ANIKA STUPPY

Essays on Product Quality

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Essays over productkwaliteit

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Anika Stuppy, born in Landstuhl (Germany)

Erasmus University Rotterdam

Doctoral Committee

Doctoral dissertation supervisors:
Prof.dr. S.M.J. Van Osselaer
Dr. N.L. Mead

Other members:
Prof.dr. S. Puntoni
Prof.dr. L. Warlop
Prof.dr. P. Verlegh

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Table of Contents

Chapter 1
Introduction

Product quality lies in the eyes of the beholder. For consumers, for instance, a product's perceived quality is determined by their individual needs and expectations, and the product's perceived ability to satisfy these needs. While perceived product quality is entirely subjective, it is of pivotal interest for producers, marketers, and consumers alike. In part, because quality judgements are central in every stage of the producer to consumer transaction. Producers aim to design and release products that are free of deficiencies and optimally tailored to satisfy consumers' needs and desires (American Society for Quality 2008). Marketers try to promote products in such a way that a product's high quality stands out (Kirmani and Rao 2000). Consumers carefully choose between alternatives to obtain high quality products that satisfy their needs in the most optimal way (Sweeney and Soutar 2001). Given its universal importance and far reaching consequences for product choice and satisfaction, perceived product quality has been the topic of research in marketing, and consumer behavior for decades.

Past research has carved out several definitions, and constituents of perceived product quality, using both producer-centric and consumer-centric approaches. On the producer side, research has explored how producer decision making changes product attributes, and thereby perceived product quality. Producers strive to, and often succeed in, boosting product quality, by, for instance, investing large budgets into production (Basuroy,

Chatterjee, and Ravid 2003), recruiting top talent (Elberse 2007), or using innovate design approaches (e.g., customization, Franke, Keinz, and Steger 2009). On the consumer side, past investigations have mostly examined what leads consumers to perceive product quality to be high or low, and what motives them to choose products that they perceive to be of relatively high or low quality. On the side of consumer perceptions, several product attributes have been identified that shape subjective product quality in consumers' minds. Amongst others, consumers tend to rely on price information, brand image, product esthetics, or country-of-origin information to infer whether a product provides value (Bilkey and Nes 1982; McDanniel and Baker 1977; Rao and Monroe 1989). Research on motivational drivers of product choice suggest that consumers are predominantly motivated to obtain products that they perceive to be high quality, because these products reflect positively upon the self, and may serve to enhance consumers' self-views (Dunning 2007). Consumers are willing to sacrifice product quality only under specific conditions, for instance when they prioritize saving money (Lastovicka et al. 1999), or when a product is unable to boost their self-image (Rucker and Galinsky 2008).

In this dissertation, I extend existing knowledge on the constituents of perceived product quality by taking both a consumer-centric (chapter 2 and 4) and producer-centric (chapter 3) approach. In doing so, I uncover overlooked a) *perceptual drivers* that cause consumers to perceive products as being lower and higher quality (chapter 4), b) *motivational drivers* that lead consumers to choose products of perceived lower and higher quality (chapter 2), and c) *features of the production process* that cause producers

to develop and release products of perceived lower and higher quality (chapter 3).

This investigation not only challenges several assumptions about the structural and psychological features that shape the desire for, and perception of value in the marketplace, it also contributes to a better understanding of several puzzling real-world phenomena. Chapter 2 elucidates why consumers sometimes gravitate towards product options that they perceive to be of lower quality than alternative products, even though these inferior options do not come at a cheaper price. Chapter 3 examines why the motion-picture industry is so likely to release movies that are perceived to be unenjoyable, despite considerable amounts of time, resources, and talent invested. Chapter 4 elucidates why having expertise in a product category can lower consumers' enjoyment of products of a certain quality, although consumers generally strive to become more knowledgeable and experienced with products.

Chapter 2 challenges the notion that people are predominantly motivated to use superior, high quality products to enhance their self-views and feel good about themselves. We argue that, in addition to the need to bolster their self-views, people also have the need to confirm their self-views (i.e., self-verification). Although the self-verification motive provides important self-related benefits, scant attention has been devoted to understanding its role in consumer behavior. Chapter 2 resolves that gap by examining a dispositional variable–trait self-esteem–that helps predict whether consumers pursue self-verification or self-enhancement. We propose that low self-esteem consumers' relatively negative self-views foster a tendency to self-verify by choosing lower-quality products.

Consumers with high self-esteem, in contrast, tend to be motivated to self-enhance and prefer products that can serve that motive. Four studies supported those predictions: participants with low (vs. high) self-esteem were more inclined toward lower-quality products, but only when those products signaled negative self-views. Further, low self-esteem consumers' propensity to choose lower-quality products was evident after they received negative feedback but disappeared after they were induced to believe that superior products were typical of them. Across all our studies, we rule out that consumers with low self-esteem were more inclined towards lower quality products out of a desire to save money. By pinpointing personality and situational factors that determine when self-verification guides consumer behavior, this work enriches the field's understanding of how inferior (lower quality) and superior (higher quality) products serve self-related motives.

Chapter 3 examines how structural features of the entertainment product development process shape perceived product quality. The entertainment product development process typically involves creating considerable amounts of content during production and then cutting low-quality elements (e.g., boring scenes, dull prose, bad subplots) in post-production. By reducing the number of low-quality elements in the final product, producers aim to maximize the product's final perceived quality. In this case, whether the product is perceived to be enjoyable or not. My coauthors and I uncover that maximizing entertainment experiences is not the only goal of post-production editing. In some cases, entertainment producers are bound by a length constraint, as occurs for comedy specials, short story competitions, and major motion pictures. Industry length

constraints (e.g., 22-minute sitcoms; one-hour comedy specials) can cause producers to alter editing decisions and thus jeopardize product quality. Producers need to keep some bad content when the amount of good content falls short of a minimum length. Conversely, producers need to cut some good content when the amount of good content exceeds a maximum length. Because consumers are more sensitive to the presence of bad than the absence of good, we find that keeping bad content (due to a minimum constraint) diminishes perceived quality more than cutting good content (due to a maximum constraint). As a real-world case study, we propose that a 90-minute minimum length constraint required by studios hurts some Hollywood movies. Filmmakers who lack enough good scenes to reach a 90-minute running time cannot cut some bad scenes, which causes an overrepresentation of short bad movies.

Chapter 4 extends existing knowledge on the perceptual drivers of subjective product quality. While past investigations have extensively examined how product cues drive quality judgments, our investigation takes a relatively more consumer-focused approach. Specifically, we examine how consumers derive product expertise (e.g.., become art-savvy) by accumulating experiences in a product domain (e.g., sampling artistic products). We also examine how having versus lacking these past experiences shapes consumers' enjoyment of products of different hedonic value. We propose that accumulating experiences in a product domain makes consumers more attuned to the hedonic value of experiences. As they gain experience, their enjoyment of less and more enjoyable experiences starts to differ more strongly. Importantly, being value sensitive is not universally positive for consumers. While experienced

consumers savor products of high hedonic value more ("blessing of expertise"), they are no longer able to enjoy mundane experiences ("curse of expertise") as compared to less experienced consumers.

Besides detailing effects on enjoyment, chapter 4 also examines through which process accumulating experiences creates sensitivity to hedonic value. Multiple potential processes are considered: comparison to the average experience, ranking of experiences, hedonic contrast to dissimilar past experience, and hedonic assimilation to similar past experiences. Our evidence shows that experienced consumers are more sensitive to hedonic value than less experienced consumers because they assimilated present enjoyment to similar past experiences. Consistent with this notion, we find that it is the range of past experiences that predicts sensitivity for hedonic value but not the sheer number, or average hedonic value of the past experiences. Our results raise doubts about the possibility that experienced consumers are more sensitive to hedonic value because they contrast enjoyment away from dissimilar experiences, compute the relative rank of the new experience, or compare the new experience to an average. Finally, we show that consumers are more sensitive to hedonic value only after, but not before, they had accumulated similar past experiences. By elucidating how consumers draw on past experiences to gauge enjoyment in the present, this inquiry sheds more light on the drivers of expertise and enjoyment for experimental products.

Declaration of Contribution

The research presented in chapter 2 was with Nicole L. Mead and Stijn M. J. van Osselaer and is currently being revised for the 3rd review round. The research presented in chapter 3 was with A. Peter McGraw and Justin Pomerance. The research presented in chapter 4 was with Bram van den Bergh.

Chapter 1. I wrote this chapter and implemented feedback from my promoter (Stijn M. J. van Osselaer).

Chapter 2. I formulated the research question in cooperation with my co-authors (Nicole L. Mead and Stijn M. J. van Osselaer), performed the literature review, designed the studies, collected and analyzed the data, and wrote the manuscript. My co-authors provided feedback at each stage of the process.

Chapter 3. I formulated the research question in cooperation with my co-authors (A. Peter McGraw and Justin Pomerance), designed study 1 and analyzed the data, I also analyzed the data of all remaining studies and wrote the manuscript in cooperation with my co-authors (A. Peter McGraw and Justin Pomerance).

Chapter 4. I formulated the research question, performed the literature review, designed the studies, collected and analyzed the data, and wrote the manuscript. My co-author provided feedback at each stage of the process (Bram van den Bergh).

Chapter 5. I wrote this chapter and implemented my promoter's feedback.

Chapter 2
I Am, Therefore I Buy: Low Self-Esteem and the Pursuit of Self-Verifying Consumption

Background and Overview

People strive to feel good about themselves (Allport 1937; Sedikides 1993). Attractive products and pleasurable experiences serve this desire to self-enhance by distracting people from threats, bolstering self-views, and signaling desirable qualities to the self and others (Braun and Wicklund 1989; Gao, Wheeler, and Shiv 2009; Kim and Rucker 2012).

Yet, consumers' actual product choices call into question the predominance of using consumption to self-enhance. Today's hyper-competitive marketplace continues to provide products that arguably signal unfavorable information about the consumers who choose them. For instance, although store brands often compromise on quality and brand image (Bellizzi et al. 1981; Richardson 1997), they accounted for 20% of in-store sales in 2016 (Private Label Manufacturers Association 2016). Economizing is one clear explanation for why consumers sometimes sacrifice quality (Lastovicka et al. 1999). However, there may be other reasons.

In this work, we propose that choosing inferior products may sometimes stem from the basic motivation to confirm chronic self-views– in this case, negative self-views. Decades of research have established that

acting in a way that is aligned with core self-views provides important benefits such as feeling that the world is safe, comfortable, and predictable (Festinger 1957; Heider 1946; Robinson and Smith-Lovin 1992; Swann and Read 1981a, 1981b; Swann et al. 1987; Swann, Stein-Seroussi, and Giesler 1992). Because consumers with stable, pessimistic self-views (i.e., low self-esteem) construe their environment as threatening and fear further blows to their self-esteem (Baumeister, Tice, and Hutton 1989; Leary, Cottrell, and Phillips 2001; Tice 1991), and because acting consistently with one's self-views can provide feelings of safety, predictability, and self-protection, we expected that low self-esteem consumers would show a tendency to self-verify. In other words, when given the option between relatively superior products that are not harmonious with core self-views and relatively inferior products that are consistent with core self-views, we expected that those with low (vs. high) self-esteem would be more inclined toward inferior products.

In contrast to consumers with low self-esteem, consumers with high self-esteem perceive their environment in an optimistic fashion and confidently believe that they will achieve positive outcomes for themselves (Bandura 1989; Brockner 1979; McFarlin and Blascovich 1981; for a review, see Blaine and Crocker 1993). Individuals with high self-esteem, for instance, predict that they will be more popular and successful in life than most others (Brown 1986). Because holding positive self-views is pleasurable, and because people with high self-esteem are confident that they can live up to those positive self-views (Taylor and Brown 1988), self-enhancement entails few costs but many benefits for these individuals. To satisfy the hedonic motive of seeing oneself as successful, competent, and

likable, high (vs. low) self-esteem consumers should be more inclined to choose superior over inferior products.

To test the notion that, relative to consumers with high self-esteem, consumers with low self-esteem are more inclined towards inferior products because they pursue self-verification, we examined boundary conditions implied by the logic of our hypothesis. First, the ability of products to serve self-related motives is contingent upon their signal value. Thus, low self-esteem consumers' preference for an objectively low-end product should be dampened when that product signals positive instead of negative self-views. Second, if consumers with low self-esteem prefer inferior products because those products are perceived to be characteristic of the self, then inducing (vs. not inducing) low self-esteem consumers to perceive superior products (e.g., alcohol) as typical of themselves should boost their inclination towards choosing superior products. Moreover, that pattern should be evident only for the manipulated product category (i.e., alcohol products). In unrelated product categories (e.g., clothing), low (vs. high) self-esteem consumers should continue to show a higher preference for inferior products.

By identifying personality and situational factors that elucidate the role of self-verification in the shaping of product choice, our research helps provide a more nuanced understanding of how self-motives guide consumer choice. That is, in addition to consumers using pleasant products to ameliorate self-views, specific consumers, under specific circumstances, use inferior products to confirm self-views.

The Benefits of Self-Verification and Self-Enhancement

People's actions are a reflection of their self-views, but people's actions can also serve to manage and change their self-views (Swann, Chang-Schneider, and Larsen McClarty 2007). Both patterns can be explained by two basic motivations: the desire to enhance the self, and the desire to verify the self.

The self-enhancement motive entails the desire to improve the positivity of one's self-views. People self-enhance because achieving gains in their self-views is pleasurable (for a review, see Taylor and Brown 1988). Holding inflated, rather than realistic, views about one's intelligence, for instance, has been linked to greater happiness and improved well-being (Robins and Beer 2001). Yet, the desire to nurture positive self-views is only one of two self-related motives. People also want to confirm existing self-views, even when those self-views are negative (Aronson 1969; Kwang and Swann, 2010; Lecky 1945; Secord and Backman 1964; Swann 1983, 1990).

People form, hold, and maintain self-views to make sense of themselves and the world around them. Acting in a way that is consistent with one's self-views, even when those self-views are negative, confers important benefits. First, acting consistently with one's self-views provides a sense of coherence and comfort whereas acting inconsistently with one's self-views creates a sense of psychological tension and discomfort (Festinger 1957; Heider 1946). Second, confirming self-views generates a sense of stability and order, which makes people feel as though they live in a safe and predictable world (Robinson and Smith-Lovin 1992; Swann et al.

1987; Swann et al. 1992; Swann et al. 2007; Swann and Read 1981a, 1981b). Third, acting in line with one's self-views helps to protect the self from further drops in self-esteem (Baumeister et al. 1989). By acting in accordance with their core self-views, people set realistic expectations about future outcomes for themselves and others. In this way, people avoid creating overly positive expectations that they could eventually disappoint.

Even though self-verification and self-enhancement are both basic motives that guide everyday behavior, the lion's share of past work in consumer behavior has focused on the role of self-enhancement. For example, participants who felt negative emotions self-gifted to induce positive emotions (Mick and DeMoss 1990); participants who were assigned to a position of low power chose products that helped to restore their lost status (Rucker and Galinsky 2008); participants whose intellectual ability was cast in doubt chose competence-affirming products such as fountain pens and intellectual magazines (Gao et al. 2009). Indeed, it has been concluded that consumers use products to help restore threatened positive self-views (for a review, see: Mandel et al. 2016).

In contrast, few investigations have examined whether consumers desire products that confirm pre-existing self-views. Indirect support comes from studies which found that consumers perceived overlap between their own personality and the personality of their car or favorite brands (Birdwell 1968; Dolich 1969; Malär et al. 2011). However, because those studies were correlational, it is equally possible that consumers began to perceive their products as extensions of themselves only after having purchased them (Kassarjian 1971). Hence, existing evidence for self-verifying choices in the marketplace is inconclusive.

We sought to redress this gap in the literature by examining a dispositional variable—trait self-esteem—that elicits the self-verification motive. As we detail in the following section, we posit that consumers with low (vs. high) self-esteem are more inclined to self-verify because the potential benefits of self-verification (psychological comfort, predictability, and self-protection) are particularly substantial and the potential costs of self-enhancement (failure, disappointment, and further drops in self-esteem) weigh particularly heavily.

The Needs and Self-Related Motives of Consumers with Low and High Trait Self-Esteem

An extensive body of literature suggests that self-views serve as guiding lenses for making sense of and navigating the world (Cooley 1902; Lecky 1945; Mead 1934). The positive self-views of individuals with relatively high self-esteem foster expectations of future superiority, success, and acceptance (Miner 1992). People with high self-esteem typically view themselves and their environment in an optimistic fashion and confidently predict positive outcomes for themselves. In contrast, the relatively negative self-views of individuals with low self-esteem foster expectations of future inferiority, failure, and rejection. They expect to perform poorly (Dandeneau and Baldwin 2004) and be rejected by others (Denissen et al. 2008; Leary and MacDonald 2003). The very different self-views of those with low and high self-esteem give rise to distinct needs and therefore strategies to satisfy those needs.

People with low self-esteem self-verify

People with low self-esteem tend to doubt that they are likable and capable (Gabriel, Critelli, and Ee 1994; Murray et al. 2002). They perceive the world as somewhat hostile and chronically fear that they will not live up to their own and others' expectations (Anthony, Wood, and Holmes 2007; McFarlin, Baumeister, and Blascovich 1984; Murray, Holmes, and Griffin 2000). Because people with low self-esteem exist in an environment that, subjectively, disapproves of them, one might expect that they have a strong need to feel better about themselves. However, research suggests that their insecurities and self-doubt cause them to be reluctant to improve their self-views, particularly after threat (Alloy and Abramson 1979; Brown 1986; Dodgson and Wood 1998; Shrauger 1975; Swann et al. 1987). Indeed, a meta-analysis of 103 studies concluded that people with low (vs. high) self-esteem were much less likely to engage in compensatory behaviors in the wake of psychological threats (vanDellen et al. 2011). Moreover, during the relatively few times that those with low self-esteem did compensate, the extent of compensation was milder than among those with high self-esteem.

In contrast to self-enhancement, self-verification may help consumers with low self-esteem navigate their subjectively hostile world. First, acting in accordance with one's self-views creates a soothing sense of consistency and coherence whereas acting inconsistently with one's self-views would create a sense of psychological tension and discomfort (Ayduk et al. 2013; Festinger 1957; Heider 1946). For example, when participants with low self-esteem experienced or merely thought about positive life events that were inconsistent with their self-views (e.g., getting promoted or

falling in love), people with low (but not high) self-esteem became anxious and stressed (Brown and McGill 1989; Kille et al. 2017; Wood et al. 2005). By dwelling on the negative aspects of those "positive" events, people with low self-esteem were able to restore their usual understanding of themselves and their place in the world.

Second, acting in a way that is consistent with one's self-views helps satisfy people's need to see the world as orderly and predictable (Swann 1990; Swann, Chang-Schneider, and Angulo 2008). Indirect evidence for this claim comes from work on the functional benefits of self-verification. Participants with low (but not high) self-esteem thought that interactions with partners who saw them as they saw themselves, as compared to more favorably, would be easier and smoother because they better knew what to expect (Swann et al. 1992). In romantic relationships, people with low self-esteem who chose self-verifying, rather than non-self-verifying spouses also had more stable and happier marriages (De La Ronde and Swann 1998; Murray et al.2000; Ritts and Stein 1995; Schafer, Wickrama, and Keith, 1996; Swann, De La Ronde, and Hixon 1994). Ostensibly, this is because order and predictability foster intimacy in close relationships (Rempel, Holmes, and Zanna 1985).

Third, self-verification may protect an individual's level of self-esteem against (further) decreases, which is more of a concern among those with low (vs. high) self-esteem (Baumeister et al. 1989). To avoid encountering additional failure, rejection, or humiliation, people with low self-esteem tend to shun unfamiliar behaviors, people, and situations that are not aligned with how they see themselves. For example, relative to those with high self-esteem, participants with low self-esteem tended to

avoid interaction partners who saw them in an unfamiliar, positive light, rather than in a familiar, pessimistic light (Swann et al. 1992; Swann and Pelham 2002), ostensibly because the former felt risky and threatening whereas the latter felt safe. Similarly, when making new acquaintances, low self-esteem individuals presented themselves humbly, rather than overly positive, to avoid disappointing expectations and being rejected (Schutz and DePaulo 1996; Schutz and Tice 1997; Tice 1991). Taken together, previous research suggests that, even though they will continue to feel inferior to others, low self-esteem people might benefit from self-verification because it provides a sense of coherence, predictability, and safety.

Self-enhancement, in contrast, may be a risky and costly strategy for individuals who chronically doubt themselves. First, acting in a way that is beyond how one sees oneself can be aversive because it can create a worrisome sense of unpredictability (Swann et al. 1992). As mentioned, low self-esteem people feel anxious and stressed when thinking about positive life events (Wood et al. 2005). Second, self-enhancement would challenge people with usually low self-views to live up to the heightened expectations that more positive self-views entail. Because low self-esteem people doubt whether they can improve themselves (Chen, Gully, and Eden 2004), self-enhancement might feel risky to them because they believe they will fail. For example, after an initial success, participants with low (but not high) self-esteem lowered others' expectations of their future performance (Marececk and Mettee 1972; Schlenker, Weingold, and Hallam 1990), seemingly as a way to help ensure they would not eventually disappoint others' expectations. In summary, because self-verification helps to satisfy

the distinct needs of individuals with low self-esteem, we expected that consumers with low self-esteem would gravitate toward self-verification.

People with high self-esteem self-enhance

Individuals with high self-esteem believe they are more or at least equally competent and likeable as others (Sinha and Krueger 1988). Unlike those with low self-esteem, they do not chronically doubt whether they meet their own or others' expectations. People with high self-esteem expect to be able to fulfill, or even exceed, those expectations. Because achieving gains for their self-views is pleasurable, and because high self-esteem people are confident that they will succeed in achieving these gains (Chen et al. 2004), self-enhancement entails few costs but many benefits for these individuals. In this way, consumers with high self-esteem may pursue the hedonic quest of seeing themselves as even more competent, likable, and successful.

Much research has demonstrated that individuals with high self-esteem pursue self-enhancement. People with high self-esteem create a self-enhancing public self-image to garner the attention and admiration of others (Baumeister et al. 1989), derogate those who do not see them as positively as they see themselves (Baumeister, Smart, and Boden 1996), and prefer to interact with those who see them in a very positive light (Rudich and Vallacher 1999). High self-esteem people are also adept at processing information in a way that enhances the positivity of their self-views (for a review, see Taylor and Brown 1988). For instance, they overestimate their performance when outperformed by others, and take more credit for their group's success than would be justified (Crary 1966; Schlenker, Soraci, and

McCarthy 1976). Moreover, they are quick to forget, downplay, or overlook negative feedback and emotions (Wood, Heimpel, and Michela 2003). In sum, because self-enhancement involves hedonic benefits for those with high self-esteem, but relatively few costs, we expected that consumers with high (vs. low) self-esteem would be more inclined to engage in self-enhancement.

