance Perceptions on Sustainable Choices," *Journal of Retailing*, 91 (3), 410–21.

Tannenbaum, Percy H (1967), "The Congruity Principle Revisited: Studies in the Reduction, Induction, and Generalization Of Persuasion," in *Advances in Experimental Social Psychology Volume 3*, Advances in Experimental Social Psychology, Elsevier, 271–320.

Tellis, Gerard J and Gary J Gaeth (1990), "Best value, price-seeking, and price aversion: The impact of information and learning on consumer choices," *Journal of Marketing*, 54 (2), 34–45.

Terlutter, Ralf and Michael L Capella (2013), "The Gamification of Advertising: Analysis and Research Directions of In-Game Advertising, Advergames, and Advertising in Social Network Games," *Journal of Advertising*, 42 (2-3), 95–112.

Thibaut, J and L Walker (1972), *Procedural Justice: A Psychological Analysis*, Hillsdale: Lawrence Erlbaum Associates.

Torn, Fredrik (2012), "Revisiting the Match-Up Hypothesis: Effects of Brand-Incongruent Celebrity Endorsements," *Journal of Current Issues & Research in Advertising*, 33 (1), 20–36.

Trail, G T and J D James (2001), "The motivation scale for sport consumption: Assessment of the scale's psychometric properties," *Journal of Sport Behavior*, 24 (1), 108–27.

Trope, Y, N Liberman, and C Wakslak (2007), "Construal Levels and Psychological Distance: Effects on Representation, Prediction, Evaluation, and Behavior," *Journal of Consumer Psychology*, 17 (2), 83–95.

Trope, Yaacov and Nira Liberman (2010), "Construal-level theory of psychological distance.," *Psychological review*, 117 (2), 440–63.

Trope, Yaacov and Nira Liberman (2012), "Construal level theory," in *Handbook of Theories of Social Psychology*, Handbook of Theories of Social Psychology: Volume 1, SAGE Publications Inc. ER -, 118–34.

Turel, Ofir, Alexander Serenko, and Nick Bontis (2010), "User acceptance of hedonic digital artifacts: A theory of consumption values perspective," *Information & Management*, 47 (1), 53–59.