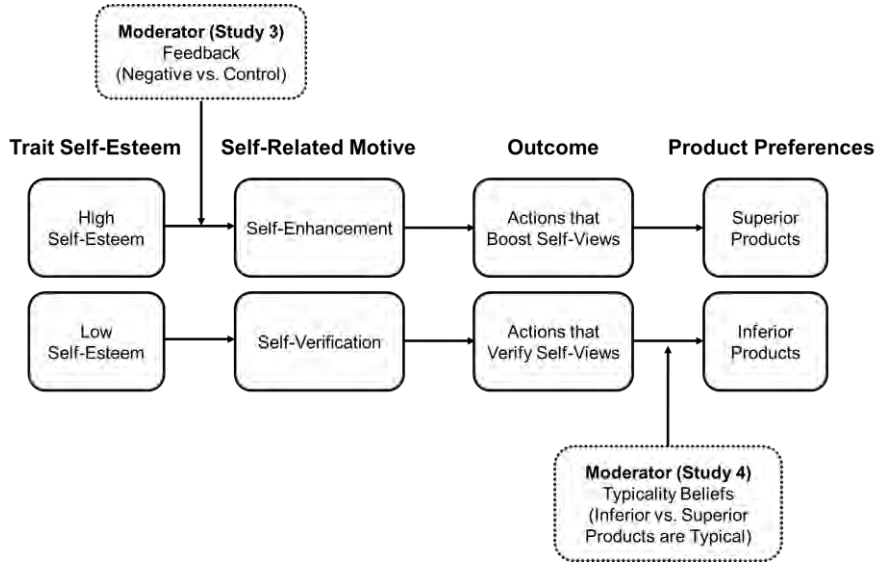
Inferior versus Superior Products

Prior research indicates that making choices activates the self and self-related processes (Fishbein and Ajzen 1975), and thereby self-esteem and motives associated with self-esteem. When faced with product choices, consumers integrate various product cues such as brand, esthetics, or country of origin to determine which of two products is superior (Dawar and Parker 199; Rao and Monroe 1989; Zeithaml 1988). The theory that consumers with low self-esteem are motivated to act in ways that are aligned with their pessimistic self-views led us to predict that consumers with low (vs. high) self-esteem might be more likely to gravitate toward "second-rate" product alternatives because those products could signal pessimistic self-views. The theory that consumers with high self-esteem are motivated to act in ways that lift their self-views led us to predict that consumers with high (vs. low) self-esteem might be more likely to gravitate toward premium or first-rate product alternatives because those products could signal positive self-views.

To test those hypotheses, we examined preference for (or choice of) relatively "inferior" versus relatively "superior" versions of the same

product (e.g., basic alcohol products vs. premium alcohol products) across a range of product categories. Prior research confirmed that those product categories (e.g., beverages, clothing, automobiles, restaurants) signal information about the self and serve self-related motives and identity processes (Belk 1988; Berger and Heath 2007; Dubois, Rucker and Galinksy 2012; Guendelman et al. 2011). For the purposes of this work, we define inferiority as the perception that a product alternative is significantly lower quality, lower status, or less esthetically pleasing than another product alternative. Two validation studies confirmed that the inferior product versions used in the reported studies were perceived as inferior on the dimension of interest (e.g., quality, status, or esthetics; see appendix).

Figure 1: Conceptual model



Boundary Conditions

We predicted that consumers with low (vs. high) self-esteem are more inclined to self-verify whereas consumers with high (vs. low) self-esteem are more inclined to self-enhance. To test those core hypotheses, boundary conditions implied by the self-verification and self-enhancement motives were examined. Figure 1 summarizes the conceptual model and how the boundary conditions elicit the self-verification and self-enhancement motives.

Signaling value. Our theory rests on the notion that consumers use products to build or maintain their self-concepts (Belk 1988; Escalas and Bettman 2003, 2005). If consumers pursue self-related motives in the marketplace, they should be sensitive to the product's symbolic value (Berger and Heath 2008). Relatively inferior products should appeal to consumers with low self-esteem because the product's signal (e.g., lower quality) is aligned with those people's negative self-views. In contrast, superior products should appeal to consumers with relatively high self-esteem because the product's signal (e.g., higher quality) can serve to enhance self-views.

We elicited the role of signal value by manipulating whether an objectively inferior product signaled positive or negative self-views while holding its objective inferiority constant. If an objectively inferior product is associated with a "cool" group of consumers, it loses its original signal—negative self-views—to become a product that signals positive self-views. If consumers with low self-esteem are motivated to confirm self-views, they should prefer the inferior product more when it signals negative rather

than positive self-views. If consumers with high self-esteem are motivated to enhance self-views, that effect should flip. They should prefer the product more when it signals positive rather than negative self-views.

Self-related feedback. If low and high self-esteem people pursue different self-related motives, then they should respond differently to negative self-related feedback. More specifically, negative self-related feedback (e.g., being relegated to a subordinate role in a group task) should be inconsistent with the chronic positive self-views of those with high self-esteem but consistent with the chronic negative views of those with low self-esteem. If low self-esteem people choose products consistent with their self-views, they should choose inferior products equally in the wake of negative feedback and no feedback given that self-views are relatively negative in both cases. In contrast, failure outcomes threaten the superiority expectations of high self-esteem people (Baumeister 1982; Baumeister et al. 1996), which tends to strengthen the need to restore positive self-views (Mandel et al. 2016). Hence, if high self-esteem people pursue self-enhancement, threatening feedback should strengthen their inclination towards products that symbolize success and superiority. In sum, we would expect that whereas high self-esteem consumers show a compensatory consumption effect in response to a power-related identity threat, low self-esteem consumers do not.

Promoting the belief that superior products are typical. If the theory that low self-esteem consumers choose products that they see as characteristic and typical of themselves is correct, then inducing perceptions that superior products are characteristic of the self should

mitigate higher choice of inferior products among low versus high self-esteem consumers. Put differently, when they are led to believe that they typically choose superior products in a specific category, low self-esteem consumers may be more willing to select superior products in that category than they would otherwise. The self-enhancement theory suggests that typicality beliefs should not affect the product choices of those with high self-esteem people; they should choose superior, self-enhancing products regardless of experimental condition.

Overview of Studies

Four studies tested the theory that low and high self-esteem consumers tend to pursue different self-related motives in the marketplace. We hypothesized that the motive to self-verify tends to guide the product preferences of consumers with relatively low self-esteem whereas the motive to self-enhance tends to guide the product preferences of consumers with relatively high self-esteem.

Study 1 examined participants' preference for inferior versus superior alcohol products. If consumers with low self-esteem self-verify, then we should observe a negative relationship between trait self-esteem and preference for inferior alcohol. Study 2 varied whether patronizing an objectively inferior (low-quality, dingy looking) Chinese restaurant signaled negative or positive self-views by varying whether it was frequented by a non-cool versus cool customer base, respectively. We expected that participants with relatively low self-esteem would prefer the restaurant that signaled negative self-views over the restaurant that signaled

positive self-views, and that that effect would flip among those with relatively high self-esteem.

Study 3 tested the hypothesis that participants with relatively low self-esteem are motivated to self-verify rather than self-enhance by administering negative self-related feedback. In study 3, we assigned participants to a subordinate (vs. equal-control) role in a group task. If participants with low trait self-esteem self-verify, then they should show a greater preference (relative to their high self-esteem counterparts) for inferior products in both the equal-control and low-power conditions. In contrast, if those with high trait self-esteem self-enhance, then their inclination toward superior products should be exacerbated in the low-power (vs. equal-control) condition given that ego threats amplify the need to self-enhance among those with high self-esteem (Baumeister 1982; Baumeister et al. 1996; vanDellen et al. 2011).

Study 4 provided a direct test of our hypothesis by manipulating whether participants believed that they typically consumed inferior or superior products in a specific product category–namely, alcoholic beverages. When low self-esteem people are induced to believe that superior alcohol is characteristic of them, then choosing superior alcohol is self-verifying. Thus, we predicted that participants with low self-esteem would be more likely to choose superior alcohol when cued to believe that superior alcohol is characteristic of themselves (vs. baseline preferences). As additional support for the self-verification mechanism, we assessed product preferences in a separate product category (i.e., clothing). Because induced superiority beliefs were specific to alcohol, they should not have carryover effects to an unrelated product domain. In other words, in a non-

manipulated domain, participants with low self-esteem should revert to showing a higher preference for inferior products as compared to participants with high self-esteem. In contrast, we expected that high self-esteem participants would gravitate towards superior alcohol (or clothing) independent of experimental condition. Finally, if alcohol choice was guided by self-verification among low self-esteem participants but self-enhancement among high self-esteem participants, then typicality perceptions should mediate the alcohol-choice pattern among low self-esteem participants but not high self-esteem participants.

We report how we determined our sample sizes, all data exclusions (if any), all manipulations, all conditions, and all measures in the study. Data were analyzed upon termination of data collection.

Study 1

We hypothesized that consumers with low trait self-esteem tend to pursue self-verification in the marketplace while consumers with high trait self-esteem tend to pursue self-enhancement. We therefore predicted that, all else being equal, consumers with low self-esteem would display a greater preference for inferior products than consumers with high self-esteem. To test that hypothesis, we measured trait self-esteem and assessed relative preference for relatively inferior (lower-quality) versus superior (higher-quality) alcoholic beverages. We predicted that trait self-esteem would be negatively associated with relative preference for inferior alcoholic beverages.

To ensure that relative preference for inferior products among low self-esteem participants was not due to the activation of negative self-views by the completion of the self-esteem measure, we varied whether self-esteem was measured before versus after the product-choice task. If consumers with low self-esteem are routinely motivated to self-verify, the predicted negative association between trait self-esteem and preference for inferior alcoholic beverages should emerge independent of the timing of self-esteem measurement.

Study 1 assessed the alternative explanation of frugality. Consumers with low self-esteem may gravitate toward inferior alcohol products out of a desire to save money rather than out of a desire to verify self-views. We controlled for frugality to evaluate this alternative explanation.

Design and procedure

Our hypotheses depend on the assumption that choosing products serves self-related motives. Because alcohol is not part of abstinent consumers' self-definitions, choosing specific alcoholic beverages may not convey information about their self (for a review see: Reed et al. 2012). As such, we a priori decided to prevent abstainers from completing the study by redirecting them to a different survey. The prospective effect size was unknown but, as a rule of thumb, about 100 participants are needed to reliably detect a medium-sized effect (Cohen 1988). To detect potentially smaller effects, and to provide a fair test of the possibility that timing of measurement moderates our core effect (we did not think it would), we boosted our power by recruiting 350 Mechanical Turk (MTurk) participants.

Participants first indicated whether they were abstinent on a binary measure ("I never drink alcohol" vs. "I drink alcohol"). Sixty-three abstinent participants were redirected to a different survey, leaving 289 non-abstinent participants (173 females; M_{age} = 35.88, SD_{age} = 11.82). The tasks in this and all future studies were framed as unrelated to minimize the likelihood that demand characteristics would influence the results.

Participants completed the widely used Rosenberg (1965) trait self-esteem scale. This 10-item scale assesses general feelings about the self without reference to any specific quality or attribute (e.g., "I take a positive attitude towards myself"; "On the whole, I am satisfied with myself.") using 4-point Likert scales (1 = Strongly disagree to 4 = Strongly agree). We reverse coded negatively worded items and averaged the ten items to create an index of trait self-esteem (α = .91, M = 3.06, SD = .60).

Participants were randomly assigned to complete the Rosenberg self-esteem scale either before or after the alcohol preference task. Participants were presented with six alcohol product pairs (appendix). Each pair contained pictures of two alcoholic beverages. A validation study (appendix) confirmed that for each pair one of the products was relatively inferior (lower-quality) and one was relatively superior (higher-quality). To illustrate, one product pair consisted of vodka in a plastic bottle for $6 (Skol) and vodka in a glass bottle for $25 (Reyka). Presentation order was randomized. For each pair, participants indicated which product they would choose for themselves (e.g., 1 = Skol vodka to 7 = Reyka vodka). We counterbalanced whether the inferior alcohol product was displayed on the left or right side of the screen and scale.

We averaged the ratings across the six product pairs to form an index of relative preference for inferior alcohol. Higher values indicated a greater relative preference for inferior alcohol ($\alpha = .75$, $M = 3.11$, SD = 1.27). As a last step, trait frugality was measured with four items (e.g., "I believe in being careful in how I spend my money"; 1 = Strongly disagree to 5 = Strongly agree; Kasser 2005; $\alpha = .88$, $M = 4.11$, $SD = 0.74$).

Results and discussion

We predicted that self-esteem would be negatively associated with preference for inferior alcohol products regardless of timing of measurement. To test those hypotheses, we regressed the inferior-alcohol index on self-esteem (centered), the effect-coded timing condition (before vs. after), and their interaction. As predicted, we detected the hypothesized negative association between self-esteem and preference for inferior alcohol ($\beta = -.182$, $t(285) = -3.11$, $p = .002$, partial $r = -.181$). Consistent with expectations, this relationship was not modified by time of measurement ($\beta = -.005$, $t(285) = -0.09$, $p = .926$, partial $r = -.005$) and there was no main effect for timing ($\beta = -.058$, $t(285) = -0.99$, $p = .322$, partial $r = -.059$).

Next, we examined the frugality alternative explanation. Regressing the inferior alcohol index on self-esteem and frugality revealed that self-esteem was a robust negative predictor ($\beta = -.209$, $t(286) = -3.51$, $p < .001$, partial $r = -.203$) whereas frugality was unrelated to preference for inferior alcohol ($\beta = .085$, $t(286) = 1.42$, $p = .156$, partial $r = .084$).

Results of study 1 supported the hypothesis that consumers with low self-esteem gravitate toward products that confirm rather than enhance their

self-views. The lower their chronic self-views, the more they preferred inferior alcohol products. The possibility that frugality explained the relationship between trait self-esteem and inferior-alcohol preference was not supported. Lastly, participants with low self-esteem were inclined toward inferior alcohol products regardless of whether their preferences were assessed before or after self-esteem was measured.

Study 2

Products acquire symbolic value for the self through their association with the groups or "types" of individuals that consume them (Berger and Heath 2007; Escalas and Bettman 2003). We held the quality of a dingy Chinese restaurant constant but varied whether its customer base was "cool" or "non-cool". In this way, we manipulated whether going to the dingy restaurant signaled positive (i.e., being cool) or negative (i.e., not being cool) self-views. A validation study confirmed that our manipulation changed perceptions of the restaurant's coolness without altering perceptions of food quality (appendix).

The framing of the restaurant was expected to moderate the association between self-esteem and willingness to go the restaurant. If participants with low self-esteem pursue self-verification, they should prefer to patronize the non-cool (vs. cool) restaurant because it is consistent with their self-views. In contrast, if participants with high self-esteem pursue self-enhancement, they should prefer to patronize the cool (vs. non-cool) restaurant because it allows them to enhance their self-views. Moreover, when the restaurant signaled negative self-views, we expected to

conceptually replicate the negative association between self-esteem and product preference from study 1. In contrast, when the restaurant signaled positive self-views, we expected that the relationship would be reversed.

Design and procedure

Study 2 measured self-esteem while manipulating within-subjects whether the restaurant signaled negative or positive self-views. We thus aimed to collect 300 participants to provide enough power to detect small to medium sized effects and a potential interaction (Cohen 1988). We presented 302 MTurkers (157 females; M_{age} = 36.29, SD_{age} = 12.65) with two branches of a Chinese restaurant chain. Because the restaurants were part of a small franchise, both restaurants offered the same menu and prices. The average price per dish was $7. The restaurants were ostensibly located two blocks away from each other. The descriptions of the two restaurant branches were presented side-by-side. The description of each restaurant contained two pictures of the restaurant's dingy interior and exterior. The non-cool restaurant was described as being located opposite a secondhand office furniture store and attracting walk-in customers. The cool restaurant was described as being opposite an art school and attracting hip people like art students and young professionals. A validation study confirmed that this manipulation successfully altered perceptions of "coolness" without altering impressions of the restaurant's objective quality (appendix).

Participants indicated their willingness to patronize each restaurant branch on 100-point scales, with higher values indicating a greater willingness to go to the restaurant (M_{cool} = 63.14, SD = 25.92; $M_{non\text{-}cool}$ =

60.76, SD = 26.01). We counterbalanced the pictures and street addresses of the non-cool and cool restaurant and whether the non-cool restaurant was presented on the left or right side of the computer screen (appendix). After indicating their willingness to go to each restaurant branch, the participants completed the Rosenberg self-esteem scale (described in study 1; $\alpha = .92$, $M = 3.05$, SD = 0.59).

Results and discussion

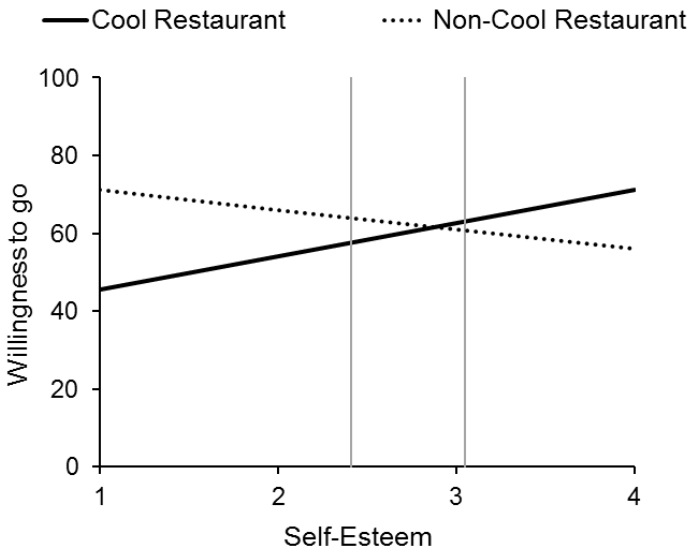
We predicted that restaurant framing would moderate the relationship between self-esteem and willingness to patronize the restaurant. We expected that low self-esteem participants would be more willing to go to the non-cool (vs. cool) restaurant. In contrast, high self-esteem people were expected to be more willing to go to the cool (vs. non-cool) restaurant. To test these predictions, we conducted a repeated measures regression, in which we regressed willingness to go to the restaurant on the predictors self-esteem (centered), the effect coded framing condition (non-cool vs. cool; within-subjects), and their interaction. The model revealed the predicted interaction between self-esteem and framing condition on willingness to visit the restaurant (*Exp(b)* = -6.865, $t(300) = -3.42$, $p = .001$). We did not detect a significant association between self-esteem and willingness to go to the restaurant (*Exp(b)* = 1.770, $t(300) = 1.16$, $p = .249$). There was no main effect of framing condition (*Exp(b)* = -1.192, $t(300) = 1.02$, $p = .310$).

We dissected the interaction by identifying the regions of the self-esteem distribution beyond which restaurant framing had an effect on willingness to go (figure 2; Hayes and Matthes 2009; Johnson and Neyman

1936). At the lower-end of the distribution, participants with self-esteem scores at or below 2.41 (-.65 SD; 14.2% of the sample), indicated a higher willingness to visit the non-cool than the cool restaurant. At the top-end of the distribution, participants with self-esteem values at or above 3.06 (+0.01 SD; 56% of the sample) indicated a higher willingness to visit the cool than the non-cool restaurant.

We further dissected the interaction by examining the association between self-esteem and willingness to go to the cool and non-cool restaurant separately. Conceptually replicating study 1, we detected a negative association between self-esteem and willingness to go to the non-cool restaurant (*Exp(b)* = -5.055, $t(300) = -1.99$, $p = .047$). That is, lower self-esteem was associated with increased willingness to patronize the non-cool restaurant. As expected, when the restaurant was cool, the association between self-esteem and willingness to go to the restaurant was positive (*Exp(b)* = 8.595, $t(300) = 3.44$, $p = .001$). That is, lower self-esteem was associated with decreased willingness to patronize the relatively superior restaurant.

Figure 2: Association between self-esteem and restaurant framing



Note: Vertical lines represent Johnson-Neyman points.

The pattern of results in study 2 supports the theory that consumers with low and high self-esteem pursue different self-related motives in the marketplace. Consistent with theorizing, participants with relatively low self-esteem preferred the restaurant that signaled negative self-views over the restaurant that signaled positive self-views, ostensibly because the non-cool restaurant was aligned with their relatively pessimistic self-views. That effect flipped among those with relatively high self-esteem. They preferred the cool restaurant over the non-cool restaurant, ostensibly because the cool restaurant enabled them to feel good about themselves.

Conceptually replicating study 1, low (vs. high) self-esteem consumers were more inclined towards the product that could signal

negative self-views—in this case, the uncool restaurant. In contrast, when the restaurant was framed as cool and thus signaled positive self-views, low self-esteem consumers were less willing to patronize the restaurant than high self-esteem participants.

Study 3

Study 3 aimed to reconcile our theory with compensatory consumption (Dubois et al. 2012; Gao et al. 2009; Lisjak et al. 2015; Mandel et al. 2016; Rucker and Galinsky 2008) by examining the interaction between trait self-esteem and a manipulation that delivers negative feedback (i.e., being assigned to a position of low power; Rucker and Galinsky 2008). The differential motives associated with low and high trait self-esteem yield distinct predictions about what happens in the wake of negative feedback.

Consumers with low self-esteem harbor expectations of inferiority, failure, and rejection (McFarlin and Blascovich 1981; Murray et al. 2000; Swann et al. 1987). Manipulations that are designed to threaten self-views, such as being assigned to a subordinate role, provide feedback that is consistent with the failure expectations of low self-esteem individuals (Brown and Dutton 1995; Shrauger and Rosenberg 1970). Hence, among participants with relatively low trait self-esteem, being assigned to a subordinate role is an outcome that is consistent with their chronic self-views. If participants with low self-esteem choose products that are aligned with their self-views, then participants with low self-esteem should be equally inclined towards inferior products in the equal-control and low-

power conditions. Thus, low self-esteem people should be less inclined to engage in compensatory consumption as compared to high self-esteem people.

People with high self-esteem expect superiority, success, and acceptance (Dutton and Brown 1997; McFarlin and Blascovich 1981; Murray et al. 2000). Manipulations that deliver negative feedback (such as assignment to a subordinate role) are threatening to high self-esteem participants' positive self-views, thereby strengthening their motivation to self-enhance (Baumeister 1982; Sedikides and Gregg 2008). For example, when criticized, people with high (vs. low) self-esteem were more likely to make themselves look good by derogating those who criticized their work (Bushman and Baumeister 1998; Kirkpatrick et al. 2002). Moreover, a meta-analysis concluded that people with high (vs. low) self-esteem are more likely to engage in compensatory behaviors in the wake of threat (vanDellen et al. 2011). We therefore expected that, consistent with work on compensatory consumption, participants with high self-esteem would show a stronger preference for superior products when they were assigned to a low-power (vs. equal-control) position.

Study 3 measured trait self-esteem and then randomly assigned participants to a low-power or equal-control position in a group task. Then, participants made seven binary choices between superior (high-status e.g., BMW automobile) and inferior (low-status; e.g., KIA automobile) products. In this way, study 3 moved beyond studies 1-2 by examining choice of inferior products over superior products rather than relative preference.

Because we examined high status and therefore relatively expensive products, we measured trait frugality and socioeconomic status to ensure that participants with low self-esteem were not choosing inferior products because of a desire to save money. Studies 1 and 2 left open the possibility that low self-esteem consumers shy away from superior products because they do not feel entitled to reward themselves with superior products (Callan, Sutton, and Dovale 2010; Cavanaugh 2014; Newheiser, Sawaoka, and Dovidio 2012). We therefore measured deservingness to examine whether it would explain the higher preference for inferior products among low versus high self-esteem participants.

Design and procedure

Study 3 measured trait self-esteem and manipulated low power versus equal control between subjects. Undergraduate students could sign up to participate in the experiment during a pre-specified time period (five consecutive workdays in return for partial course credit). We aimed to collect as many participants as possible but at least 50 participants per "cell", so 200 participants in total. At the end of day five, 289 undergraduates (116 females; $M_{age} = 19.52$, $SD_{age} = 1.70$) had completed the experiment.

Participants arrived in groups and were led to a large room which was set up to facilitate a group task. The experimenter explained that the research session involved a group task. However, before they could start the group task, they first needed to complete some initial measures. Next, they were led to individual cubicles to complete those measures. In reality, those tasks comprised the study procedures.

Once participants were seated in individual cubicles, they completed the Rosenberg self-esteem scale. Scores were averaged to form a measure of trait self-esteem ($\alpha = .86$, $M = 3.14$, SD = 0.43). We adapted a previously validated social power manipulation to give people less (vs. equal) power over a group task and rewards (Case and Maner 2014; Maner and Mead 2010; Mead and Maner 2012). All participants completed the difficult version of the Remote Associates Test (RAT; Mednick 1968). The RAT presents participants with three words (e.g., Elephant–Lapse–Wise) and asks them to think of a fourth word that ties together the three words (in this case: memory). All participants were given 10 sets of words to complete and the same amount of time to work on the task (200 seconds).

In the low-power condition, participants believed that the RAT measured their leadership abilities and that their performance would determine whether they would be "boss" or "subordinate" in the group task. The RAT was introduced as a pilot test in the equal-control condition. This was done to minimize the likelihood that participants would make negative inferences about the quality of their performance on the task. Upon completion, all participants learned that they had received a score of 2.5 on the task. Participants in the low-power condition were told that, due to their low score, they would take on the role of "subordinate" during the group task. As subordinate, they would do most of the work and their boss would decide which task they would work on. They learned that their boss would evaluate them throughout the group task but that they would not be able to evaluate their boss. Their boss would further decide whether they would receive extra rewards. They, as subordinates, would have no say about the distribution of rewards. In contrast, participants in the equal-control

condition were told that all group members had equal control over the group task and that the rewards earned during the group task would be divided equally among group members.

Next, as a manipulation check, all participants indicated how much power they possessed in the group task (1 = I feel that I have less power than others; 4 = I feel that I have as much power as others; 7 = I feel that I have more power than others; $M = 2.89$, SD = 1.48). Ostensibly because the group room was not yet available, participants were asked to complete an additional measure while they waited to start the group task. In reality, this was the dependent measure. The cover story was given to encourage continued feelings of low power (vs. equal control) during the completion of the outcome variables.

The additional task was introduced as an assessment of product preferences. Participants were presented with seven product pairs that were adapted from previous research for the target population of our study (appendix; Rucker and Galinsky 2008). Each pair contained pictures of two products without price. We validated the products to ensure that each pair consisted of an inferior (low-status) product and a superior (high-status) product (appendix). To illustrate, one product pair consisted of a (superior) BMW automobile and an (inferior) KIA automobile. Presentation order was randomized. For each pair, participants indicated which product they would choose for themselves on a binary measure). We counterbalanced whether the inferior product was displayed on the left or right side of the screen and scale. We computed the sum of inferior products chosen to form an index of inferior product choice. Higher values indicated greater choosing of inferior (vs. superior) products ($\alpha = .71$, $M = 2.19$, SD = 1.86).

After the product choice task, participants completed measures that assessed alternative explanations: A 5-item deservingness scale (Cavanaugh 2014; e.g., "How deserving do you feel of treating yourself?; 1 = not at all deserving to 7 = extremely deserving; $\alpha = .91$, $M = 4.92$, SD = 0.81); the frugality scale from study 1 ($\alpha = .79$, $M = 3.78$, SD = 0.76); monthly income after rent and other fixed costs ($M = 411.66$, SD = 366.87).

Finally, we administered a suspicion probe. Participants indicated whether they believed that there would be a group task: 1) I did not believe there would be a group task at all; 2) I was somewhat suspicious; 3) I completely believed there would be a group task. Eighteen participants who responded "I did not believe there would be a group task at all" on the suspicion probe were excluded because they were thoroughly convinced that the group task was a hoax. Exclusion did not differ as a function of condition ($\chi^2 = 2.22$, $p = .136$). This left data from 271 participants for analysis. Finally, all participants received a written debriefing.

Results

Manipulation Check. We regressed self-reported feelings of power on self-esteem (centered), the effect-coded feedback condition (low-power vs. equal-control condition), and their interaction. The manipulation was successful: participants in the low-power condition felt less powerful than participants in the equal-control condition ($\beta = -.664$, $t(268) = -14.53$, $p < .001$ (partial $r = -.664$). This main effect was not moderated by self-esteem ($\beta = -.087$, $t(268) = -1.32$, $p = .190$; partial $r = -.080$) which indicates that the manipulation was effective regardless of levels of trait self-esteem. In

the same model, self-esteem was not significantly associated with feelings of power (β = .064, $t(268) = 1.40$, $p = .163$; partial $r = .085$).

Product choice. Because our dependent measure was a count variable, we used Poisson regression models to test our predictions. We hypothesized that the effect of the low-power (vs. equal-control) condition on inferior-product choice would depend on trait self-esteem. To test this prediction, we regressed the inferior-product index on self-esteem (centered), the effect-coded feedback condition (low-power vs. equal-control), and their interaction. Consistent with predictions, the effect of the low-power (vs. equal-control) manipulation was moderated by trait self-esteem, as evidenced by a significant interaction (β =-.096, $\chi^2(1) = 5.70$, $p = .017$). In the same model, and replicating our core effect, there was a negative association between self-esteem and choosing inferior products (β = -.289, $\chi^2(1) = 49.84$, $p < .001$). There was also a significant negative main effect of feedback condition (β = -.105, $\chi^2(1) = 5.89$, $p = .015$), replicating the compensatory-consumption effect.

To the best of our knowledge, the Johnson-Neyman technique cannot be applied in Poisson regressions. We thus decomposed the interaction by examining the effect of the low-power (vs. equal-control) manipulation on inferior-product choice among those with relatively low (-1SD) and high (+1SD) self-esteem. Consistent with our predictions, low self-esteem participants were equally willing to choose inferior products in the low-power and equal-control conditions (β = .015, $\chi^2(1) = 0.02$, $p = .885$) whereas high self-esteem participants chose more superior products in the low-power condition than the equal-control condition (β =.405, $\chi^2(1) = 9.03$, $p = .003$).

We continued to dissect the interaction by examining the association between self-esteem and inferior-product choice in the low-power and equal-control conditions separately. Conceptually replicating studies 1 and 2, we detected a negative association between self-esteem and choice of inferior products in the equal-power control condition ($\beta = -.191$, $\chi^2(1) = 11.13$, $p = .001$). That is, the lower participant's trait self-esteem, the more they chose inferior products. Driven by high self-esteem participants' tendency to engage in compensatory consumption (i.e., choose superior over inferior products after negative feedback), the negative association between self-esteem and inferior-product choice was stronger in the low-power condition than the equal-control condition ($\beta = -.386$, $\chi^2(1) = 43.77$, $p < .001$).

Alternative explanations. Next, we evaluated the alternative explanations of frugality, income and deservingness. To do this, we assessed whether the negative associations between self-esteem and inferior-product choice in both the equal-control and the low-power conditions were robust to the inclusion of deservingness, income, and frugality. They were (effect of self-esteem in the equal-control condition: $\beta = -.159$, $\chi^2(1) = 7.21$, $p = .007$; low-power condition: $\beta = -.353$, $\chi^2(1) = 34.56$, $p < .001$). Deservingness, frugality, and income were not significant predictors of inferior-product choice in this model (all $t < 2.59$, all $p > .110$). In sum, the alternative accounts of deservingness, frugality, and income were not able to explain the association between self-esteem and choice in either the equal-control or the low-power condition.

Discussion

The results of study 3 support the hypothesis that consumers with low self-esteem are inclined to choose (inferior) products that are congruent with their self-views whereas consumers with high self-esteem choose (superior) products that enhance self-views. We elucidated the different self-related motives of low and high self-esteem consumers by administering negative feedback (i.e., relegation to a subordinate role in a group task). As expected, trait self-esteem determined whether consumers self-enhanced with superior products in the wake of negative feedback.

The pattern of results among low self-esteem participants is consistent with the theory that they use products to confirm, rather than enhance, self-views. Conceptually replicating studies 1 and 2, low self-esteem participants were more inclined toward inferior products than high self-esteem participants, regardless of experimental condition. What is more, because a subordinate role is consistent with the chronic self-views of those with low self-esteem, they chose the same number of inferior products across the low-power and equal-control conditions. Our theorizing and findings are consistent with the speculation that people will not engage in compensatory behavior if failure feedback is aligned with people's chronic self-views (Gao et al. 2009).

The pattern of results among high self-esteem participants suggest that they use products in the pursuit of self-enhancement. High self-esteem people expect to be successful, so being relegated to a subordinate role in a group task should threaten their positive self-views and boost their usual motivation to self-enhance (Baumeister 1982; Mandel et al. 2016). This

was evidenced by an increased number of superior products chosen in the low-power condition as compared to the equal-control condition.

This study does not support the alternative explanation that low self-esteem consumers are inclined towards inferior products solely because they feel undeserving, as evidenced by the fact that the association between self-esteem and product choice in each feedback condition was robust to the inclusion of deservingness. Building on study 1, the desire to save money, as indicated by income and frugality, was also not sufficient to explain our results, even though in this study the products were relatively more expensive than those used in study 1. In sum, the evidence supports the idea that low self-esteem consumers choose products that verify their self-views while high self-esteem consumers choose products that enhance their self-views.

Study 4

We hypothesize that low self-esteem consumers choose products that they perceive to be characteristic of themselves whereas high self-esteem consumers choose products that boost their self-views. To test the self-verification mechanism directly, we aimed to alter participants' perceptions of whether they typically choose inferior or superior products in a given product category (in this case, alcohol). That is, we aimed to change participants' perceptions of whether superior (vs. inferior) alcohol was characteristic of them. A baseline condition, in which we did not manipulate perceptions of typicality, was included to ascertain chronic preferences. Study 4 moved beyond previous studies by measuring a

binding, consequential choice instead of hypothetical preferences. More specifically, we assessed whether participants wanted to participate in a raffle for inferior (lower-quality) alcohol or superior (higher-quality) alcohol (see validation study in the appendix).

The theory that low self-esteem consumers tend to pursue self-verification suggests that they will exhibit a tendency to choose the quality of alcohol that is perceived to be characteristic of them, thus choosing in line with induced perceptions of typicality. Moreover, because low self-esteem consumers in the baseline condition should already feel that relatively inferior products are characteristic of them, product choice should be equal between the baseline and inferior-product typicality conditions for low self-esteem consumers. In contrast, if high self-esteem consumers are motivated to self-enhance rather than to self-verify, they should be relatively impervious to the typicality motivation and generally inclined to choose the superior alcohol.

To show specificity for our proposed moderator, we also assessed preferences for an unrelated product category (clothing). Participants chose to participate in a raffle to win either inferior (lower-design quality) or superior (higher-design quality) clothing items (for stimuli validation see appendix). Because participants were not led to believe that superior or inferior clothing was characteristic of them, we expected that low self-esteem participants would revert to being more inclined to choose the inferior product as compared to high self-esteem participants regardless of the typicality manipulation for alcohol. We thus predicted to conceptually replicate the negative association between self-esteem and choosing inferior items (in this case, inferior clothing).

Study 4 also aimed to pit our favored explanation for low self-esteem consumers' product choice—self-verification—against the alternative account of deservingness. We measured whether participants thought that inferior or superior alcohol was typical of them, and how deserving they felt. If low self-esteem consumers exhibit a tendency to choose alcohol that is characteristic of them, we should find that typicality perceptions (but not deservingness) mediate the alcohol choice pattern among low self-esteem participants.

Design and procedure

Study 4 measured self-esteem and manipulated perceived product typicality (inferior vs. superior vs. control). Because our core dependent measure was dichotomous, we aimed to increase statistical power by boosting our sample size to 500 participants. As in study 1, MTurk participants who indicated at the beginning of the survey that they did not drink alcohol were redirected to a different survey (n = 11), leaving 504 non-abstinent participants (280 females; M_{age} = 38.13, SD_{age} = 11.35).

Participants in the inferior and superior conditions first completed the manipulation, which was an adaptation of a procedure used to induce perceptions of being an environmentally conscious consumer (Cornelissen et al. 2008). This procedure induces self-beliefs by asking participants how much they agree with a set of common, everyday behaviors (using a Likert scale). For this investigation, we asked participants to indicate how much they agreed with five behaviors that involved choosing either lower-quality or higher-quality alcohol products. We pre-tested the items to ensure that most participants strongly endorsed the five behaviors in each set. In this

way, participants saw themselves agreeing with behaviors that reflected a tendency to consume superior over inferior alcohol products (and vice versa). Consistent with past findings (Cornelissen et al. 2008), we expected that participants would therefore make inferences about which types of alcohol were typical of them (i.e., inferior when they had endorsed choosing lower-quality alcohol in the past; superior when they had endorsed choosing higher-quality alcohol in the past).

The manipulation presented participants with five common alcohol-related behaviors (see appendix) that consumers in our pretest highly endorsed. Participants were asked to indicate whether they engaged in each of these behaviors (1 = I do not agree to 7 = I fully agree). In the "inferior-alcohol" typicality condition, participants indicated their agreement with five *inferior* alcohol buying behaviors that are common in everyday life (e.g., I buy alcohol at convenient bottle shops even though they have lower-quality brands; $\alpha = .82$; $M = 4.84$, SD = 1.62; appendix). In the "superior-alcohol" typicality condition, participants responded to five *superior* alcohol buying behaviors that are common in everyday life (e.g., I choose well-known brands over store brands because I want something of high quality; $\alpha = .80$; $M = 4.69$, SD = 1.32; appendix).

To check whether the manipulation altered self-beliefs, we assessed typicality beliefs for alcohol products. Participants indicated how much they generally agreed to three questions that were adapted from previous research (Sirgy et al. 1997). Participants indicated which type of alcohol products were typical of them using the following questions: "These alcohol products are characteristic of me," "These alcohol products are representative of me," and "These alcohol products suit me.". The

endpoints of the seven-point response scale were labeled “premium alcohol” (1) and “basic alcohol” (7) respectively; $\alpha = .97$; $M = 3.36$, SD = 1.54). The scale did not show product pictures.

The dependent measures came next. The participants learned that the researchers would raffle off products among the participants. The first raffle involved alcohol products. Participants saw two groups of alcohol products. One group of inferior alcohol products (labeled “basic alcohol”) and one group of superior alcohol products (labeled “premium alcohol”). The alcohol products shown were relatively unfamiliar to US consumers to make sure that they did not hold preexisting preferences for individual products (appendix). We asked participants if they wanted to participate in the raffle for a chance to win either the premium or the basic alcohol (i.e., binary measure $\%_{\text{inferioralcohol}} = 9.1\%$). We randomized on which side of the screen the group of inferior alcohol products was presented. The participants were told they had the chance to win one of the products of whichever alcohol category they had chosen.

Next, participants completed a second raffle. This time in a product category that was unrelated to alcoholic beverages–clothing items. Participants saw two groups of clothing items, which were matched to participants’ gender. One group of clothing consisted of four superior (high aesthetic design quality) clothing items (see appendix). The other group contained four inferior (low aesthetic design quality) clothing items (see appendix). To illustrate, the inferior clothing group included a pair of unstylish jeans while the superior clothing items included stylish jeans. A validation study ensured that the clothing items differed in terms of perceived aesthetic design quality (see validation study in the appendix).

We randomized on which side of the screen the group of inferior clothing items was presented. The participants again indicated if they wanted to participate in the raffle for clothing items in the left or right group. They again believed to have the chance to win one of the four products of whatever raffle they had entered their name into ($\%_{inferiorclothing} = 40.2\%$).

After making their raffle choices, participants completed the Rosenberg (1965) trait self-esteem scale as part of an ostensibly unrelated second study ($\alpha = .92$; $M = 3.13$, SD = 0.59). Next, we measured deservingness with the items from study 3 ($\alpha = .97$; $M = 4.89$, SD = 1.51). The study concluded with several open-ended follow-up questions that asked participants to guess the research hypothesis. These served to ensure that potential results could not be attributed to experimental demand. Inspection of these answers revealed that none of the participants recognized that the initial questions about their alcohol-related behaviors were a manipulation.

Results

Choice of alcohol raffle. We tested the hypothesis that alcohol-raffle choice (inferior vs. superior) would depend on trait self-esteem and the manipulation. If participants with relatively low self-esteem choose products in the service of self-verification, they should pick the alcohol raffle that is consistent with induced perceptions of product typicality (i.e., the superior raffle in the superior is typical condition; the inferior raffle in the inferior is typical and baseline conditions). In contrast, if participants with relatively high self-esteem choose products in the service of self-enhancement, they should be unaffected by the typicality manipulation,

hence, equally inclined towards entering their name in the superior alcohol raffle across experimental conditions.

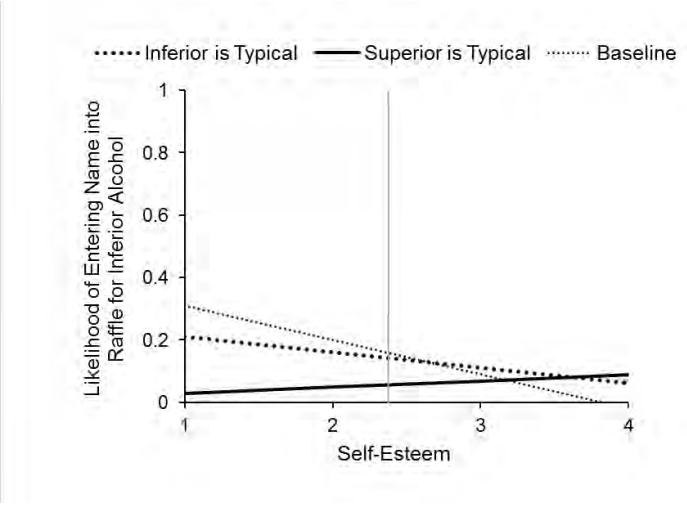
To test these predictions, we conducted two binary logistic regressions. The first regressed alcohol-raffle choice on self-esteem (centered), the inferior typicality condition (vs. baseline; effect coded), and their interaction. As expected, we found a marginal negative main effect of self-esteem (b = -.209, χ^2 = 3.66, p = .056), replicating our core result that low self-esteem consumers were more likely than high self-esteem consumers to choose inferior products. We expected low and high self-esteem consumers to be impervious to the inferior (vs. baseline) typicality manipulation, the former because of chronic perceptions that inferior products are characteristic of themselves and the latter because their choices should be driven by a motivation to self-enhance rather than by a self-verification motive to choose products they feel are characteristic of them. Consistent with that theorizing, the main effect of self-esteem was not moderated by the inferior (vs. baseline) typicality manipulation (b = .242, χ^2 = 01.88, p = .171). The main effect of the inferior (vs. baseline) typicality manipulation was not significant (b = .062, χ^2 = 0.30, p = .585).

The second analysis regressed alcohol choice on self-esteem (centered), superior (vs. baseline) condition (effect coded), and their interaction. As expected, the model revealed the predicted interaction between self-esteem and the superior (vs. baseline) typicality condition (b = .487, χ^2 = 4.80, p = .029). The main effects of the superior (vs. baseline) typicality condition (b = -.065, χ^2 = 0.08, p = .783) and self-esteem (b = -.253, χ^2 = 1.29, p = .256) were not significant.

To dissect the superior (vs. baseline) condition by self-esteem interaction, we identified the regions of the self-esteem distribution where the manipulation (superior typical vs. baseline) changed participants' alcohol-raffle choice (figure 3). Participants with self-esteem at or below 2.38 (-1.26 SD; 9.94 % of the sample) became significantly more likely to enter the superior-alcohol raffle (and hence significantly less likely to enter the inferior alcohol raffle) in the superior (vs. baseline) typicality condition. Also, as expected, the alcohol-raffle choice of high self-esteem consumers was not significantly affected by the superior (vs. baseline) typicality manipulation.

We further dissected the superior (vs. baseline) typicality condition by self-esteem interaction by estimating the effects of self-esteem on alcohol-raffle choice in the superior is typical and baseline conditions separately. As expected and replicating our core result, self-esteem was negatively associated with choice of entering the inferior-alcohol raffle in the baseline condition (b = -.740, χ^2 = 7.43, p = .006). We have argued that, if low self-esteem consumers choose products to self-verify, then they should become relatively more inclined to choose the superior-alcohol raffle (and hence less likely to choose the inferior-alcohol raffle) when they see superior alcohol as more characteristic of themselves (i.e., in the superior condition). In this way, the negative relationship between self-esteem and choice of superior products should be mitigated in the superior is typical condition, which indeed was the case (b = .235, χ^2 = 0.44, p = .506).

Figure 3: Likelihood of choosing inferior alcohol as a function of typicality manipulation and self-esteem



Note: The vertical line denotes the Johnson-Neyman point.

Moderated mediation. We conducted moderated mediation analyses to test the hypothesis that low self-esteem consumers were more likely than high self-esteem consumers to participate in the alcohol raffle that they perceived to be characteristic of themselves. If that hypothesis is correct, then perceived typicality of alcohol products should statistically mediate the effect of the manipulation (superior is typical vs. baseline) on choice of alcohol among consumers with low but not high self-esteem. We estimated a significant indirect effect among low self-esteem participants (-1SD): as expected, the superior (vs. baseline) typicality manipulation boosted choice of entering the superior-alcohol raffle by instilling the belief that superior alcohol was typical of the self (index = –.2177, SE = .1122, 95% CI [–.4961, –.0421]). Consistent with theorizing, there was no corresponding indirect effect among those with high self-esteem (+1SD) (index = –.0092,

SE = .0598, 95% CI [–.1593, .0936]). The index of moderated mediation was significant (index = .1042, SE = .0592, 95% CI [.0178, .2584]).

We also tested whether the alternative explanation of deservingness mediated the effect of the superior typicality (vs. baseline) manipulation on choice of alcohol raffle among low self-esteem consumers. We reran the above model, this time including both deservingness and typicality as competing mediators in the model. The index of moderated mediation was significant for typicality (index = .1047, SE = .0611, 95% CI [.0138, .2564]) but not for deservingness (index = -.0002, SE = .0194, 95% CI [-.0461, .0399]).

Clothing Raffle. In the unrelated product category of clothing, we expected that clothing-raffle choice would only be predicted by trait self-esteem. We repeated the above binary logistic regressions, this time using clothing-raffle choice inferior vs. superior) as the dependent measure.

The first model (inferior is typical vs. baseline; effect coded) detected the predicted negative association between self-esteem and inferior clothing choice (b = -.200, χ^2 = 4.41, p = .036). Also consistent with predictions, this main effect of self-esteem was not moderated by an interaction between self-esteem and experimental condition; the main effect of the inferior is typical (vs. baseline) condition was not significant (all χ^2 < .25, all p > .614).

The second model (superior vs. baseline; effect coded) revealed a marginal negative association between self-esteem and inferior clothing choice (b = -.176, χ^2 = 3.07, p = .080). Again, neither the main effect for condition, nor the interaction between condition and self-esteem were significant (all χ^2 < .13, all p > .718).

Discussion

The pattern of results of study 4 supports the theory that consumers with low self-esteem tend to choose products that confirm self-views whereas consumers with high self-esteem tend to choose products that enhance self-views. In this study, participants were subtly induced to believe that superior or inferior products were the type of products they typically chose in everyday life. Consistent with the self-verification theory, when low (vs. high) self-esteem participants believed that inferior alcohol was characteristic of them (in the baseline condition and the inferior-is-typical condition), they were more likely to participate in a raffle for basic alcohol. In contrast, when low self-esteem participants were subtly induced to believe that superior alcohol was self-typical (i.e., in the superior-is-typical condition), they were more likely to participate in the premium-alcohol raffle than those whose self-views had not been altered. Indeed, low and high self-esteem participants were equally likely to participate in the premium-alcohol raffle in the superior condition. Also consistent with theorizing, in a product category in which typicality beliefs had not been manipulated (i.e., clothing), low (vs. high) self-esteem consumers reverted to higher likelihood of choosing inferior products regardless of experimental condition.

The results for high self-esteem consumers suggest that they selected products that served to self-enhance, rather than self-verify. Regardless of their experimental condition, and regardless of the product category, high self-esteem consumers chose to participate in the raffle for the superior products, arguably because choosing superior products enabled them to feel good about themselves.

While the moderation approach in studies 2 and 3 provided indirect evidence that low (but not high) self-esteem consumers pursued self-verification, study 4 established more direct evidence through moderated mediation. Product typicality perceptions, beliefs about whether superior or inferior products are characteristic and representative of the self, explained the product preferences of participants with low (but not high) self-esteem. Consistent with study 3, deservingness was not able to explain our pattern of results, as we did not detect moderated mediation through deservingness.