Turing, A M (1950), “Computing Machinery and Intelligence,” *Mind*, 59 (236), 433–60.
Twitch (2017), “Directory,” *twitch.com*, (accessed November 24, 2017), [available at https://www.twitch.tv/directory].
Uysal, M, L Gahan, and B S Martin (1993), “An examination of event motivations: a case study,” *Festival Management & Event Tourism*, 1 (1), 5–10.
Vallacher, Robin R and Daniel M Wegner (1987), “What do people think they're doing? Action identification and human behavior.,” *Psychological review*, 94 (1), 3–15.
Van Der Heide, Brandon, Benjamin K Johnson, and Mao H Vang (2013), “The effects of product photographs and reputation systems on consumer behavior and product cost on eBay,” *Computers in Human Behavior*, 29 (3), 570–76.
van der Heijden (2004), “User Acceptance of Hedonic Information Systems,” *MIS quarterly*, 28 (4), 695.
van Hilvoorde, Ivo and Niek Pot (2016), “Embodiment and fundamental motor skills in eSports,” *Sport, Ethics and Philosophy*, 10 (1), 14–27.
VanEpps, Eric M, Julie S Downs, and George Loewenstein (2016), “Advance Ordering for Healthier Eating? Field Experiments on the Relationship Between the Meal Order–Consumption Time Delay and Meal Content,” *Journal of Marketing Research*, 53 (3), 369–80.
Venkatesh, Morris, Davis (2003), “User Acceptance of Information Technology: Toward a Unified View,” *MIS quarterly*, 27 (3), 425.
Venkatesh, Thong, Xu (2012), “Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology,” *MIS quarterly*, 36 (1), 157.
Venkatesh, Viswanath (1999), “Creation of Favorable User Perceptions: Exploring the Role of Intrinsic Motivation,” *MIS quarterly*, 23 (2), 239.
Verberckmoes, Shana, Karolien Poels, Nathalie Dens, Laura Herrewijn, and Patrick De Pelsmacker (2016), “When and why is perceived congruity important for in-game advertising in fantasy games?,” *Computers in Human Behavior*, 64 (C), S29–S38.
Voorveld, Hilde A M and Sanne M F Valkenburg (2014), “The Fit Factor: The Role of Fit Between Ads in Understanding Cross-Media Synergy,” *Journal of Advertising*, 44 (3), 185–95.
Voss, Glenn B, A Parasuraman, and Dhruv Grewal (1998), “The Roles of Price, Performance, and Expectations in Determining Satisfaction in Service Exchanges,” *Journal of Marketing*, 62 (4), 46.
Voss, Kevin E, Eric R Spangenberg, and Bianca Grohmann (2003), “Measuring the Hedonic and Utilitarian Dimensions of Consumer Attitude,” *Journal of Marketing Research*, 40 (3), 310–20.
Wakefield, Kirk L (1995), “The pervasive effects of social influence on sporting event attendance,” *Journal of Sport and Social Issues*, 19 (4), 335–51.
Wakslak, Cheryl J, Yaacov Trope, Nira Liberman, and Rotem Alony (2006), “Seeing the forest when entry is unlikely: Probability and the mental representation of events.,” *Journal of Experimental Psychology: General*, 135 (4), 641–53.
Walters, Gabrielle, Beverley Sparks, and Carmel Herington (2007), “The Effectiveness of Print Advertising Stimuli in Evoking Elaborate Consumption Visions for Potential Travelers,” *Journal of Travel Research*, 46 (1), 24–34.

Wang, Rebecca Jen-Hui, Edward C Malthouse, and Lakshman Krishnamurthi (2015), "On the Go: How Mobile Shopping Affects Customer Purchase Behavior," *Journal of Retailing*, 91 (2), 1–18.

Wann, Daniel L (1995), "Preliminary validation of the sport fan motivation scale," *Journal of Sport and Social Issues*, 19 (4), 377–96.

Wann, Daniel L and Nyla R Branscombe (1993), "Sports fans," *International journal of sport psychology*, 24 (1), 1–17.

Warman, Peter (2017), "Esports revenues will reach $696 million this year and grow to $1.5 billion by 2020 as brand investment doubles," (newzoo, ed.).

Wasko, Molly McLure and Samer Faraj (2005), "Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice," *MIS quarterly*, 29 (1), 35–57.

Waytz, Adam, Joy Heafner, and Nicholas Epley (2014), "The mind in the machine: Anthropomorphism increases trust in an autonomous vehicle," *Journal of Experimental Social Psychology*, 52 (C), 113–17.

Weiss, Thomas and Sabrina Schiele (2013), "Virtual worlds in competitive contexts: Analyzing eSports consumer needs," *Electronic Markets*, 23 (4), 307–16.

Weizenbaum, J (1966), "ELIZA—A Computer Program For the Study of Natural Language Communication Between Man and Machine," *Communications of the ACM*, 9 (1), 36–45.

Wenner, Lawrence A (2013), "Reflections on Communication and Sport," *Communication & Sport*, 1 (1-2), 188–99.

Westbrook, Robert A and Michael D Reilly (1983), "Value-percept disparity: an alternative to the disconfirmation of expectations theory of consumer satisfaction," *ACR North American Advances*.

White, K, P W Sheehan, and R Ashton (1977), "Imagery assessment: A survey of self-report measures.," *Journal of Mental Imagery*, 1 (1), 145-69.

White, Katherine, Rhiannon MacDonnell, and Darren W Dahl (2011), "It's the Mind-Set That Matters: The Role of Construal Level and Message Framing in Influencing Consumer Efficacy and Conservation Behaviors," *Journal of Marketing Research*, 48 (3), 472–85.