General Discussion

Our inquiry examined an underexplored self-related motive for consumption–self-verification–and the consumers who typically pursue this motive–those with low trait self-esteem. Across four studies, we demonstrated that consumers with low trait self-esteem, as compared to those with high self-esteem, gravitate towards inferior products. Our results suggest that they do so on a chronic basis to confirm negative self-views with products that signal negative self-views.

We provided evidence for the self-verification account through moderation and mediation. Consumers with low self-esteem were more inclined towards inferior products that signaled negative (vs. positive) self-views and thereby served to verify their preexisting chronic self-views (study 2). Further, low self-esteem consumers' inclination towards inferior products was present chronically and after receiving negative self-related feedback (study 3). The well-established finding that consumers bolster self-views with superior products in the wake of negative feedback (Gao et

al. 2009; Lisjak et al. 2015; Mandel et al. 2016; Rucker and Galinsky 2008) was observed only among those who tend to seek self-enhancement– consumers with high self-esteem. What is more, low self-esteem consumers' chronic inclination to choose inferior products was attenuated when they were induced to believe that superior products were characteristic of themselves (study 4). In other words, when choosing a superior product became aligned with their self-views in a specific product category (i.e., alcohol), low self-esteem consumers became equally likely to choose superior products as their high self-esteem counterparts. Lastly, a moderated-mediation analysis provided direct evidence that low self-esteem consumers' product choices were guided by the self-verification motive. Consumers with low self-esteem selected the products that they perceived to be characteristic and typical of themselves. Typicality perceptions did not explain high self-esteem consumers' choices, in line with the idea that these individuals are more inclined to seek self-enhancement.

Especially relevant for the current investigation is research on feelings of deservingness (Cavanaugh 2014). That work demonstrated that consumers forgo luxurious products when they feel undeserving of nice things. Self-esteem and deservingness are likely to be highly correlated and one might even argue that a feeling of not deserving good things is an element or consequence of low self-esteem. However, self-esteem is not just deservingness, it is larger and probably more fundamental. Our data clearly indicate that consumers with low self-esteem desire inferior products at least in part because they provide the functional benefits of confirming the self. Consistent with the idea that self-esteem in our studies is not just deservingness, we found our results to be robust to the inclusion

of deservingness as a control variable in study 3 and 4. Especially the successful moderated-mediation through product typicality, but not deservingness, in study 4 suggests that low self-esteem consumers chose inferior products because they believed those products to be typical of them. They did not just choose inferior products because they felt unworthy of nice things. Our findings were also not accounted for by the alternative explanations of frugality and income. Taken together, the nuanced findings of studies 1-4 support the theory that low self-esteem consumers tend to choose inferior products in the service of self-verification.

Theoretical contributions

This investigation extends and complements the field's knowledge about self-related motives for consumption in multiple ways. First, to the best of our knowledge, this work is the first to systematically demonstrate that consumers use products to verify their self-views, especially those self-views are negative. Past findings which provide indirect support for our theorizing used correlational designs and/or focused on the affirmation of positive self-views (Escalas and Bettman 2003; Gao et al. 2009; Kassarjian 1971; Malär et al. 2011). Those approaches did not allow for the differentiation of self-verification from self-enhancement. In contrast, the current work manipulated the proposed verification process and also ruled out alternative explanations such as frugality or deservingness. As such, the current work provides strong empirical evidence for the role of self-verification in consumer behavior and hopefully paves the way to further examine this underexplored motive.

Second, our research adds nuance to the field's understanding of the self-enhancement motive and a phenomenon contingent on the self-enhancement motive—compensatory consumption (e.g., Gao et al. 2009; Mandel et al. 2016; Rucker and Galinsky 2008). Thus far, most results on compensatory consumption have been consistent with the possibility that consumers may be universally motivated to compensate against negative feedback by choosing products that signal their success and greatness. Our results, however, inspire a more nuanced perspective. They suggest that it is important to understand consumers' chronic self-views to predict whether consumers will compensate in the wake of negative feedback. In the current work, only consumers with positive self-views to begin with (i.e., those with high self-esteem) engaged in compensatory consumption when they were assigned to a low-power subordinate position. In contrast, those with negative self-views to begin with (i.e., those with low self-esteem) did not engage in compensatory consumption; instead they continued to self-verify with inferior products in the wake of negative feedback (see also Campbell and Sedikides 1999). Consistent with theory (Mandel et al. 2016), and speculations voiced in past investigations (Gao et al. 2009), those who perceive failure and inferiority as consistent with their trait self-views did not engaged in compensatory consumption. Note also that because a majority of study participants hold positive self-views (have high self-esteem), our findings are consistent with past work that detected compensatory consumption when self-esteem was not examined as a moderator (Gao et al 2009; Rucker and Galinsky 2008; Mazzocco et al. 2012).

Third, our work contributes to an emerging stream of research that examines when and why consumers forgo hedonic pleasure to satisfy higher-order motives (Andrade and Cohen 2007; Cavanaugh 2014; Keinan and Kivetz 2011). People with low self-esteem are inclined to choose inferior products such as cheap alcoholic beverages or dingy restaurants not because they tend to be cheap, but because they think that inferior products are representative of themselves. Our work has thus uncovered a novel explanation for the consumption of non-hedonic products: self-verification.

Managerial implications

Our findings have implications for the marketing of products or brands that consumers perceive to be relatively inferior. Marketing professionals might be tempted to invest considerable resources to enhance these products' image. Our findings highlight that these efforts can come at a cost because revamping the product might alienate a subgroup of consumers who liked the product initially for being inferior. Indeed, clearly positioning, and pricing inferior products as inferior seems to have benefits because consumers with low self-esteem tend to identify with inferior products and, as a result, choose them.

We also suggest ways for marketers to help consumers who chronically choose inferior products to break this cycle. Our findings imply that low self-esteem consumers may forgo affordable, superior product versions because they stay loyal to familiar, inferior options that they perceive to be typical of themselves. For instance, Walmart's competitively priced organic food line "Wild Oats" may have failed to appeal to Walmart customers because these consumers did not (want to) identify as healthy,

cool urbanites who buy organic groceries. The self-verification motive suggests that bringing superior products into harmony with low self-esteem consumers' self-views will increase their willingness to choose them. For instance, Walmart customers might have accepted organic products more had they been introduced as an extension of an existing Walmart brand, as compared to a separate organic brand.

Future research

Our investigation highlights several directions for future research. First, our investigation identified a substantial minority of consumers who have unique needs in the marketplace. An international survey with young college students suggests that approximately 29% of people do not hold positive self-views (Diener and Diener 1995). This estimate might be a conservative one because low self-esteem is even more prevalent among women, adolescents, and senior citizens, as well as people of lower (vs. higher) socio-economic status (Kling et al. 1992; Orth, Trzesniewski, and Robins 2010; Twenge and Campbell 2001; Twenge and Crocker 2002). Although trait self-esteem is a highly stable dispositional variable (Robins and Trzesniewski 2005), that fundamentally changes how people see and interact with the world, its role for consumption is still largely in the dark. We encourage researchers to better understand how dispositional self-views shape marketplace outcomes.

Whereas our data indicate that low and high self-esteem consumers differ in the extent to which they are driven by motives to self-verify versus self-enhance, it seems unlikely that the level of the "other" motive is zero for either group. Future research should examine if and under which

conditions individuals with relatively high self-esteem would seek to verify (vs. enhance) in the marketplace. Preliminary evidence suggests that people with otherwise high self-esteem who held chronically negative self-views in a circumscribed self-domain, for instance, sought to verify these views (Swann, Pelham, and Krull 1989). As such, "high" self-esteem consumers may choose inferior products for self-domains in which they do not hold flattering self-views.

In a similar vein, our investigation does not yet elucidate when consumers with low self-esteem would self-enhance. While the product stimuli in our investigation were predominantly intended for public consumption, which might have amplified the perceived costs and risks of self-enhancement among low self-esteem consumers (e.g., rejection, humiliation, failure, Baumeister et al. 1989), more private settings might boost low self-esteem consumers' likelihood to choose superior products. For instance, low self-esteem consumers might dare to choose superior products more when these products are a "secret" and hence are entirely private signals.

Beyond the motives investigated here, self-verification and self-enhancement, both low and high self-esteem consumers should also be influenced by other motives, such as the inherent pleasure of consuming a superior product. Even to low self-esteem consumers, high-quality ice cream with lots of milk fat tastes better than low-quality ice cream with lots of overrun (aka air). Thus, we would not predict that even low self-esteem consumers would always prefer lower-quality products. Future research should investigate the interplay between our two identity-related motives and other motives such as consumption pleasure.

Our inquiry was limited to measuring product preference or choice and did not examine the deeper underlying cognitive and affective antecedents and consequences of consuming inferior products. We encourage researchers to build on our findings to examine whether low self-esteem consumers are conscious of the self-verification motive and which cognitions or emotions this motive may trigger. Our investigation also begs the question whether choosing inferior products helps or hurts consumers with low self-esteem in the short or long run.

Conclusion

This work sheds light on a puzzling behavior: The consumption of inferior products in the face of superior options. Across four experiments, we demonstrate that consumers with low self-esteem are inclined to choose inferior products in the service of self-verification. This work establishes self-verification needs as a counterweight to the dominant conceptualization of products as a vehicle to self-repair, enhance, or mollify when consumers' self-views are thwarted. We hope that this work thereby complements the field's understanding of how self-views relate to product choices. Apparently, some consumers sometimes think that non-cool restaurants and cheap alcohol represent the type of person they are. Future research should build on this finding to uncover whether consuming inferior products harms or hurts low self-esteem consumers in the short and long run.

Appendix

Validation of inferior and superior products (studies 1 and 4) and restaurant framing manipulation (study 2)

In our four reported studies, we measure participants' preference for, or choice of, products that are perceived be relatively "inferior" versus "superior". Products can be perceived as inferior to alternative products in terms of quality or esthetics (Dawar and Parker 199; Rao and Monroe 1989). We presented participants with product pairs that varied in terms of product quality (studies 1, 4), or esthetics (study 4), such that one product was perceived as relatively inferior and the other as relatively superior. We confirmed that the target population perceived the inferior products as inferior and that perceptions of inferiority were independent of respondents' trait self-esteem. The validation study also confirmed that our restaurant framing manipulation (study 2) changed restaurant's perceived coolness but not quality.

Method

To validate that participants perceived the inferior (superior) products as inferior (superior), we asked people from the same population as those who completed the main studies to view and rate the products. Seventy Mechanical Turk workers (MTurk; 33 females; M_{age} = 36.51, SD_{age} = 12.12) were presented with three separate question blocks with each block comprising one of the four sets of stimuli: alcoholic beverages (study

1), Chinese restaurants (study 2), groups of alcohol products (study 4) and groups of clothing products (study 4). The presentation order of the blocks was randomized. Each participant rated all products.

Within each block, the product pairs were presented and described as they were in their respective study. For each of the six alcohol pairs (study 1), the participants indicated which product had relatively lower quality. To illustrate, for the beer pair, the participants answered "Which beer has lower quality?" (1 = Tesco lager; $.35; 4 = quality is the same; 7 = Budweiser lager; $1.2). The product pairs were presented one by one, in random order, and we counterbalanced whether the inferior alcohol product was presented on the left or right side of the screen. The six items were recoded and averaged to form an index of alcohol quality ($\alpha = .87$, $M = 2.85$, SD = 1.39).

For the restaurants (study 2), we held constant the quality of the restaurant while varying whether going to the restaurant would signal positive or negative self-views. Participants were presented with two branches of a Chinese restaurant chain. The restaurant signalling positive self-views was frequented by "cool" customers (6th street branch) while the restaurant signalling negative self-views was frequented by "non-cool" customers (5th street branch). Participants indicated "Which restaurant serves lower quality food?" (1 = the one on 5th street; 4 = quality is the same; 7 = the one on 6th street; $M = 4.03$, SD =1.17). Next, we asked "Which restaurant has a less cool customer base?" (1 = the one on 5th street; 4 = the customer base is equally cool; 7 = the one on 6th street; $M = 3.00$, SD =1.61). We expected quality to be invariant to customer base. We counterbalanced presentation of the restaurants, restaurant pictures, and

whether the inferior restaurant was presented on the left or right side of the screen.

In study 4, participants were presented with two groups of alcohol products, placed side by side, labelled “basic alcohol” and “premium alcohol”. We asked participants, “Which alcohol products have lower quality?” (1 = the ones in the left box; 4 = quality is the same; 7 = the ones in the right box; $M = 2.38$, SD =1.51). They were also presented with two groups of clothing products, side by side, without further description. We asked participants “Which clothes have lower aesthetic design quality?” (1 = the ones in the left box; 4 = aesthetic design quality is the same; 7 = the ones in the right box; $M = 3.00$, SD =1.89).

After rating the products, all participants completed the Rosenberg trait self-esteem scale used in the main studies ($\alpha = .912$; $M = 3.04$, $SD = 0.63$). At the end of the survey, participants indicated whether they abstained from drinking alcohol: Do you drink alcohol? (0 = Yes, I do drink alcohol vs. 1 = No, I never drink alcohol). We excluded abstinent participants’ ratings of stimuli from studies 1 and 4 given that that abstinent consumers were not eligible to participate in those studies. Nineteen participants indicated they did not consume alcohol. As such, 51 participants (22 females; $M_{age} = 36.38$, $SD_{age} = 12.27$) were retained for the tests of studies 1 and 4.

Results

All items were recoded so that lower values indicated that the inferior product was perceived as relatively inferior (e.g., lower quality, lower aesthetic design quality) or less cool. We conducted single-sample t-tests to determine whether inferior-product ratings were statistically lower than the scale-midpoint of 4. Results confirmed that participants perceived the inferior products as inferior (table 1). Also as expected, the quality of the restaurant did not differ, only the coolness of the customer base (table 1). Finally, perceptions of inferiority did not differ as a function of self-esteem across the products (all $p < .401$, table 1).

Table 1: Validation of product stimuli in studies 1, 2, and 4

One-sample T-test (Test-value 4)					
	M	*SD*	*df*	*t*	*p*
Alcohol Quality (study 1)	2.85	1.39	50	-5.93	<.001
Restaurant Coolness (study 2)	3.00	1.61	69	-5.21	<.001
Restaurant Quality (study 2)	4.03	1.17	69	0.21	.838
Alcohol Raffle Quality (study 4)	2.38	1.51	50	-7.70	<.001
Clothing Raffle Aesthetic Design Quality (study 4)	3.00	1.89	50	-3.78	<.001

Regression models (Dependent variable self-esteem)				
	B	*df*	*t*	*p*
Alcohol Product Quality (study 1)	.059	49	.413	.681
Restaurant Coolness (study 2)	-.016	68	-.340	.735
Restaurant Quality (study 2)	-.100	68	-.825	.412
Alcohol Raffle Quality (study 4)	-.103	49	-.841	.401
Clothing Raffle Esthetic Design Quality (study 4)	.114	49	.803	.426

Discussion

In sum, we confirmed that the target population perceived the inferior products as inferior. We also confirmed that framing a dingy Chinese restaurant branch as cool (vs. non-cool) altered perceptions of coolness without altering perceptions of quality. Lastly, we find that

product inferiority perceptions did not differ as a function of trait self-esteem. High and low self-esteem consumers were equally able to identify which of two products was inferior. This raises doubt as to whether the results in our main studies can be attributed to the alternative explanation that low self-esteem consumers might prefer inferior products because they are less motivated, or able, to discriminate between superior and inferior products.

Validation of inferior and superior products in study 3

Study 3 measured students' choice of inferior (low-status) vs. superior (high-status) products. We validated the product stimuli to ensure that the target population perceived the inferior products as being symbolic of relatively low status and that status perceptions were independent of trait self-esteem.

Method

We asked fifty-three student participants (the same population as those who completed main study 3) to rate seven product pairs (26 females; M_{age} = 22.58, SD_{age} = 4.37). Each pair consisted of an inferior (e.g., a Primark suit) and a superior product version (e.g. a BOSS suit). The products matched the participants' gender. For each pair, the participants answered "This product signals lower social status." (1 = definitely left product to 7 = definitely right product). The presentation order of the product pairs was randomized and we counterbalanced on which side of the

scale and screen the inferior product was presented. We recoded and averaged these scores to compute an inferior-status index ($\alpha = .63$; $M = 2.06$, $SD = 0.71$). Lower values indicated that the inferior product was perceived as having relatively lower status. As a last step, participants completed the Rosenberg self-esteem scale ($\alpha = .89$; $M = 2.95$, $SD = 0.51$).

Results and Discussion

We conducted a single-sample t-tests to determine whether the inferior-status index was statistically lower than the scale-midpoint of 4. Results confirmed that participants perceived the inferior products as having relatively lower status ($t(49) = -20.37$, $p < .001$). Regressing self-esteem on the inferior-status index confirmed that perceptions of status did not differ as a function of self-esteem ($\beta = .124$, $t(48) = 0.967$, $p = .390$). In sum, we confirmed that the target population perceived the inferior products as inferior. We also confirmed that inferiority perceptions did not differ as a function of trait self-esteem.

Inferior (low-quality) vs. superior (high-quality) alcoholic, study 1

Non-cool vs. cool restaurant branches, study 2

Nom Wah Tea Parlor 6th Street	Nom Wah Tea Parlor 5th Street
Dishes: Dim Sum (Chinese breakfast food), lunch, dinner, and dessert. The average price per dish is $7.	
 	 
Location: opposite Cofco Second-Hand Office furniture	**Location:** opposite the University of Arts
Customers: attracts walk-in customers	**Customers:** attracts hip people, mostly art students and young professionals

Inferior (low status) vs. superior (high status) products, study 3

Female Participants

Male Participants

Female Participants

PRIMARK

Male Participants

PRIMARK

BRUNOMAGLI

Female Participants

PRIMARK

BOSS

Male Participants

PRIMARK

BOSS

Typicality manipulation (inferior vs. superior alcohol is typical), study 4

Inferior is Typical Manipulation

Indicate whether you usually engage in each behavior. (1 = I do not agree to 7 = I fully agree)

I buy alcohol at convenient bottle shops even though they have lower-quality brands.

When I go to a bar to have a drink, I sometimes choose lower-quality drinks rather than paying more for a higher-quality drink.

I tend to buy cheaper alcohol because that quality is sufficient for me.

When going for drinks with my friends, I prefer to share a pitcher of beer in a pub instead of a bottle of premium beer in a fancy bar.

When my friends order a low-quality drink at a bar, I will also order a low-quality one.

Superior is Typical Manipulation

Indicate whether you usually engage in each behavior. (1 = I do not agree to 7 = I fully agree)

When I buy alcohol, I choose well-known brands over store brands because I want something of high quality.

When I go to a bar to have a drink, I sometimes choose high-quality drinks rather than low-quality drinks.

When I buy alcohol, I avoid buying the cheapest booze available because it usually tastes bad.

When my friends order a high-quality drink at a bar, I will also order a high-quality one.

Low-quality alcohol tastes bad.

Inferior vs. superior alcohol raffle and inferior vs. superior clothing raffle,study 4

Female Participants

Male Participants

Chapter 3
Editing Entertainment: Length Constraints, Product Quality, and the Case of the Motion Picture Industry

Background and Overview

Filmmakers, authors, comedians, and other producers of entertainment products seek to deliver hedonically-pleasing experiences to consumers. The entertainment product development process typically involves creating considerable amounts of content during production and then cutting low-quality elements (e.g., boring scenes, dull prose, bad jokes) in post-production. These steps aim to maximize product quality while theoretically allowing the product's length to be long or short based on the amount of (good) content left after editing. For example, a comedian who cuts bad jokes from a comedy set and is left with many good jokes will perform a longer show than the comedian who is left with fewer good jokes. Yet, maximizing quality may not be the only goal of post-production editing. In some cases, entertainment producers are bound by a length constraint, as occurs for comedy specials, sitcoms, short story competitions, and major motion pictures. We examine how length constraints alter editing decisions and diminish product quality—such as when a comedian with

only 50 minutes of good jokes tells 10 minutes of bad jokes in order to perform a one-hour comedy special.

How do entertainment producers react when they encounter a discrepancy between a length constraint and the amount of good content available in post-production? Minimum length constraints, which occur in Hollywood filmmaking, require producers to keep some bad scenes when the amount of good scenes fails to reach the constraint. Maximum length constraints, which occur in short-story competitions, require producers to cut enjoyable aspects of a story when the amount of engaging prose exceeds the constraint. Target length constraints, which occur for sitcoms or comedy specials, require producers to keep bad content or cut good content depending on the discrepancy between the constraint and the amount of good content. We suggest that consumers are more sensitive to the presence of bad content than the absence of good content. Thus, leaving in bad content (due to a minimum length constraint) diminishes product quality more than leaving out good content (due to a maximum length constraint). We present an experiment that shows how a minimum constraint diminishes the quality of comedy sets more than a maximum constraint.

In search of real-world effects of a minimum length constraint, we explore a popular topic in the marketing literature: motion pictures. In a dataset of more than 1,000 Hollywood movies, we find that short movies are most likely to be low quality. We attribute the prevalence of short bad movies to a 90-minute minimum length constraint required by studios. After production, most filmmakers have enough good scenes to reach 90 minutes. However, some filmmakers who lack enough good scenes to reach

90 minutes must keep some bad scenes—lackluster action sequences or boring B-stories—which makes the movie less enjoyable. We present two additional studies with secondary data to address alternative explanations for the prevalence of short bad Hollywood movies.

Our inquiry mixes theoretical and practical contributions. We present a model of the entertainment product development process that highlights the importance of editing. We show how minimum length constraints jeopardize product quality. We suggest ways to improve the entertainment product development process.

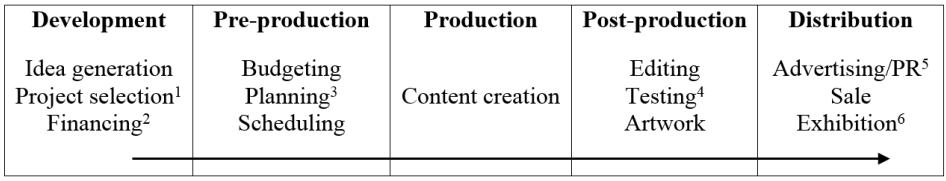
Entertainment Product Development

Consumers in the United States spend 5% of their household income on entertainment (Bureau of Labor Statistics 2015). Indeed, media entertainment is a trillion-dollar (USD) industry that aims to create hedonically-pleasing products, such as movies, magazines, music, podcasts, and video games (Jenkins 2006; Shrum 2012; Statista 2016; Vogel 2014; Zillmann and Vorderer 2000). In 2016, the most popular movies (e.g., *Finding Dory*), TV shows (e.g., *Game of Thrones*), books (e.g., *Harry Potter and the Cursed Child*), and video games (e.g., *Call of Duty: Infinite Warfare*) in the U.S. were primarily consumed for pleasure. Despite these blockbuster successes, failures are all too common. Most television shows do not survive season one; most video games and books are not profitable (De Vany 2004; EEDAR 2016; Epstein 2012; Vogel 2014).

Figure 1 presents a model of the entertainment product development process, which begins with idea generation and ends with exhibition (see

also Caves 2000; Eliashberg, Elberse, and Leenders 2006). The entertainment product development process is similar to product development in general, but there are notable differences. One difference is the difficulty producers have returning to an already-completed stage because of limited budgets, fixed schedules, or simply convention (i.e., "That's the way it's done."). Indeed, bands rarely return to the studio once on tour, and filmmakers can't shoot more scenes because cast and crew move on to other jobs. Another difference is the role of editing in creating high-quality entertainment products.

Figure 1: A model of the entertainment product development process. Superscripts designate representative marketing research that examines the motion picture industry.



*[1]Basuory and Chatterjee 2008; [1]Shaltayev, Deniz and Hasbrouck 2016; [1]Eliashberg, Hui, and Zhang 2007; [2, 3]Basuroy, Chatterjee, and Ravid 2003; [3]Gemser, Leenders, and Weinberg 2012; [3]Elberse 2007; [3]Mathys, Burmester and Clement 2016; [3]Packard, Aribarg, Eliashberg and Foutz 2016; [3]Sawhney and Eliashberg 1996; [3]Simonoff and Sparrow 2000; [3]Singleton 1996; [3]Wallace, Seigerman, and Holbrook 1993; [4]Eliashberg, Jonker, Sawhney, Wierenga 2000; [4]Eliashberg, Weinberg and Hui 2008; [4]Fiske and Handel 1947; [5]Chintagunta, Gopinath and Venkataraman 2010; [5]Eliashberg and Shugan 1997; [5]Elberse and Anand 2007; [5]Legoux, Larocque, Laporte, Belmati and Boquet 2016; [5]Moon, Bergey, and Iacobucci 2010; [5]Liu, 2006; [5]Sood and Drèze 2006; [5]Wang, Zhang, Li and Zhu 2010; [6]Ainslie, Drèze, and Zufryden 2005; [6]Andrade and Cohen 2007; [6]Boatwright, Basuroy, and Kamakura 2007; [6]Burmester, Eggers, Clement and Prostka 2016; [6]Chen, Chen, and Weinberg 2013 [6]Elberse and Eliashberg 2003; [6]Eliashberg and Sawhney 1994; [6]Eliashberg, Swami, Weinberg and Wierenga 2008; [6]Hennig-Thurau, Henning, Sattler, Eggers and Houston 2007; [6]Jedidi, Krider and Weinberg 1998; [6]Neelamegham and Chintagunta 1999; [6]Wlömert and Papies 2016

Editing entertainment

Entertainment producers create considerable amounts of content during production. Ernest Hemingway wrote a 107,000 word draft of *The Sun Also Rises* (67,707 final word count; Wagner-Martin 2002). Beyoncé recorded 80 songs for her self-titled album (14 songs released; McRady 2013). And for every joke that Seth Meyers told as host of *Saturday Night Live's* Weekend Update there were 40 other jokes created in the writer's room (NPR 2008). Producers create a lot of content because many scenes, songs, or jokes are not good enough to exhibit—even those created by A-list talent.

People consume media entertainment to have hedonically-pleasing experiences—and avoid dull or distasteful experiences (Holbrook and Hirschman 1982; Vorderer, Klimmt, and Ritterfeld 2004). Therefore, during post-production editing, entertainment producers seek to remove content that is unpleasant, redundant, or fails to move a story forward (Ellis 2001; Murch 2001). Miles Davis noted, "I listen for what I can cut out." Elmore Leonard quipped, "I leave out the parts that people skip." And writers of all kinds know Strunk and White's maxim, "Omit needless words." What is needless or not, naturally, depends on the product: bad jokes for comedy shows, boring songs for albums, small talk on podcasts, and so on.

Under ideal circumstances, editing transforms an early version of a product with good and bad content (e.g., a rough cut of a movie) into a final product with *only* good content (e.g., a theatrical release). Thus, an entertaining product could be long or short depending on the amount of

good content available in post-production. Some Oscar worthy movies are 178 minutes (*The Godfather*); others are 93 minutes (*Annie Hall*). Some classic novels are 265,000 words (*Ulysses*); others are 67,707 words (*The Sun Also Rises*).

Length constraints

In theory, an entertainment product's final length is determined by the amount of good content available in post-production. In practice, however, products may have a length constraint due to distribution requirements (e.g., network television schedules) or convention (e.g., by tradition, comic books in the US and UK are 32 pages long; The Writers' Guild of Great Britain 2011). Some products must reach a minimum length. Hollywood studios typically contractually require directors to make movies 90 minutes or longer (personal communication: S. Ganis, February 15, 2016; J. Jusko August 5, 2016). Other products cannot exceed a maximum length. To win a Nebula Short Story Award, science fiction writers must submit stories that are fewer than 7,500 words (The America Science Fiction and Fantasy Writers, n.d.). Yet, other products must reach but not exceed a target length. Network sitcoms are 22 minutes and one-hour comedy specials are 60 minutes (obviously).

In some cases, the amount of good content available after production might fail to reach a length constraint. In other cases, the amount of good content might exceed a length constraint. We highlight how a discrepancy between the amount of good content and a minimum, maximum, or target constraint causes entertainment producers to alter editing decisions:

Minimum length constraints. A minimum constraint causes producers with too little good content to keep low-quality elements. For example, a filmmaker who has only 75 minutes of good scenes will keep some bad scenes to reach a 90-minute running time required by a studio. Note: this occurs when a producer is unable to return to production to create more content.

Maximum length constraints. A maximum constraint causes producers with too much good content to cut high-quality elements. For example, an author of an enjoyable 8,000-word story will cut some engaging prose to reach a 7,500-word submission constraint.

Target length constraints. A target acts as a maximum when the amount of good content exceeds the constraint. Other times, a target length acts as a minimum when the amount of good content fails to reach the constraint. A comedian performing a one-hour comedy special will cut some good jokes from a comedy set with 70 minutes of good jokes. Yet, a comedian with only 50 minutes of good jokes will keep some bad jokes.

Entertainment Experiences

A discrepancy between the amount of good content and a length constraint predictably alters editing—keeping bad content due to a minimum constraint or cutting good content due to a maximum constraint. However, it is less clear how altering editing affects product quality.

We propose that keeping bad content diminishes product quality more than cutting good content. First, consumers are more aware of what is

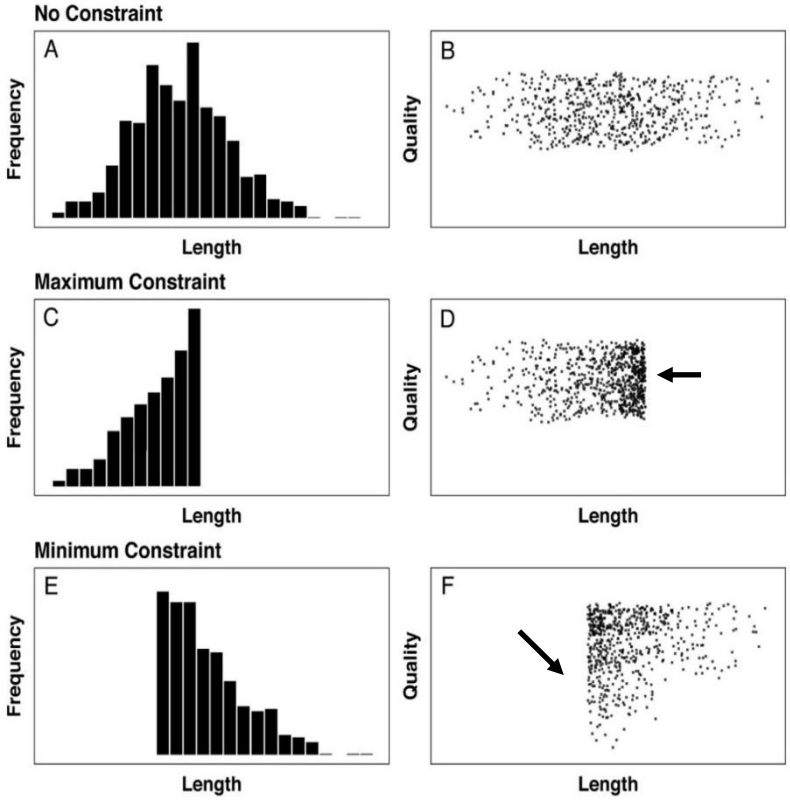
present than what is absent, a phenomenon that Kahneman (2011) calls, "what you see is all there is" (i.e., wysiati). For example, an audience hears the jokes in a comedy set, but is less likely to consider jokes that are not in the set. Second, all things equal, negative stimuli tend to have a greater influence on choices, impression formation, arousal, attention, and moods than positive stimuli (i.e., negativity bias; Baumeister et al. 2001; Kahneman and Tversky 1979; Rozin and Royzman 2001). For example, one-star reviews have a greater effect on book sales than five-star reviews (Chevalier and Mayzlin 2006), and low points in a person's day predict well-being more than high points (Miron-Shatz 2009). Because of "wysiati" and negativity bias, we propose that keeping low-quality elements diminishes product quality—but cutting high-quality elements has little effect (table 1).

Table 1: Effects on product quality depend on whether an element is low-quality or high-quality and whether it is cut or kept during editing.

Element	Low-quality		High-quality	
Decision	"Cut"	"Keep"	"Cut"	"Keep"
Effect	Improves product quality	Diminishes product quality	Little effect on product quality	Improves product quality
Example	Absence of bad joke	Presence of bad joke	Absence of good joke	Presence of good joke

How do length constraints affect a marketplace? The first row of figure 2 illustrates a potential marketplace of entertainment products subjected to an unconstrained "create then cut" process. Suppose there is a normal distribution of lengths (panel A) and about the same likelihood that high quality entertainment products are short or long (panel B). The second row illustrates how a maximum constraint changes the distribution of lengths. Product lengths become shorter, piling just above the constraint because high-quality elements are cut until the maximum is reached (panel C). However, product quality remains about the same because the audience does not experience the missing high-quality elements (panel D). The third row illustrates how a minimum constraint changes the distribution of lengths. Product lengths become shorter, piling up above the constraint because low-quality elements are added back until the minimum is exceeded (panel E). However, quality drops near the minimum because the audience experiences low-quality elements that otherwise would have been cut had there been no constraint (panel F).

Figure 2**:** Illustration of product lengths and quality for a marketplace of entertainment products subject to no constraint, a maximum constraint, or a minimum constraint. Arrows in panel D and F indicate how quality changes due to a maximum and minimum constraint respectively.



Overview of Studies

Our inquiry examines the influence of length constraints on entertainment products. First, we present an experiment that tests how keeping bad content (due to a minimum constraint) diminishes product quality more than cutting good content (due to a maximum constraint). A minimum constraint hurt the quality of comedy sets, whereas a maximum constraint had little effect (study 1).

The remainder of our inquiry examines how a 90-minute minimum constraint could affect the quality of motion pictures. We examined Hollywood movies and found a drop in quality for movies closer to 90 minutes (study 2). We rule out that the effect is due to genre, production budgets, or distribution decisions (study 2 and 3). Finally, we examined Bollywood movies, whose production process is not subject to a minimum constraint. There was not a similar drop in product quality for short Bollywood movies (study 4).

Study 1

We begin with an experiment that examines whether keeping bad content (due to a minimum constraint) diminishes quality more than cutting good content (due to a maximum constraint). We subjected comedy sets to an editing process with either no constraint, a maximum constraint, or a minimum constraint. Then we asked an audience to read the edited comedy sets. We predicted that the audience would enjoy comedy sets edited without a constraint about as much as comedy sets edited with a maximum

constraint. However, we expected a drop in quality for comedy sets that lacked enough good jokes to reach the minimum constraint. Specifically, we predicted a non-linear relationship between length (number of jokes) and comedy set quality in the minimum constraint condition. If the minimum constraint diminishes entertainment experiences because it forces producers to keep bad content, quality should drop for comedy sets that just exceed the minimum constraint. However, quality should remain consistently higher further away from the constraint. These comedy sets had enough good jokes and thus had no bad jokes added to the set.

Methods for creating unedited comedy sets

When comedians create comedy sets, they write many jokes—some good and some bad. To imitate the creation process, we collected 300 jokes from funnyshortjokes.com and GQ.com's "100 best jokes in the world" (GQ n.d.). We conducted a pre-test by presenting ten randomly-selected jokes from the list (with replacement) to Mechanical Turk (MTurk) participants ($N = 600$). Participants made three "yes" or "no" judgments for each joke: "Do you think this joke is funny?", "Do you think that this joke is offensive?", and "Have you heard this joke before?" We eliminated jokes deemed either offensive or familiar by more than 20% of the participants. From the remaining 183 jokes, we retained 18 jokes as potential stimuli: the ten funniest jokes (i.e., good jokes; "The worst time to have a heart attack is during a game of charades.") and the eight least funny jokes (i.e., bad jokes; "What's the difference between 'highly flammable' and 'inflammable'? I can never remember… Arghhh...").

We asked a hypothesis-blind research assistant to prepare 38 unedited comedy sets whose balance of good to bad jokes was normally distributed (table 2; columns 1 and 2). Each comedy set contained ten jokes. The research assistant prepared each set by using a random number generator to draw a pre-defined number of jokes from the pool of ten good and eight bad jokes. For example, when preparing an unedited comedy set that contained five good jokes and five bad jokes the research assistant randomly selected five of the ten good jokes and five of the eight bad jokes (without replacement). In this example, the research assistant repeated the process five more times to create a total of six unedited comedy sets with five good and five bad jokes.

Table 2: Composition of good and bad jokes in unedited and edited comedy sets.

	Unedited sets	**Edited sets**		
Number of unedited sets	Balance of good and bad jokes	No constraint	Maximum constraint (6)	Minimum constraint (6)
2	2 good & 8 bad	2 good	2 good	*2 good & 4 bad*
4	3 good & 7 bad	3 good	3 good	*3 good & 3 bad*
4	4 good & 6 bad	4 good	4 good	*4 good & 2 bad*
6	5 good & 5 bad	5 good	5 good	*5 good & 1 bad*
6	6 good & 4 bad	6 good	6 good	6 good
6	7 good & 3 bad	7 good	*6 good*	7 good
4	8 good & 2 bad	8 good	*6 good*	8 good
4	9 good & 1 bad	9 good	*6 good*	9 good
2	10 good	10 good	*6 good*	10 good
38 sets		**38 sets**	**16 sets (italics) Total = 70 sets**	**16 sets (italics)**

Methods for editing comedy sets with or without constraints

To imitate an unconstrained editing process, we asked the research assistant to cut all bad jokes from the 38 unedited comedy sets. The resulting sets varied in length from two to ten jokes, based on the number of good jokes in the unedited set (table 2; column 3).

To imitate an editing process for a maximum constraint, we asked the research assistant to impose a maximum constraint of six jokes. For the 38 edited comedy sets, the constraint altered editing decisions for 16 sets with seven or more good jokes (table 2; column 4). The research assistant randomly *cut good jokes* from each of these 16 sets until a total of six jokes remained in each set (e.g., a comedy set with nine good jokes would have three jokes cut).

To imitate an editing process for a minimum constraint, we asked the research assistant to impose a minimum constraint of six jokes. For the 38 edited comedy sets, the constraint altered editing decisions for 16 sets with five or fewer good jokes (table 2; column 5). The research assistant randomly *kept bad jokes* for each of the 16 sets until a total of six jokes was reached in each set (e.g., a comedy set with three good jokes would have three bad jokes added back).

In total, the research assistant edited 70 comedy sets: 38 sets not subject to a constraint, 16 sets edited to meet a maximum constraint, and 16 sets edited to meet a minimum constraint.

Methods for assessing product quality

Based on random assignment, 700 MTurk participants read one of the 70 edited comedy sets. The jokes in the comedy set were presented one at a time in random order—with one exception: the funniest joke in each set was presented last to control for possible peak-end effects (Baumgartner, Sujan, and Padgett 1997; Fredrickson and Kahneman 1993; Loewenstein and Prelec 1993; but see Tully and Meyvis 2016). After the last joke, we assessed the product quality by asking participants to provide a rating in response to the question, "Overall, how funny was this comedy set?", using a scale from 1 (not at all) to 5 (extremely).

Results

Our analyses were carried out using comedy set as the unit of analysis. For each of the 70 edited comedy sets, we averaged participants' ratings to create a measure of product quality.

First, we examined the no constraint condition. Figure 3 (panel A) shows how the lengths of the comedy sets were normally distributed. The edited comedy sets were long or short depending on the amount of good jokes in the unedited sets. We plotted the length of the comedy sets against quality (panel B). We did not detect a non-linear relationship between length (log transformed) and quality ($\beta = .134$; $t(1, 36) = 0.81$, $p = .423$).

Next, we looked at how constraints affected the length and quality of the comedy sets. Figure 3 (panel C and D) shows the maximum constraint results. When good jokes were cut to meet the maximum constraint, the lengths piled up at six jokes, which created a negatively-skewed distribution. Like the unconstrained condition, we did not detect a

non-linear relationship between length (log transformed) and quality (β = .145; $t(1, 36) = 0.97$, $p = .338$).

Figure 3 (panel E and F) shows the minimum constraint results. When bad jokes were kept to meet the minimum constraint, the lengths piled up at six jokes, which created a positively-skewed distribution. Unlike the unconstrained or maximum conditions, we detected a non-linear relationship between length (log transformed) and quality (β = .823; $t(1, 36) = 2.36$, $p = .024$).

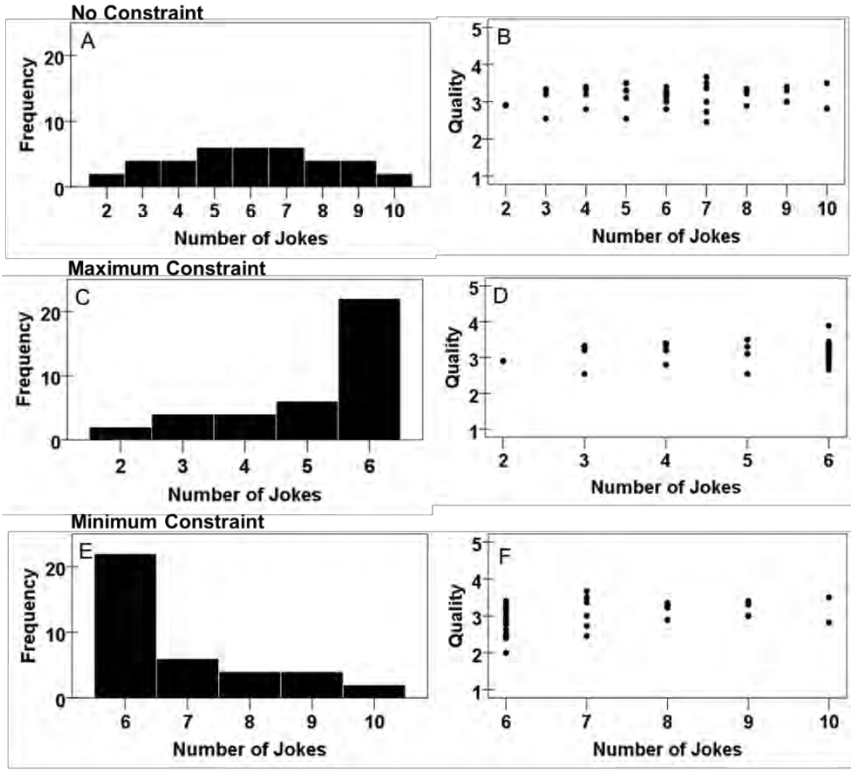
We also measured how the unconstrained comedy sets' quality changed due to a constraint. To do this, we compared the 16 comedy sets that had between seven and ten good jokes (due to no constraint) with their 16 counterparts that were shortened to have six good jokes (due to the maximum constraint). We calculated a mixed linear model to examine the effect of a constraint dummy (no constraint vs. maximum constraint) on quality. The editing dummy was a within-comedy set variable. There was no change in quality between the unconstrained comedy sets and their shortened counterparts (β = -0.001; $t(15) = -.016$; $p = .988$; $M_{\text{noconstraint}} = 3.16$, $SD_{\text{noconstraint}} = .33$ vs. $M_{\text{maximum}} = 3.16$, $SD_{\text{maximum}} = .30$).

We then compared the 16 comedy sets that had between two and five good jokes (due to no constraint) with their 16 counterparts that were lengthened to have six jokes (due to the minimum constraint). We calculated a mixed linear model to examine the effect of a constraint dummy (no constraint vs. minimum constraint) on quality. The editing dummy was a within-comedy set variable. Here, there was a significant drop in quality between the unconstrained comedy sets and their lengthened

counterparts (β = .391; $t(15) = 3.99$; $p = .001$; $M_{noconstraint} = 3.14$, $SD_{noconstraint} = .31$ vs. $M_{minimum} = 2.74$, $SD_{minimum} = .37$).

The above analysis tested comedy sets of different lengths. Our final analysis kept length constant. We compared the 16 comedy sets affected by the maximum constraint with the 16 comedy sets affected by the minimum constraint. Each comedy set contained six jokes. The comedy sets subjected to a minimum constraint were worse ($M = 2.74$, $SD = .37$) than the sets subjected to a maximum constraint ($M = 3.16$, $SD = 0.29$; $t(30) = 3.48$, $p = .002$).

Figure 3: Comedy set length and quality for comedy sets edited with no constraint, a maximum constraint, or a minimum constraint.



Discussion

Our inquiry suggests that maximum and minimum constraints have asymmetric effects on product quality. An audience rated a comedy set edited without constraints to be the same quality regardless of whether the set had ten jokes or two jokes. Consistent with our conjecture, however, keeping bad content (due to a minimum constraint) diminished product quality, but cutting good content (due to a maximum constraint) had little effect. Importantly, the predicted asymmetry was present even when we kept length of the comedy sets constant (at six jokes).

The Motion Picture Industry

"The film is made in the editing room. The shooting of the film is about shopping, almost. It's like going to get all the ingredients together, and you've got to make sure before you leave the store that you got all the ingredients. And then you take those ingredients and you can make a good cake - or not." *-Philip Seymour Hoffman*

Motion pictures are cultural touchpoints, garnering $39 billion USD global box office revenue in 2016 (Motion Picture Association of America 2016). Marketing research has addressed many aspects of the filmmaking process (figure 1; e.g., Eliashberg, et al. 2006). We focus on the relationship between production and post-production

Like other entertainment producers, filmmakers follow a "create then cut" process. In production, filmmakers shoot about 20 times the amount of footage in the theatrical release (Ohanian and Phillips 2013).

Then, in post-production, filmmakers seek to cut "bad scenes," which are dull, redundant, or distract from the plot, and keep "good scenes," which are novel, engaging, and support the plot (Dancyger 2014; Dmytryk 1984). Cutting is essential to improving product quality. According to Hollywood lore, editor Verna Fields improved the movie *Jaws* by urging Steven Spielberg to cut several scenes of the mechanical shark (Rochlin 1995).

When asked how long a person's legs should be, J.D. Salinger quipped, "Long enough to touch the ground." Likewise, directors, editors, screenwriters, and critics tell us that there is no ideal length; a movie should be as long or short as it "needs to be." However, filmmakers rarely make movies shorter than 90 minutes due to contractual requirements of studios (animated movies are an exception). Filmmakers must also comply with a Screen Actors Guild requirement that feature films are 80 minutes or longer (Screen Actors Guild 2008).

Our next three studies examine how a 90-minute minimum constraint could contribute to the prevalence of short bad movies in Hollywood.

Study 2

Our inquiry suggests that a minimum length constraint causes some entertainment producers to leave in low-quality elements that would otherwise be cut. Seeking greater external validity (Lynch 1999; Winer 1999), we looked for the effect of a 90-minute minimum constraint on the quality of Hollywood movies.

Methods

A benefit of using movies as a case study is the availability of data. We obtained most of our data from a third-party provider (Nash Information Services). We restricted the analysis to 1,014 widely-released movies (600+ theaters) from 2000 to 2014. Our analysis examines wide-releases to ensure a large sample of movie ratings, which we use as an indicator of product quality.

For each movie, the dataset provided running time as well as a variety of variables including production budget, genre, director quality, etc. We supplemented the dataset with consumer ratings obtained from International Movie Database (IMDb) and Rotten Tomatoes, as well as critic ratings from Rotten Tomatoes and Metacritic. We culled both consumer and critic ratings to address potential bias due to consumer choice. Consumers may avoid movies that they anticipate are bad, which could bias ratings. Critics, however, rate all types of movies. We found that consumer and critic ratings were highly correlated (*r's* ranged from .66 to .93). We Z-transformed and averaged the consumer and critic ratings to form a movie quality index ($\alpha = .93$).