Williams, Dmitri, Scott Caplan, and Li Xiong (2007), "Can You Hear Me Now? The Impact of Voice in an Online Gaming Community," *Human Communication Research*, 33 (4), 427–49.

Wong, Choy-Har, Garry Wei-Han Tan, Siew-Phaik Loke, and Keng-Boon Ooi (2014), "Mobile TV: a new form of entertainment?," *Industrial Management & Data Systems*, 114 (7), 1050–67.

Wong, Nancy Y (2004), "The role of culture in the perception of service recovery," *Journal of business research*, 57 (9), 957–63.

Woo, Hongjoo and Bharath Ramkumar (2017), "Who seeks a surprise box? Predictors of consumers' use of fashion and beauty subscription-based online services (SOS)," *Journal of Retailing and Consumer Services*, 41, 121–30.

Wu, Chi-Cheng, Ying-Ju Chen, and Yung-Jan Cho (2013), "Nested Network Effects in Online Free Games with Accessory Selling," *Journal of Interactive Marketing*, 27 (3), 158–71.

Xu, Qian and S Shyam Sundar (2012), "Lights, Camera, Music, Interaction! Interactive Persuasion in E-commerce," *Communication Research*, 41 (2), 282–308.

Xu, Xiaoyu (2014), "Understanding Users ' Continued Use of Online Games: An Application of UTAUT2 in Social Network Games," *Proceedings of the MMEDIA The Sixth International Conferences on Advances in Multimedia*, 58–65.

Yang, Fan and Steve Guo (2015), "The moderating effect of imagery ability on perceived vividness: the case of HPV vaccine advertising in China," *Chinese Journal of Communication*, 8 (2), 177–95.

Yang, Shuiqing (2013), "Understanding Undergraduate Students' Adoption of Mobile Learning Model: A Perspective of the Extended UTAUT2," *Journal of Convergence Information Technology*, 8 (10), 969–79.

Yoo, Jungmin and Minjeong Kim (2014), "The effects of online product presentation on consumer responses: A mental imagery perspective," *Journal of business research*, 67 (11), 2464–72.

Yoshida, Masayuki and Jeffrey D James (2010), "Customer Satisfaction with Game and Service Experiences," *Journal of Sport Management*, 24 (3), 338–61.

Young Kim, Eun and Youn Kyung Kim (2004), "Predicting online purchase intentions for clothing products," *European journal of Marketing*, 38 (7), 883–97.

Youtube (2017), "Gaming Channel," *youtube.com*, (accessed November 24, 2017), [available at https://gaming.youtube.com/].

Yu, Eun, Chanyong Jung, Hyungjin Kim, and Jaemin Jung (2018), "Impact of viewer engagement on gift-giving in live video streaming," *Telematics and Informatics*, 35 (5), 1450–60.

Yuping, Liu-Thompkins (2019), "A Decade of Online Advertising Research: What We Learned and What We Need to Know," *Journal of Advertising*, 48 (1), 1–13.

Zaichkowsky, Judith Lynne (1985), "Measuring the Involvement Construct," *Journal of Consumer Research*, 12 (3), 341–52.

Zdravkovic, Srdan and Brian D Till (2015), "Enhancing brand image via sponsorship," *International Journal of Advertising*, 31 (1), 113–32.

Zeithaml, Valarie A (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, 52 (3), 2–22.

Zhang, Jason Q, Georgiana Craciun, and Dongwoo Shin (2010), "When does electronic word-of-mouth matter? A study of consumer product reviews," *Journal of business research*, 63 (12), 1336-41.

Zhang, Yi and Kevin K Byon (2017), "Push and pull factors associated with the CTTSL game events between on-site and online consumers," *International Journal of Sports Marketing and Sponsorship*, 18 (1), 48–69.