Results

Length distribution. Consistent with the effect of a minimum constraint, figure 4 (panel A) reveals a positively skewed distribution of running times. Less than .5% of movies were 80 minutes and 12% of movies were shorter than 90 minutes. One out of four movies are between 90 and 100 minutes long.

Length-quality relationship. Consistent with the effect of a minimum constraint, figure 4 (panel B) reveals a drop in quality near 90 minutes. There was a non-linear relationship between running time (log transformed) and quality ($\beta = .398$; $t(1, 1012) = 13.83$, $p < .001$). Next, we aimed to rule out that this non-linear relationship was caused by other movie characteristics. We regressed running time (log transformed) on movie quality while controlling for production budget, number of opening weekend theaters, genre, production method (animation/live action), a sequel dummy, a top director dummy, and year of release (table 3). The non-linear relationship remained significant.

A minimum constraint could cause a particular distribution of variance in product quality. Quality should vary greatly near the constraint because some movies are affected by the constraint. However, movies far away from the constraint should be unaffected and generally less varied. There was a negative non-linear relationship between running time (log transformed) and the variance of product quality ($\beta = -.215$; $t(1, 1001) = -6.95$, $p < .001$). To rule out that the non-linear relationship was caused by other movie characteristics, we also regressed running time (log transformed) on variance of quality while controlling for production budget, number of opening weekend theaters, genre, production method (animation/live action), a sequel dummy, a top director dummy, and year of release (table 3). The effect replicated; variance of product quality was largest for short movies.

Figure 4: Distribution of running time (Panel A), running time quality relationship (Panel B), and subgroup analyses by genre and production budget (Panel C - F) for Hollywood releases.

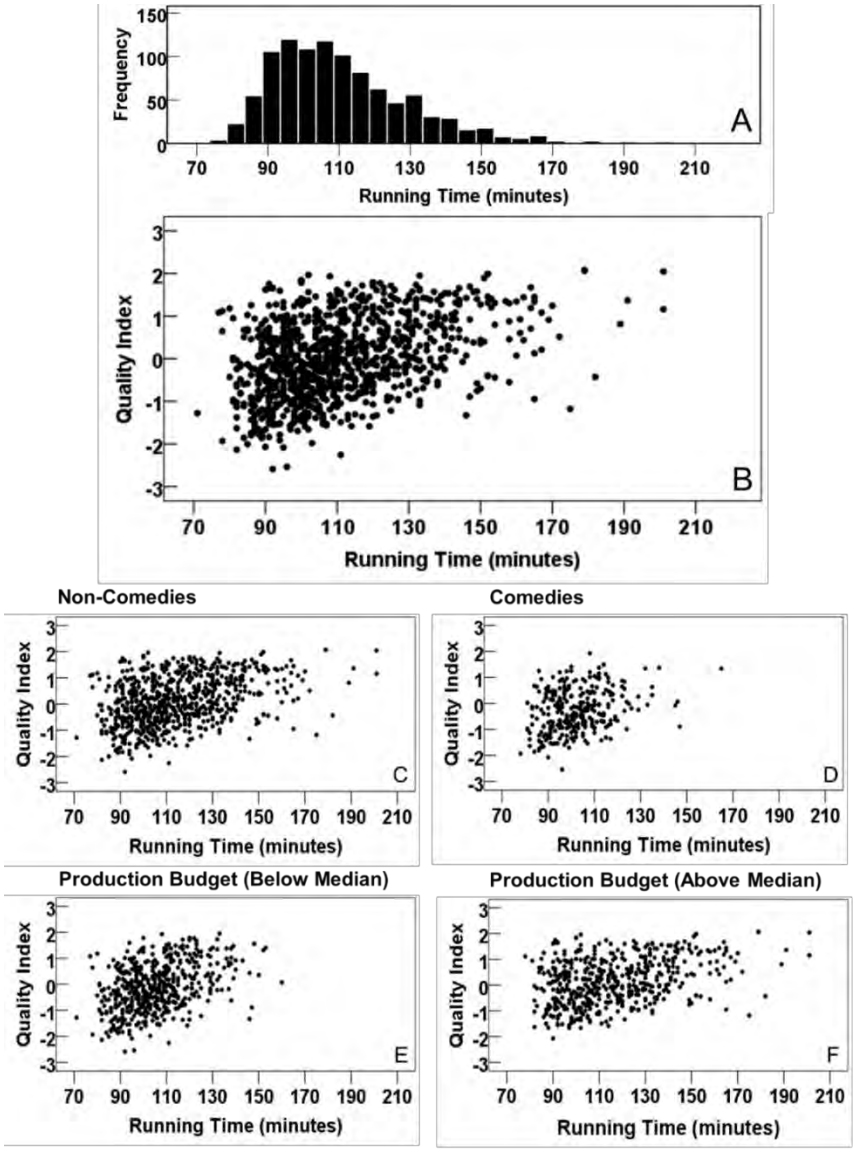


Table 3: Linear regression models predicting movie quality and variance of movie quality for Hollywood releases.

	Dependent Measure					
	Quality Index			Variance of Quality Index (at each level of running time)		
	β	SE	*P*	β	SE	*p*
Running time (log)	.346	.187	<.001	-.231	.069	<.001
Action/Adventure	.055	.074	.147	-.021	.026	.620
Drama/Thriller	.069	.068	.050	.023	.025	.556
Other Genres	-.028	.100	.343	.025	.036	.463
Animation	-.276	.085	<.001	-.059	.031	.105
Sequel	-.021	.077	.483	-.067	.028	.049
OW Theaters	-.144	.033	<.001	.004	.012	.913
Production Budget	.032	.001	.460	.049	.000	.313
Top Director	.119	.090	<.001	.041	.033	.225
Year of Release	-.011	.006	.685	.043	.002	.169
Observations	1013			1002		
R2	.261			.058		
Adjusted R2	.254			.049		
F Statistic	35.44***			6.18***		
df	(10, 1003)			(10, 992)		

We were concerned that something other than a minimum length constraint could cause the drop in quality for short movies. One possibility is a genre—comedies—which tend to be shorter and less highly rated than other genres. Another possibility is production budget, which is correlated with both running time and quality. Our regression analysis controls for those variables (table 3), but we wanted to inspect the length versus quality relationships for low versus high production budgets and comedies versus other genres. Figure 4 (panels C-F) shows that a drop in quality is present regardless of how we split the dataset.

We were also concerned that a non-linear relationship between running time and quality could be due to some idiosyncratic aspect of our dataset. However, the same relationship was present in three other datasets: 1) our dataset of movies released in fewer than 600 theaters, 2) a dataset obtained from Online Movie Database, and 3) a dataset used by a film and television market research firm (personal communication J. Spottiwoode; 8, 2015).

Discussion

In principle, filmmakers who shoot many good scenes should release longer movies (e.g., 120 minutes) than filmmakers who shoot fewer good scenes (e.g., 70 minutes). However, our analysis revealed that Hollywood movies are rarely 70 minutes long. We propose that the filmmaker with only 70 minutes of good scenes will keep some bad scenes which lowers the movie's quality. Consistent with that conjecture, poorly rated movies in our dataset were more likely to be short than long.

We attempt to rule out alternative explanations by controlling for other predictors of running time or quality. Our next two studies examine alternative accounts.

Study 3

We suspect that long bad Hollywood movies are missing from study 2 because they are easily improved by further cutting low-quality elements—which simultaneously shortens the movie and improves quality. We investigate an alternative account that suggests that long bad movies are uncommon because they are released directly to video (e.g., VCR, DVD, VOD).

Methods

We asked hypothesis-blind research assistants to gather the titles of direct-to-video releases between 2000 and 2014 (Wikipedia n.d. a). The research assistants searched IMDb for all direct-to-video releases with a running time of at least 80 minutes so that the releases could qualify as a feature according to the Screen Actor Guild. For each direct-to-video release, the research assistants recorded year of release, genre, whether the release was a sequel (or not), and animated (or not). To obtain a product quality measure, the research assistants gathered consumer ratings from IMDb and Rotten Tomatoes. We did not obtain Metacritic scores and Rotten Tomatoes critics scores because direct-to-video releases are rarely critically reviewed. The dataset contained 412 direct-to-video releases.

We examined how direct-to-video releases would affect the distribution of running times and the length quality relationship in our dataset of Hollywood movies. We therefore added the 412 direct-to-video releases to our dataset from study 2 to create a combined dataset with 1,426 movies. Next, we z-transformed and averaged the IMDb ratings and Rotten Tomatoes Audience ratings to form a product quality index for the combined dataset ($\alpha = .91$).

Results

Length distribution. Figure 5 (panel A) shows the length distribution of the 412 direct-to-video releases (closed bars). Most direct-to-video releases are 90-minute long, and one out of two releases was between 90 and 100 minutes. Figure 5 (panel A) also shows the length distribution of direct-to-video releases combined with Hollywood releases from study 2 (open bars). The negative skew found in study 2 became more prominent.

Length-quality relationship. Figure 5 (panel B) shows the length-quality relationship for 412 direct-to-video releases (closed circles) and 1,014 Hollywood releases (open circles). The non-linear relationship between running time (log transformed) and quality found in study 2 became more prominent when the two datasets were combined ($\beta = .533$; $t(1, 1418) = 23.74$, $p < .001$). The non-linear relationship remained significant when controlling for genre, production method (animation/live action), sequel dummy, and year of release (table 4).

To measure how prominent the non-linear relationship between running time and quality became when direct-to-video releases were combined with Hollywood releases, we computed two regression models:

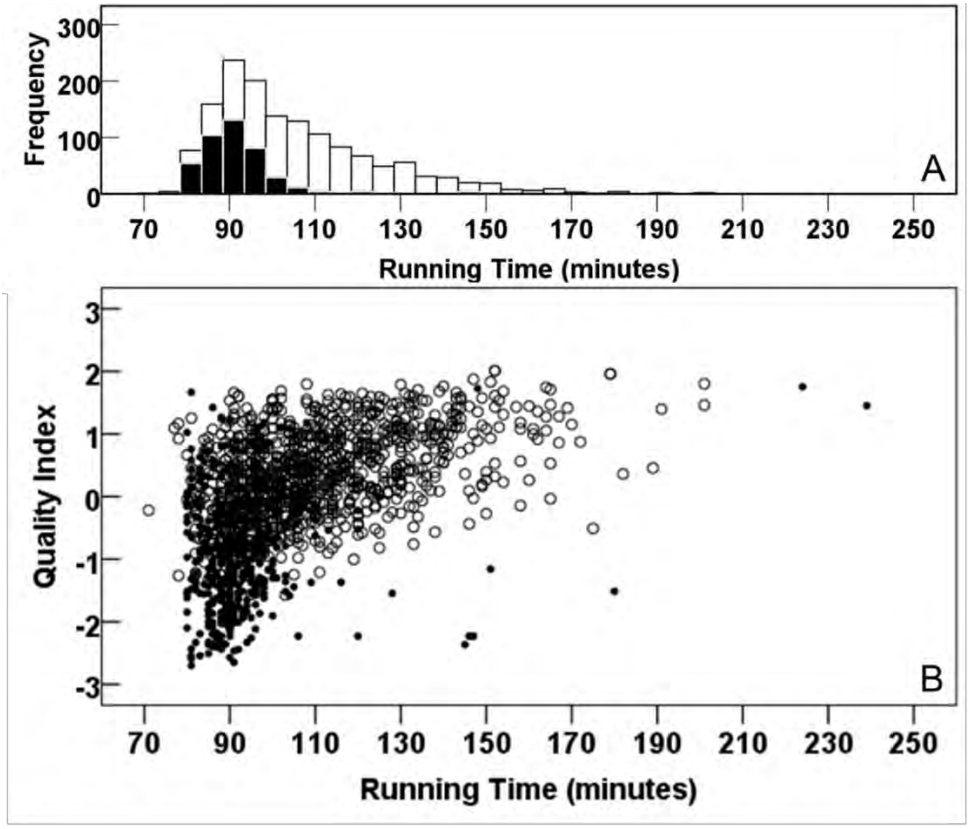
one for Hollywood releases and one for direct-to-video releases combined with Hollywood releases (table 4). We regressed running time (log transformed) on the product quality index, controlling for genre, production method (animation/live action), whether the movie was a sequel, and year of release. The non-linear function was again robust to controls. When we compared the regression coefficients of the model with Hollywood releases and the combined datasets, the running time (log transformed) coefficient was substantially larger, which is consistent with the prominent drop in quality in figure 5 (panel B).

We also examined whether there was a negative non-linear relationship between running time and the variance of product quality for the combined dataset of Hollywood releases and direct-to-video releases. We regressed running time (log transformed) on the variance of product quality (computed at each level of running time), again controlling for the main effects of genre, production method (animation/live action), whether the movie was a sequel, and year of release (table 5). We replicated the results of study 2; the negative non-linear relationship again was robust to controls. As a point of comparison, we ran a regression predicting variance of product quality for Hollywood releases only (table 5). When we compared the regression coefficients we found that the negative non-linear relationship was substantially larger when direct-to-video releases were combined with Hollywood releases.

Table 4: Linear regression models predicting movie quality for Hollywood releases and Hollywood releases combined with direct-to-video releases.

	Dependent Measure: Quality Index					
	Hollywood Releases			Hollywood + Direct-to-video Releases		
	β	SE	*p*	β	SE	*p*
Running time (log)	.433	.127	<.001	.583	.122	<.001
Action/Adventure	.028	.055	.440	-.158	.052	<.001
Drama/Thriller	.100	.054	.004	-.068	.056	.009
Other Genres	-.052	.079	.077	.009	.093	.696
Animation	.233	.064	<.001	.312	.064	<.001
Sequel	-.033	.059	.253	-.052	.056	.015
Year of Release	-.016	.005	.564	.039	.005	.066
Observations	1013			1419		
R2	.254			.388		
Adjusted R2	.249			.385		
F Statistic	49.05***			128.14***		
df	(7, 1006)			(7, 1412)		

Figure 5: Distribution of running time (panel A) and running time quality relationship (panel B) for direct-to-video releases and Hollywood releases.



Note: Hollywood releases are depicted on top of direct-to-video releases with open bars. Direct-to-video releases are depicted with closed bars. Hollywood releases are depicted with open circles. Direct-to-video releases are depicted with closed circles.

Table 5. Linear regression models predicting variance of movie quality at each level of running time for Hollywood releases and Hollywood releases combined with direct-to-video releases.

	Dependent Measure: Variance of quality index at each level of running time					
	Hollywood Releases			Hollywood + Direct-to-video Releases		
	β	SE	*p*	β	SE	*p*
Running time (log)	-.226	.001	<.001	-.582	.048	<.001
Action/Adventure	-.001	.025	.987	.024	.019	.370
Drama/Thriller	.054	.025	.166	.032	.021	.235
Other Genres	-.016	.037	.635	-.039	.035	.098
Animation	-.031	.029	.376	.041	.024	.073
Sequel	-.034	.027	.290	-.002	.021	.916
Year of Release	.049	.002	.117	.009	.002	.688
Observations	1002			1412		
R2	.056			.338		
Adjusted R2	.049			.334		
F Statistic	8.44***			102.28***		
df	(7, 995)			(7, 1405)		

Discussion

We investigated if long bad movies are not present in Hollywood releases because they are released directly to video. However, we found that most direct-to-video releases had shorter running times and were even lower quality than Hollywood releases. When we added direct-to-video releases to our dataset of Hollywood releases, the drop in quality for short movies became even more prominent.

Study 4

Filmmakers cut their movies long or short depending on the amount of good content available after the shooting stops. However, because Hollywood imposes a minimum constraint on filmmakers, we suggest that some movies fail to be cut shorter than 90 minutes. We were concerned that some unidentified aspect of filmmaking could cause the drop in quality in studies 2 and 3. As a point of contrast, we examined India's motion picture industry, which is unaffected by a minimum length constraint.

The Indian government requires feature films to be at least 70 minutes long (Central Board of Film Certification 2010), but Bollywood movies do not come close to that running time because the movies have a lot of entertaining content, especially musical scenes that are popular with audiences (Ganti 2013).

Methods

We asked hypothesis-blind research assistants to search IMDb for Bollywood movies released between 2004 and 2014 (Wikipedia n.d. b). For each movie, the research assistants recorded the running time, year of release, genre, and production budget. The search resulted in partial or complete data for 987 movies. Research assistants also obtained consumer ratings (from IMDb audience score and *Times of India* Reader ratings) and critic ratings (from *Times of India* critic ratings). We Z-transformed and averaged the consumer and critic ratings to form an index of product quality ($\alpha = .84$).

Results

Figure 6 fails to show a positively skewed distribution of running times (panel A). Also, there is not an observable non-linear relationship between running time and quality (panel B). We looked for a non-linear relationship between running time (log transformed) and quality in the Bollywood data. The relationship was statistically significant but weaker than previous studies ($\beta = .109$; $t(1, 985) = 3.44$, $p = .001$). Like in studies 2 and 3, we checked whether the non-linear relationship was robust to controls by running a regression of log of running time on quality while controlling for production budget, year of release, an animation dummy, and genre. A small non-linear effect running time (log transformed) and quality was present (table 6).

Figure 6: Distribution of running time (panel A) and running time quality relationship (panel B) for Bollywood movies.

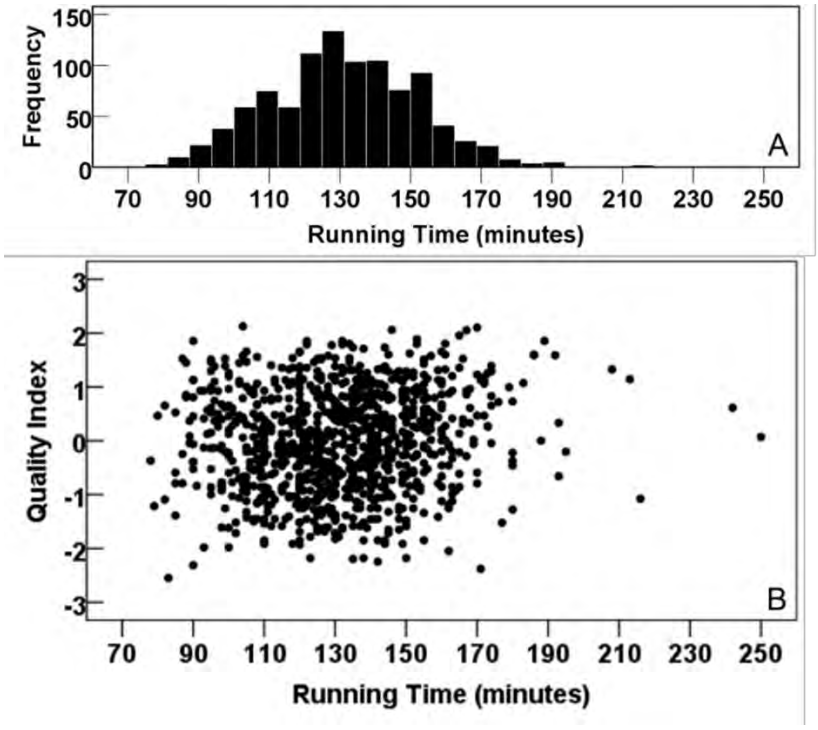


Table 6: Linear regression models predicting movie quality and variance of movie quality at each level of running time for Bollywood releases. Study 4.

	Dependent Measure					
	Quality Index			Variance of Quality Index (at each level of running time)		
	β	SE	*p*	β	SE	*p*
Running time (log)	.103	.209	.006	-.093	.067	.016
Action/Adventure	-.110	.092	.005	-.027	.028	.507
Drama/Thriller	-.002	.071	.957	.012	.021	.761
Other Genres	-.037	.166	.279	-.019	.051	.591
Animation	.093	.270	.006	-.021	.081	.555
Year of Release	.018	.010	.604	-.089	.003	.015
Production Budget	.183	.000	<.001	.033	.000	.403
Observations	865			850		
R2	.060			.014		
Adjusted R2	.053			.006		
F Statistic	7.87***			1.69		
df	(7, 858)			(7, 843)		

We also examined whether there was a negative non-linear function between running time and the variance of product quality at each level of running time. We found a significant negative coefficient. However, the effect was notably smaller than for Hollywood releases and—even with a large sample size—the overall model failed to reach significance (table 6).

Discussion

In order to examine if some unaccounted for aspect of filmmaking could be responsible for our previous results, we examined the relationship between the length and quality of Bollywood movies. Unlike Hollywood movies, we found little evidence that shorter Bollywood movies were lower quality than their longer counterparts. We attribute this finding to the fact that a minimum constraint is irrelevant to Bollywood filmmakers who can add dance scenes and music videos without jeopardizing quality. Although Bollywood filmmakers can lengthen their movie if other aspects of a story are lacking, our results should be interpreted cautiously because of other possible differences between filmmaking in India and the US.

General Discussion

People consume countless hours of movies, music, podcasts, and other forms of entertainment across a wide variety of media platforms (e.g., iTunes, Amazon, Spotify, YouTube, Netflix, Steam). The early versions of those products contained dozens—even hundreds—of less-than-enjoyable scenes, songs, or sentences. Entertainment producers cut those low-quality elements in order to improve product quality.

In theory, the length of the final product could be long or short depending on the amount of good content available in post-production. However, we identify situations in which entertainment producers are bound by a length requirement. A producer whose good content exceeds a maximum constraint will cut some high-quality elements that otherwise would have been kept. Conversely, a producer without enough good

content to reach a minimum constraint will keep low-quality elements that would have otherwise been cut.

We show that the effects of constraints on entertainment products are asymmetric: leaving in low-quality elements (due to a minimum constraint) diminishes product quality more than leaving out high-quality elements (due to a maximum constraint). Consumers perceive the jokes that are left in, whereas consumers do not perceive the jokes that are left out. In study 1, a comedy set's quality was diminished by a minimum constraint but not by a maximum constraint.

Hollywood studios recruit A-list talent and spend millions of dollars to develop, produce, and distribute movies. Yet, movies are often panned by consumers and critics alike. We asked if some variance in product quality could be attributed to filmmakers' inability to make movies shorter than about 90 minutes.

We expected that a minimum length constraint inhibits filmmakers from cutting bad scenes. Our data in study 2 reveals an overrepresentation of short bad movies in 1,000 widely-released Hollywood movies. When we plotted running times by an index of consumer and critic ratings from a variety of sources, we found a pattern similar to the minimum constraint condition in our experiment. There was a drop in quality for short movies (figure 4).

Supplementary analyses ensured that the drop in quality was not easily explained by other factors such as genre or budget. Comedies tend to have shorter running times and receive lower ratings than other genres. Movies with smaller production budgets also tend to be shorter and more poorly rated than higher budget productions. Nevertheless, the effect

persisted when we examined the length quality relationship separately for comedies versus other genres or low budgets versus high budgets.

Our account suggests that long bad movies are rarely released into theaters because filmmakers can keep cutting irrelevant subplots, tedious dialogue, or bad special effects—thus transforming a long bad movie into a shorter better movie. Study 3 ruled out an alternative account that long bad movies are absent from study 2 because they were released as videos. The 429 direct-to-video releases were shorter and lower quality than Hollywood releases (figure 5). Study 4 examined if our effects are due to an unaccounted for aspect of filmmaking. We identified a filmmaking industry with no length constraints: Bollywood. In a sample of 987 Indian movies, we found a negligible drop in quality for short movies (figure 6), but not the prominent drop detected in Hollywood releases (figures 4 and 5).

Managerial implications

Our inquiry has implications for the development of enjoyable entertainment experiences. We present four of them below.

Value of testing. Not having enough good scenes, songs, or sentences is a bigger problem than having too many. The mechanics of the entertainment product development process, however, suggests that producers won't know about the quality of their products until exhibition. By editing and testing early and often, entertainment producers can get a better idea of whether they have enough good content to reach a length constraint.

Create (even) more content. An important aspect of the entertainment product development process is that producers often cannot return to the production stage to create more content. This helps explain why A-list talent, such as Beyoncé, create so much content. In the case of a minimum constraint, creating excessive amounts of content helps make the constraint irrelevant. For example, filmmaker George Miller shot 480 hours of footage for Mad Max: Fury Road, which editor Margaret Sixel helped cut into a two-hour long action-packed release (Gardiner 2015).

Change the model. The entertainment industry increasingly relies on blockbusters to maximize profitability (Elberse 2013; Wolf 2010). Production errors are especially harmful to blockbusters because of cost overruns. For example, after viewing an early version of the zombie thriller *World War Z* and realizing that the third act was terrible, Brad Pitt and company busted the movie's budget by reshooting the final 40 minutes of the movie (Holson 2013; Weisman 2013). Studios, consequently, can benefit from planning reshoots (M. Seymour, personal communication, March 2016). Entertainment producers could also use lean methods that encourage the early release of imperfect products subject to subsequent improvement (Ries 2011; Terwiesch and Ulrich 2009). Kanye West, for example, has revised most songs on his album *The Life of Pablo* by updating tracks on Spotify and other streaming services (Blistein 2016).

Value of editing. Revising and re-arranging content also enhances consumers' entertainment experiences (Dancyger 2014; Ellis 2001; Murch 2001; Seabrook 2015; Vandendaele, De Cuypere, and Praet 2015). Animated movies tend to be well-received by consumers and critics, which

we suspect is partly due to the ability of filmmakers to revise content during production. One year before the release of *Inside Out*, for example, producers at Pixar identified substantial problems with the movie and made major changes to the characters and plot (Giardina 2015; Romano 2016). Re-arranging content also optimizes hedonic experiences. Consuming bad jokes first and good jokes last is preferable to consuming good jokes first and bad jokes last (Baumgartner, et al. 1997; Loewenstein and Prelec 1993). Moreover, re-arranging content can also help create more engaging storylines, as occurs with non-linear narratives used by Joseph Heller (*Catch-22)* and Quentin Tarantino (*Reservoir Dogs)*.

Limitations and future directions

Future research could address various weaknesses of our work. First, we largely treat elements as independent (e.g., the topic of an earlier joke doesn't affect the funniness of a subsequent joke). For some products, including movies, elements can be interdependent. Characters and subplots are woven together to create a narrative, for example, which makes it difficult for producers to cut content solely on the basis of entertainment value. Second, we characterize the quality of elements as binary (i.e., high or low). Yet, the quality is typically continuous, which makes an editor's ability to differentiate good from bad content an important predictor of a product's entertainment value. Third, we have not found a dataset that features a maximum length constraint in a real-world entertainment domain. Fourth, the pursuit of hedonically-pleasing experiences is not the only reason why people pursue entertainment. People consume documentaries, podcasts, and even music to seek meaning, which could

affect consumers' evaluations of their experience (Williams and Percival Carter n.d.).

Study 1 provides initial evidence that audiences are more sensitive to the presence of bad content than the absence of good content. Thus, a takeaway from our inquiry is consistent with Esther Freud's saying, "Cut until you can cut no more." Absent a length constraint, producers may also fail to cut bad content because the loss of cutting may loom larger than its gain (e.g., status quo bias; Kahneman and Tversky 1984)—an effect we suspect is prominent when the same person who created the content also edits (e.g., waste aversion; Arkes and Blumer 1985). The presenter's paradox also suggests why entertainment producers may leave in too many low-quality elements: the producer (i.e., presenter) believe consumers use an additive process to evaluate experiences when, in reality, consumers use an averaging process (Weaver, Garcia, and Schwarz 2012). This way, leaving in low-quality elements diminishes experiences more than leaving out high-quality elements because the latter has a lower average quality of elements than the former.

Conclusion

In contrast with research that reveals benefits of constraints on product quality (e.g., Moreau and Dahl 2005), we show when constraints diminish quality—and when they don't. Moreover, reminiscent of our motion picture results, Roger Ebert quipped, "*No good movie is too long and no bad movie is short enough."* Unfortunately, Hollywood filmmakers with a short bad movie on their hands can't shorten the movie enough. That

insight is fortunate for filmgoers: when choosing between a long and a short movie, we suggest watching the longer one.

Chapter 4
How the Past Shapes the Present: The Assimilation of Enjoyment to Similar Past Experiences

Background and Overview

Consumers pursue experiential products because they are enjoyable. Watching a movie, looking at art, eating a meal in a restaurant, or drinking a glass of wine are examples of experiential products that are predominantly consumed for pleasure. Whether consumers perceive these experiences as truly enjoyable depends on the hedonic value of the experience, which is determined by a host of subtle, complex, and interconnected product features. For instance, whether the hedonic value of a cup of coffee is higher or lower may depend, amongst others, on the quality of the water, the beans, the grinding, and the barista's skillfulness. Given that product experiences are inherently complex, how are consumers able to become sensitive to the hedonic value of an experience? How do they discriminate whether an experience is less or more enjoyable?

Intuitively, a consumer's level of expertise should be an important driver of discrimination ability. Expertise is defined as the level of knowledge that consumers possess in a product domain (Jacoby et al. 1986). Consumers can acquire product knowledge in a certain domain (e.g., cars) through studying, training (e.g., reading books about cars) but also by accumulating experiences (e.g., having owned various cars; Alba and

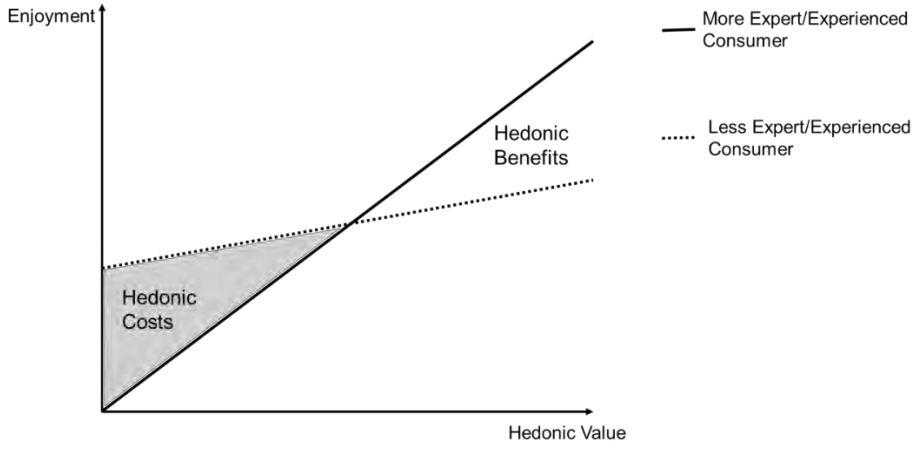
Hutchinson 1987). Much research has been devoted to measuring consumers' level of expertise and assessing downstream consequences of being a novice or expert on consumption outcomes. For instance, it has been shown that more (vs. less) expert consumers invest more effort into elaborating on products, have more fine-grained cognitive structures to categorize products, a broader consumption vocabulary, and superior memory for product information (for a review, see: Alba and Hutchinson 1987; West Brown, and Hoch 1996). While it has been relatively well explored how expertise (e.g., "knowledge") changes cognitive effort, cognitive structure, analysis, elaboration, and memory for products, the field is still in the dark as to how being an expert, or a novice, changes consumers' hedonic enjoyment of products.

To develop predictions on how knowledge affects people's enjoyment of products of various hedonic value, we drew on theories that examined how people's knowledge about numeric stimuli affected their valuation of the size of numbers. Evaluability theory proposed that consumers learn distributional information about numeric stimuli such as prices (e.g., the range, the mean) through prior experiences, which boosts sensitivity for value (i.e., knowledge factor, general evaluability theory; Hsee and Zhang 2010). For instance, participants who had knowledge about the distribution of prices for diamonds (e.g., the range of diamond prices and the average diamond price) were more accurate in judging how expensive a target diamond was than participants who lacked this knowledge. While distributional information about past prices might affect perceptions of how cheap/expensive a product is, it is unclear whether these findings apply to more experiential products. Our investigation is the first

to test *whether* prior experiences boost sensitivity for the hedonic value of experiences. We also examine *how* past experiences trigger sensitivity.

Consistent with evaluability theory, we suggest that prior experiences make consumers' enjoyment more attuned to the hedonic value of experiential products (figure 1). Their enjoyment of higher vs. lower value products differs more strongly. To illustrate, a coffee aficionado should reap more enjoyment from elite experiences (e.g., flavorful coffee) than more novice consumers because they recognize high hedonic value (e.g., "blessing of expertise") while novice consumers are more ignorant ("do not cast your pearls before swines"; Matthew: 7:6). While evaluability theory assumes that greater knowledge would generally benefit consumers (e.g., greater knowledge helps determine whether a price is favourable or not), we predict that having (vs. lacking) knowledge not only has hedonic benefits ("blessing of expertise"), but also hedonic costs ("curse of expertise"). Compared to more novice coffee drinkers, coffee aficionados should reap less enjoyment from inferior experiences (e.g., poorly brewed, bland coffee) because they recognize lower hedonic value ("curse of expertise"). More novice consumers', in contrast, should enjoy a mundane coffee experience more than experts, because they are more insensitive to hedonic value ("blessed ignorance").

Figure 1: Association between hedonic value and enjoyment among more and less experienced consumers



Because evaluability theory and other theories on value sensitivity were mostly tested with relatively simple numeric stimuli (Hsee and Shen 2009; Hsee and Zhang 2010; Morewege et al. 2009; Yeung and Soman 2005), it is unclear whether these theories' predictions will hold up for more complex, multidimensional experiential stimuli. Indeed, previous work has shown that consumers use different strategies when evaluating the value of experiences rather than numbers (Martin, Reimann, and Norton 2016). This investigation aimed to extend existing knowledge by examine *whether* and *how* consumers past experiences with hedonic products would affect their sensitivity to the hedonic value of experiences.

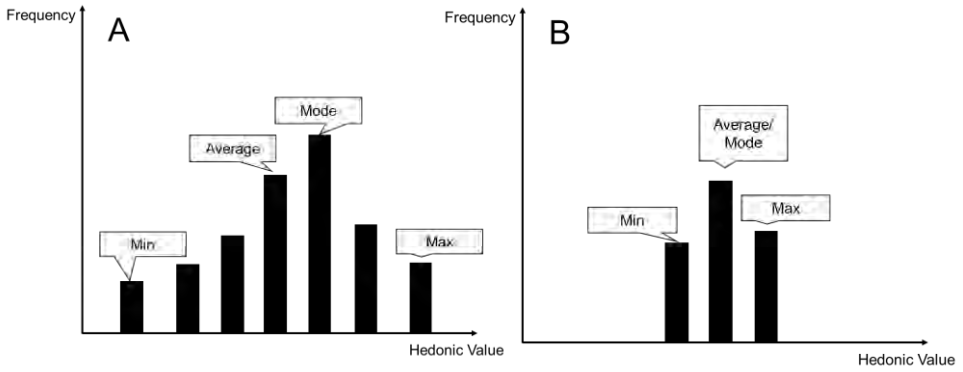
The Distribution of Past Experiences with Hedonic Products

Evaluability theory suggests that consumers acquire knowledge and thus become sensitive to value because their past experiences provide information about the value range and "average value" in the marketplace (i.e., knowledge factor, Hsee and Zhang 2010). It is thus not surprising that past research has sometimes operationalized expertise as the sum of past experiences that consumers have accumulated in a product domain (i.e., familiarity dimension of expertise, Alba and Hutchinson 1987). Clearly, in order to become a coffee aficionado, consumers need to try various types of coffees, made from different coffee beans, in various coffee shops. This work began with the conjecture that a consumer's past experiences in a product domain might have a direct influence on present enjoyment because past experiences provide information (i.e., knowledge) to gauge the hedonic value of new experiences (Hsee and Zhang 2010).

Throughout their lives, consumers sample experiential products (e.g., movies, coffee). Obviously, the type and number of experiences that consumers accumulate varies greatly. Some gather a great variety, others only a few. Some collect the most amazing product experiences, others only experience mediocre products. A coffee aficionado, for instance, may have sampled elite and abysmal coffee while an inexperienced coffee drinker may have mostly visited Starbucks. In this way, more (figure 2; panel A) and less experienced (figure 2; panel B) consumers' distribution of past experiences may vary in many ways. Given that distributions entail multiple features (e.g., sum, min, max, mean, rank, etc.), the question begs: Which aspect of consumers' distribution of prior experiences will affect

present enjoyment? Or, put differently: Which past experience will consumers' use as a comparison standard to gauge how enjoyable a new experience is?

Figure 2: Exemplary distribution of past experiences for more (panel A) and less (panel B) experienced consumers.



If consumers accumulate many experiences of different hedonic value in a product domain, they have acquired a rich pool of possible comparison standards. This chapter investigates which past experiences will serve as the comparison standard to gauge the enjoyability of a new experience. To answer this question, we draw on existing theories that examined how consumers rely on distributional information to compute the value (i.e., utility) of stimuli (e.g., adaptation level theory, range theory, evaluability theory, range-frequency theory, decision-by-sampling theory).

There are important differences between the experimental settings in which these past theories were tested and the present inquiry. First, these theories mostly examined stimuli that varied on only one dimension (prices and other numeric values, or stimuli size). However, recent findings suggest that consumers use different strategies when evaluating the value of

experiences as compared to numbers (Martin et al. 2016). Our investigation thus tested whether findings in the domain of numeric knowledge—in the broadest sense—would apply to more complex, multidimensional stimuli like experiences. Second, prior research on the accumulation of experiences focused on processes during the knowledge acquisition phase, such as effects of the serial position of stimuli during sequential evaluation (e.g., primacy/recency effects; Ghoshal et al. 2015, Zellner et al 2002). Our research question differs substantially from these studies by examining what happens after, not during, the knowledge acquisition phase. By comparing more experienced with less experienced consumers, our inquiry extends previous work by examining whether and how the distributional information of past experiences affects enjoyment, *after* knowledge is acquired.

Existing theories make conflicting predictions as to which past experience(s) consumers might use as comparison standards to gauge enjoyment and how this comparison may boost sensitivity for hedonic value. These will be outlined next.

Possible Comparison Standards Derived from Past Experiences

This section outlines several prior theories about how consumers draw on knowledge, derived from past experiences, to determine the value of novel stimuli. We caution the reader to bear in mind that many of these theories (e.g., adaptation level theory, evaluability theory, decision-by-sampling theory) have been exclusively been tested using numeric, or other one-dimensional stimuli (e.g., sizes). As such, to the best of our knowledge,

our investigation is the first to examine whether these theories predictions generalize to the domain of hedonic experiences.

Comparing the new experience to the average past experience. The "average" past experience might serve as a comparison standard when evaluating new experiences (Adaptation Level Theory; Helson 1964). As such, coffee drinkers may judge whether a new coffee is more or less enjoyable than their average coffee experience. This comparison process could sensitize enjoyment to the hedonic value of the new experience. Because more experienced consumers (vs. less experienced consumers) have a better sense (vs. worse sense) of the average hedonic value, they might be more sensitive to the hedonic value of experiences.

Recent work, however, suggests that experiences are evaluated inherently differently than one-dimensional stimuli like prices or other numeric values. Experience theory proposed that instead of a typical "average" or "zero" reference point for choices on money, reference points for experiences are set at more extreme outcomes. In domains where stimuli are positively valenced (inherently pleasurable as compared to aversive) consumers use their most enjoyable past experience as a comparison standard (Experience Theory; Martin et al. 2016). For instance, when evaluating tasty desserts, the best possible dessert served as the comparison standard, not the average dessert. Because more experienced consumers (vs. less experienced consumers) have a better sense (vs. worse sense) of the maximum hedonic value, they might be more sensitive to the hedonic value of experiences.

Comparing the new experience to the best and worst past experience. Evaluability theory (Hsee et al. 1999) and range theory (Volkman 1951) showed that information about the range of numeric values in the marketplace was crucial to boost people's sensitivity for the size of new numeric values. As such, coffee drinkers may gauge how much better or worse the new coffee is compared to their all-time best and worst coffee experiences. This comparison process could enable consumers to pinpoint the hedonic value of the present experience. And the broader consumers' range of past experiences, the more fine-tuned their judgement of hedonic value (Hsee and Zhang 2010). Because more experienced consumers (vs. less experienced consumers) have a broader (vs. narrower) range of past experiences, they might be more sensitive to the hedonic value of experiences.

Determining the rank of the new experience within the distribution of past experiences. Ranking-theories, in the broadest sense, suggest that information about the rank of a value within the distribution boosts sensitivity for the size of values (decision-by-sampling theory, Stewart, Chater, and Brown 2006). According to this work, people compute the value of a stimulus by forming a set of ordinal comparisons with similar stimuli they retrieve from memory. The outcome of these ordinal comparisons determines the rank of an option within the overall distribution and thereby its value. Ranking-theories also suggest that the skewedness of the distribution is incorporated in the value judgement (range-frequency theory, Parducci 1963). Because more experienced consumers (vs. less experienced consumers) can compute the rank more precisely (vs. less

precisely), they might be more sensitive to the hedonic value of experiences.

In sum, the above outlined theories suggest that certain past experiences are chronically retrieved as comparison standards (the average, Helson 1964; the best and worst past experience, Hsee and Zhang 2010; the best experience, Martin et al 2016), or that the entirety of past experiences might be important (Parducci 1963; Stewart et al. 2006). Next, we will outline two theoretical streams that suggest that comparison standards are retrieved flexibly, depending on the nature of the target stimulus.

Hedonic contrast. Past work has shown that when people make comparative judgements, they sometimes retrieve experiences from memory that are dissimilar to the target (i.e., dissimilarity-testing, hedonic contrast; Fechner 1898; Ghoshal et al. 2014; Zellner et al. 2006). Dissimilar experiences in this context are defined as past experiences that are at the opposite end of the hedonic value spectrum than the target experience. Comparisons to dissimilar past experiences trigger hedonic contrast because people tend to place their evaluation of the new experience away from the comparison standard (Mussweiler 2003) which may increase value sensitivity. For instance, when judging the enjoyability of a moderately pleasant orange juice, participants compared this experience to an extremely unpleasant orange juice they had sampled before (Zellner et al. 2006). Vice versa, and consistent with the account of Martin and colleagues (2016), a simple piece of chocolate cake was less pleasurable for consumers who had travelled around the world (vs. consumers who were less well traveled) because this mundane experience paled in comparison to past extraordinary vacations and holidays (Quoidbach et al. 2015).

Theories on hedonic contrast may suggest that coffee drinkers retrieve a comparison standard that is opposite to the target coffee they are tasting right now. Consumers who are tasting a flavorful coffee might contrast it away from their all-time worst coffee experience ("This tastes so much better than this abysmal coffee I had once."). In contrast, consumers who are tasting a poor coffee might contrast it away from their all-time best coffee experience ("This tastes so much worse than this amazing coffee I had once."). Because more experienced consumers (vs. less experienced consumers) are better able (vs. less able) to contrast to dissimilar past experiences, they might be more sensitive to the hedonic value of experiences.

Hedonic Assimilation. An alternative process proposes that people retrieve experiences from memory that are similar to the target when making comparative judgments (e.g., similarity-testing; hedonic assimilation, Gentner and Markman 1994, Medin, Goldstone, and Gentner 1993; Mussweiler 2003). Similar experiences in this context are defined as past experiences that are of similar hedonic value than the target experience. Comparisons to similar past experiences trigger hedonic assimilation as people tend to place their evaluation of the new experience towards the similar comparison standard (Mussweiler 2003) which may boost value sensitivity. For instance, when judging their level of physical fitness, participants compared themselves to someone they perceived to be similar to themselves – their best friend (Mussweiler and Rüter 2003).

Theories on hedonic assimilation may suggest that coffee drinkers retrieve a comparison standard that is similar to a target coffee they are currently tasting. Consumers who are tasting an elite coffee might

assimilate it towards their all-time best coffee experience ("This tastes as great as this other great coffee I had once."). In contrast, consumers who are tasting a poor coffee might assimilate it to their all-time worst coffee experience ("This tastes as bad as this abysmal coffee I had once."). Because more experienced consumers (vs. less experienced consumers) are better able (vs. less able) to assimilate to similar past experiences, they might be more sensitive to the hedonic value of experiences.

Overview of Studies

Five studies tested whether and how consumers compared a target experience with their past experiences. We aimed to answer two questions: a) Do past experiences affect enjoyment of new experiences? b) Which past experience serves as the comparison standard when evaluating present enjoyment (e.g., the average, the minimum, the maximum, similar or dissimilar experiences, the rank)? Study 1 took a correlational approach. We measured knowledge by asking participants to indicate the distribution of their past experiences with gaming apps using a distribution builder. We then explored which feature of their distribution of past experiences (range, sum, or average) would predict sensitivity to the hedonic value of two new gaming apps at a later point. We find that only the range, but not other distribution statistics, predicted sensitivity. Study 2 replicates this finding in an experimental paradigm. We manipulated knowledge by letting participants accumulate a range of previous experiences with drawings (more vs. less relevant range) and examined how it would affect sensitivity to the hedonic value of a drawing gift they received at a later point.

Studies 3a - 4 elucidate why a broad range of experiences increases sensitivity for hedonic value. Specifically, we examined which comparison standard is retrieved from a broad range of past experiences to gauge present enjoyment. Study 3a manipulated the sum of past experiences (six vs. 15) while holding the range constant. We find that sensitivity to hedonic value was independent of the sum of past experiences, and hence the relative rank of the target experience within the distribution. The evidence instead suggests that consumers assimilated their enjoyment of the target to similar past experiences. Study 3b manipulated the range of past experiences (more vs. less broad) while holding the sum constant. We find that sensitivity to hedonic value varied between participants who had seen a more vs. less broad range of experiences. This pattern of results raises doubts as to whether participants computed the rank of the target experience or compared it to an average experience. Study 3c examined how sensitivity for hedonic value develops over time. Participants were only sensitive to the hedonic value of a target after, but not before, they had acquired similar experiences.

Study 1

Study 1 explored how the distribution of consumers' past experiences with gaming apps affected their enjoyment of two target games. We measured the participants' past experiences with gaming apps with a distribution builder. This tool instructed participants to allocate balls in a distribution matrix. Each ball represented one gaming app that they had played in the past. The distribution builder thus allowed us to compute

several descriptive statistics about the nature of participants' past experiences (e.g., the sum, the average, as well as the range and standard deviation of their past experiences). Besides completing the distribution builder, the participants also rated their enjoyment of two target games of different hedonic value. One of the games was considered less enjoyable (lower hedonic value); the other one more enjoyable (higher hedonic value; stimuli are depicted in the appendix).

By using this experimental design, we are able to examine which feature of the distribution of past experiences with gaming apps (the sum, the average, the range) predicts sensitivity for hedonic value (differences in enjoyment of games of lower vs. higher hedonic value). Importantly, study 1 also manipulated whether the distribution builder was completed before or after evaluating the target games. This served to ensure that potential correlations between the features of the distribution of past experiences and present enjoyment were not due to artificially activating the distribution beforehand.

Sum. We computed the overall sum of gaming apps played. Consumers with a greater number of past experiences should have more expertise about gaming apps (Alba and Hutchinson 1987). If more past experiences lead to greater value sensitivity, then the overall number of past experiences (the sum) should predict whether consumers' present enjoyment is sensitive to hedonic value.

Average hedonic value. We computed the average hedonic value of all past gaming apps played. Specifically, the arithmetic average. Consumers might compare whether the present games are better or worse

than their "average" past gaming experience (Helson 1965). If consumers compare to past average experiences to gauge present enjoyment, then the average should predict whether consumers' present enjoyment is sensitive to hedonic value.

Range. We computed the range of gaming apps that each participant had played by subtracting the minimum from the maximum value. As a proof of concept, we also computed the standard deviation of past hedonic value. The range and standard deviation capture whether consumers have accumulated a homogeneous or heterogeneous set of past experiences with gaming apps. Range information enables participants to compare the target games to the least and most enjoyable games they have experienced (Hsee and Zhang 2010). Consumers with a more (vs. less) broad range of past experiences should be able to represent the target games in a more fine-grained manner. If consumers use range information to gauge present enjoyment, then the range of past experiences (i.e., the standard deviation of past experiences) should predict whether consumers' enjoyment is sensitive to hedonic value.

Design and procedure

Study 1 measured the distribution of participants' past experiences with gaming apps and assessed their enjoyment of two target gaming apps of different hedonic value (lower vs. higher). Hedonic value was manipulated within-subjects because each participant saw both target gaming apps. We manipulated between-subjects whether past experiences were measured before or after evaluating the target games. Due to the logistics of the laboratory, undergraduate students could sign up to

participate in the experiment on three consecutive workdays in return for partial course credit. We aimed to collect as many participants as possible.

On the first page of the survey, participants indicated their gender. The female participants (n = 161; M_{age} = 20.07, SD_{age} = 1.69) proceeded to the survey while the male participants (n = 239) were redirected to an alternative study. We only collected females to avoid systematic biases from potential gender differences in gaming habits (Veltri et al. 2014).

The distribution of past experiences was measured with a distribution builder (André 2016). We first familiarized all participants with the tool by showing them several example distributions of consumers' past experiences with movies. After reading the instructions, they were randomly assigned to one of two order conditions. They indicated the distribution of their past experiences with video games *before* or *after* they rated their enjoyment of two target games.

Measuring the distribution of past experiences. At the beginning of the distribution builder task, the participants indicated whether they had ever played gaming apps in their life (yes vs. no). Participants who indicated "no" (n = 11) were redirected and did not complete the distribution builder task. We coded the range and sum variables as "0" for these participants. The average and standard deviation were coded as missing values. Participants who indicated "*yes*" proceeded to the distribution builder interface. The distribution builder interface depicted a horizontal axis with ten enjoyment categories (1 = horrible to 10 = world class; figure 3). The participants could allocate and remove up to ten balls in each enjoyment category through mouse clicks. Each ball represented one gaming app they had played. At the beginning of the task, the

distribution builder contained no balls. However, the participants could allocate as many balls as needed but at most 100 balls to represent the distribution of their past gaming app experiences. We computed two statistics to capture the range of past experiences from each participant's answers (figure 2): The range, and standard deviation. We also assessed the sum and the average hedonic value of all past experiences. As expected, these variables were highly correlated (table 1).

Figure 3: Example distributions of past experiences with gaming apps

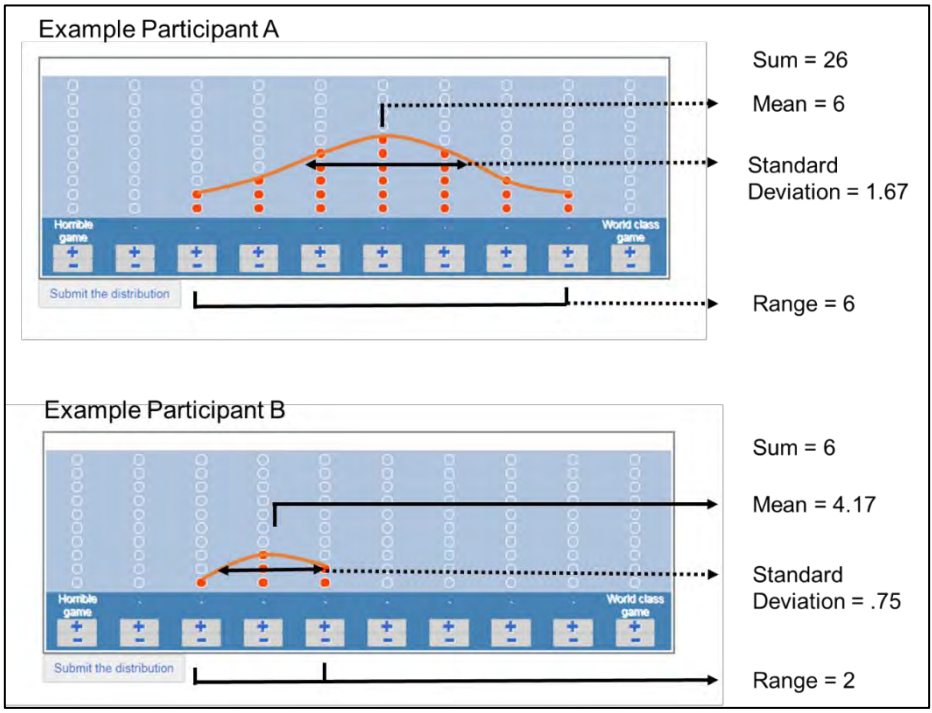


Table 1: Correlations of descriptive statistics

	Sum	Average	Range	Standard Deviation
Sum (M =13.58, SD= 10.08)	1	-.142	.642**	.502**
Average (M =6.21, SD = 1.16)	-.142	1	-.334**	-.325**
Range (M = 6.31, SD = 2.91)	.642**	-.334**	1	.950**
Standard Deviation (M = 1.78, SD = 0.95)	.502**	.502**	.950**	1

**$p < .01$

Enjoyment of target games. The participants watched two short screen recordings which introduced two gaming apps (Slime Laboratory vs. Dedal 4). Each video was about one minute long and contained no sound. Presentation order was randomized. The two games were selected to be as similar as possible. Both required the player to navigate a green monster through a maze to complete a level (see appendix). Although the gameplay was similar, the games' hedonic value differed. One of the games was of higher hedonic value (Slime Laboratory: 84% enjoyment rating on addictinggames.com) than the other (Dedal 4: 24% enjoyment rating on addictinggames.com). After watching both videos, the participants indicated how much they enjoyed each game on two 10-point scales (1 = horrible game to 10 = world class game). We randomized the presentation order of the scales.

Results

We tested which descriptive statistic of the participants' distribution of past experiences would predict sensitivity for hedonic value. In other words, which statistic would account for the degree of differentiation between the target games? To do so, we regressed each distribution statistic separately on enjoyment. If a distribution statistic predicts sensitivity, a significant 2-way interaction between the distribution statistic and the hedonic value of the target game (lower vs. higher; Slime Laboratory vs. Dedal 4) should emerge when predicting enjoyment.

We computed separate mixed linear models for each of the four distribution statistics (table 2). We regressed enjoyment on the distribution statistic (range *or* standard deviation *or* sum *or* average; each was centered), the dummy for hedonic value (lower vs. higher), the dummy for order (distribution builder first vs. games first), and all interactions. Hedonic value was the within-subjects variable. Three models suggested that there was no evidence for a 3-way interaction between hedonic value, order, and distribution statistics (all $p > .27$). Only the model using the average as a predictor revealed a marginally significant 3-way interaction ($p = .09$). More importantly, the focal two-way interaction between hedonic value and the distribution statistic was significant in the regression models using range and standard deviation as predictors (all $p < .08$). These focal interactions were insignificant in the regression models using the sum or average as predictors (all $p > .26$).

To decompose the two-way interactions, we examined the effect of hedonic value (lower vs. higher) on enjoyment among those with a less (-1SD) versus more broad (+1SD) range of past experiences. We conducted

this spotlight analysis two times: Once for the model using the range and once for the model using the standard deviation as the independent variable (table 2; columns 1 and 2). We first report the results for the range. Participants' enjoyment was more sensitive to hedonic value (the difference in enjoyment of Dedal 4 and Slime laboratory was larger) when they had consumed a more broad (+1SD; $\beta = -1.49$, $t(144) = -4.05$, $p < .001$) rather than a less broad range of games (-1SD; $\beta = -.552$, $t(144) = -1.57$, $p = .118$). This effect replicated when using the standard deviation as the independent variable. Participants' enjoyment was more sensitive to hedonic value when they had consumed a more heterogeneous (+1SD; $\beta = -1.61$, $t(144) = -4.32$, $p < .001$) rather than less heterogeneous set of gaming apps (-1SD; $\beta = -.431$, $t(144) = -1.20$, $p = .231$). All reported findings for the models using range and standard deviation as predictors were robust to the inclusion of the sum and average statistics as covariates.

Table 2: Mixed linear regression models predicting enjoyment from distribution statistics, hedonic value and order

Dependent Measure: Enjoyment

Statistic	Range		Standard Deviation		Sum		Average	
	β	*p*	β	*p*	β	*p*	β	*p*
Order (O)	-.150	.644	-.153	.638	-.152	.639	-.118	.712
Statistic (S)	.017	.851	.157	.587	-.017	.446	.411	.054
Value (V)	-1.02	<.001	-1.02	<.001	-1.00	<.001	-.986	<.001
S x O	-.051	.661	-.267	.457	.020	.549	-.320	.268
S x V	**-.161**	**.080**	**-.621**	**.033**	**-.026**	**.257**	**-.241**	**.264**
O x V	-.304	.349	-.304	.348	-.343	.293	-.322	.327
OxVxS	.057	.623	.394	.272	-.011	.733	.509	.085
AIC	1203.98		1193.36		1215.19		1196.11	

Discussion

Study 1 explored which feature of the distribution of consumers' past experiences with gaming apps would predict sensitivity to hedonic value. In other words, which descriptive statistic would be related to the degree of differentiation between the two gaming apps? The results support the idea that participants with a more broad (vs. less broad) range of experiences with gaming apps were more sensitive to hedonic value. Participants who had experienced a more heterogeneous set of gaming apps enjoyed a game of lower hedonic value less than a game of higher hedonic value. Participants with a more homogeneous set of gaming experiences enjoyed the two target games equally. The results also suggest that sensitivity was only predicted by distribution features that captured the range of past experiences (range and standard deviation) but not distribution features not directly related to range (sum and average hedonic value). As such, the results raise doubts as to whether consumers compare new experiences with the average experience and whether the quantity of past experiences is inherently important. In sum, study 1's findings demonstrate that the breath of the experience range is important for sensitivity.

Study 2

The results of study 1 suggest that consumers with a more broad (vs. less broad) range of experiences were more sensitive to hedonic value. However, because study 1 measured the independent variables, our findings could have been caused by an unobserved third variable (e.g., extreme

response style; Arthur and Freemantle 1966). Study 2 was designed to conceptually replicate study 1's results by manipulating, instead of measuring, the range of consumers' past experiences.

We predicted that participants' enjoyment of art would be more (vs. less) sensitive to an artwork's hedonic value when they had accumulated a range of more relevant experiences with art (vs. less relevant alternative experiences). Study 2 therefore manipulated the participants' prior experiences with art by randomly assigning them to see 15 drawings (more relevant experiences) or 15 photographs of animals (less relevant experiences). After this knowledge acquisition phase, all participants evaluated one target drawing. We manipulated the hedonic value of the target drawing by randomly assigning participants to receive a drawing of lower or higher hedonic value. Their enjoyment of the target drawing served as our dependent measure.

Importantly, study 2 (and all subsequent studies) administered a filler task between the knowledge acquisition phase and the evaluation of the target drawing. Our inquiry examined whether consumers would retrieve past experiences as comparison standards when evaluating a new experience. To create an experimental setup that enabled us to test these effects, it was crucial to introduce temporal delay between the knowledge acquisition phase and the evaluation of the target experience.

Pretest

The pretest served to select drawing stimuli for the main study. We selected 22 black and white pencil drawings of mountain sceneries from the internet. Next, we assigned Mechanical Turk (MTurk) participants (n =

691) to see one of the 22 drawings. On a slider scale from 0 (I do not enjoy it at all) to 100 (I enjoy it very much), they rated how much they enjoyed the drawing. We used the average enjoyment score as a proxy for each drawing's hedonic value.

As a first step, we selected drawings for the knowledge acquisition phase. We ranked all pretested drawings according to their hedonic value (i.e., their average enjoyment score). To ensure that the participants could accumulate a broad range of experiences in the main study, we selected the three drawings with the lowest hedonic value ($M_{enjoyment}$ =58.63 – 63.03), the three drawings with the highest hedonic value ($M_{enjoyment}$ = 81.03 – 84.48), and nine drawings of average hedonic value ($M_{enjoyment}$ = 68.06 – 76.03).

As a next step, we selected the two target drawings. We wanted to ensure that the two target drawings would differ greatly in hedonic value. We thus selected the drawing with the fourth highest enjoyment rating as the higher value target ($M_{enjoyment}$ = 79.53). The drawing with the fourth lowest enjoyment rating constituted the lower value target ($M_{enjoyment}$ = 66.03). All drawings used in the main study are depicted in the appendix.

Design and procedure

Study 2 manipulated the participants' prior experiences (more relevant vs. less relevant range) and the hedonic value of a target drawing (lower vs. higher) in a 2X2 between-subjects design. Two-hundred and seven MTurk participants believed to take part in a study on visual stimuli (135 females; M_{age} = 36.86, SD_{age} = 13.78).

At the beginning of the study, participants were randomly assigned to one of the two knowledge acquisition conditions. In the relevant range condition, they looked at 15 drawings, ostensibly created by students in a university drawing course. Participants in the irrelevant range condition looked at 15 animal photographs. The drawings and photographs were presented in random order, one by one, for five seconds each. After the knowledge acquisition phase, all participants completed five dot estimation filler tasks. Lastly, participants were informed that they would receive one drawing, created by one of the students in the university drawing course, as an extra reward for their participation. This drawing could be downloaded as a jpeg file at the end of the study. All participants saw a loading circle that ostensibly randomly selected one drawing for them from the pool of available drawings. After the participants were randomly assigned to receive either a drawing of lower or higher hedonic value, they were instructed to click on a link to inspect their gift. On the subsequent page, we measured enjoyment with three items: How happy are you that you received this drawing? (1 = not happy at all to 9 = extremely happy), How much do you enjoy your drawing? (1 = do not enjoy it at all to 9 = enjoy it extremely), and How pleased are you with your drawing? (1 = not pleased at all to 9 = extremely pleased). These were averaged to form a measure of enjoyment ($\alpha = .96$; $M = 6.06$, $SD = 2.04$).

As a last step, we included an attention check to ensure that the participants had indeed inspected the drawing by clicking on the link. For the attention check, we showed a picture of the participant's respective drawing gift and asked: "Was this the drawing you received as a gift?". Participants answered on a categorical scale (1 = Yes, I received this

drawing, 2 = I am not sure, 3 = No, I received another one). We excluded 41 participants from future analyses who either indicated "No, I received another one" or "I am not sure". These participants had probably not inspected the drawing prior to evaluating it. This left 166 participants for our analyses (as expected, the results are descriptively similar but weaker when participants who failed the attention check were included in the below analysis).

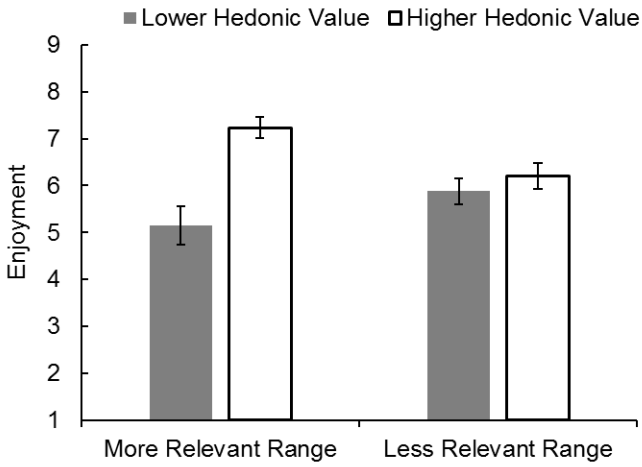
Results

A 2X2 analysis of variance was conducted in which we examined the main effects of prior experiences (more relevant vs. less relevant range), hedonic value (lower vs. higher), and their interaction on enjoyment. We observed no main effect for the experience condition ($F(1, 162) = .238$, $p = .626$, $\eta^2 = .001$). As expected, a main effect for hedonic value emerged. The drawing of higher hedonic value was enjoyed more than the drawing of lower hedonic value ($M_{lower\_value} = 5.56$, $SD = 2.23$ vs. $M_{higher\_value} = 6.73$, $SD = 1.69$; $F(1, 162) = 15.77$, $p < .001$, $\eta^2 = .085$). More importantly, a significant interaction between experience condition and hedonic value emerged ($F(1, 162) = 8.38$, $p = .004$, $\eta^2 = .045$; figure 4).

Tests for simple effects indicated that participants' enjoyment was sensitive to the hedonic value of the target drawing when they had collected a more relevant range of experiences ($M_{lower\_value} = 5.14$, $SD = 2.50$ vs. $M_{higher\_value} = 7.24$, $SD = 1.49$; $F(1, 162) = 22.34$, $p < .001$, $\eta^2 = .121$). However, participants who had collected a less relevant range of experiences with animal photographs enjoyed the target drawings equally

(M_{lower_value} = 5.88, SD = 1.98 vs. M_{higher_value} = 6.21, SD = 1.74; $F(1, 162)$ = .612, p = .435, η^2 = .003).

Figure 4: Experience condition x hedonic value interaction on enjoyment.



Note: Error bars represent standard errors of the mean.

Discussion

The results of study 2 conceptually replicated study 1. Participants' enjoyment was more sensitive to the hedonic value of drawings when they had a broad range of more relevant experiences with drawings as compared to a broad range of less relevant experiences with animal photographs. In other words, participants took less joy in a drawing of lower as compared to higher value if they had experienced a broad range of drawings in the past. In contrast, participants who had only sampled animal photographs, and thus had less relevant prior experiences, enjoyed both drawings equally.

Study 3a

Study 3a was designed to provide process evidence. We aimed to test how consumers would compare their present experience with past experiences through moderation and by measuring how past enjoyment related to present enjoyment.

Study 1 showed that the range of consumers' past experiences, but not the sum or average, predicted sensitivity for hedonic value. We wondered whether having had many experiences, or moderate experiences would be critical to boost sensitivity for the target drawings of lower and higher hedonic value. In study 3a, we thus decided to create an experience condition where moderate experiences were absent in the knowledge acquisition phase, thereby removing average experiences, and reducing the overall number of experiences.

Study 3a randomly assigning participants to one of three knowledge acquisition conditions. Replicating study 2, they either saw 15 drawings or 15 photographs of animals. Extending beyond study 2, we included a condition where participants only saw the six drawings that were pretested to be similar to the two target drawings. Thus, they saw the three drawings of lower hedonic value and the three drawings of higher hedonic value but not the nine drawings of moderate hedonic value in the knowledge acquisition phase. After a filler task, all participants again received the target drawing of lower or higher hedonic value as a gift and indicated how much they enjoyed it.

The previously outlined theories make conflicting predictions about the participants' sensitivity for hedonic value in these conditions. By

removing (vs. keeping) drawings in the knowledge acquisition phase, we changed the relative rank of the target drawing within the distribution of past experiences. Range-frequency theories suggest that the subjective value of an item is determined by the range principle (distance of stimulus to the most extreme stimuli) and its relative rank (Parducci 1965[1]; Stewart et al. 2006; r = (R - 1)/(N - 1), where R is the rank within the sample of N items). If participants who had seen six drawings receive the target drawing of higher hedonic value, then 50% of their past drawings had lower hedonic value (vs. 80% for those who had seen all 15 drawings). Vice versa, if participants who had seen six drawings receive the target drawing of lower hedonic value, then 50% of their past drawings had lower hedonic value (vs. 20% for those who had seen all 15 drawings). If enjoyment is based on the relative rank of the target drawing *and* its distance to the range, then participants who had seen only six drawings (i.e., no drawings of moderate hedonic value) might be less sensitive than consumers who had sampled the whole distribution.

This design also served to test predictions from theories on hedonic assimilation and contrast. The study design provided participants in both relevant experiences conditions with similar past drawing experiences (past drawings of similar hedonic value than the target drawing) and dissimilar past drawing experiences (past drawings of dissimilar hedonic value than the target drawing). We aimed to test whether participants would gauge hedonic value by contrasting their evaluation of the target experience away

[1] In range–frequency theory, the subjective value of an item is a weighted sum of its rank within the immediate context and its position within the range set by the immediate context.

from dissimilar past experiences or assimilated their evaluation of the target experience towards similar past experiences.

To test whether these comparison processes might be at play, and if yes, which one, study 3a therefore moved beyond study 2 by measuring consumers' enjoyment in the knowledge acquisition phase. By investigating whether and how enjoyment in the past predicted present enjoyment, we are able to detect how the participants compared the target drawing with past drawings they had seen. If hedonic assimilation is the underlying process, then consumers should assimilate enjoyment to similar past experiences (i.e., past experiences of similar hedonic value). If hedonic contrast is the underlying process, then consumers should contrast enjoyment away from dissimilar past experiences (i.e., past experiences of opposite hedonic value).

Design and procedure

Study 3a manipulated the participants' prior experiences (relevant range [all drawings], relevant range [only similar and dissimilar drawings], irrelevant range) in the knowledge acquisition phase and altered the hedonic value of a drawing gift (lower vs. higher) in a 3X2 between-subjects design. Two-hundred and ninety-six prolific academic participants completed the study (172 females; M_{age} = 35.89, SD_{age} = 12.18).

Study 3a used the same procedure as study 2. Again, participants in the more relevant range all drawings condition saw all 15 mountain drawings (three lower hedonic value, nine moderate hedonic value, and three higher hedonic value) while those in the less relevant range condition saw 15 animal photographs. However, this time we also included a relevant

range only similar and dissimilar drawings condition in which participants only saw the three drawings of lower hedonic value and the three drawing of higher hedonic value, but no drawings of moderate hedonic value.

Study 3a assessed participants' enjoyment in the knowledge acquisition phase. For each photograph or drawing, participants indicated their enjoyment on a slider scale (1 = do not enjoy it at all to 100 = enjoy it extremely). The rest of the study followed the procedure of study 2. After the filler task, participants were randomly assigned to receive the drawing gift of lower or higher hedonic value as a gift. We assessed participants' enjoyment of their gift with the three items used in study 2 ($\alpha = .97$; $M = 5.93$, $SD = 2.20$). Lastly, we again included an attention check to ensure that the participants had inspected the drawing before evaluating it. We excluded 17 participants from future analyses who either indicated "No, I received another one" or "I am not sure" when asked "Was this the drawing you received as a gift?" because these participants had probably not inspected the drawing prior to evaluating it. This left 279 participants for our analyses.

Results

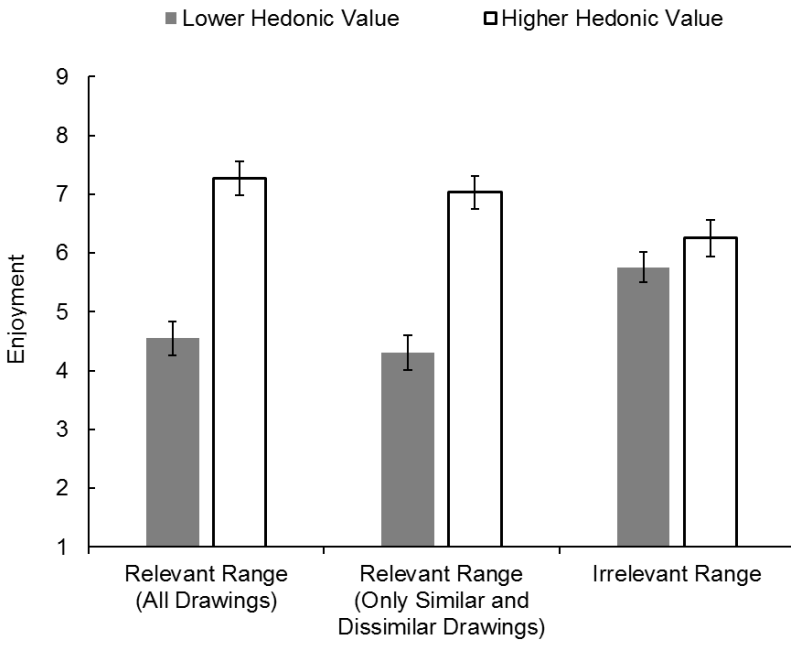
Enjoyment of target drawing. We conducted a 3X2 ANOVA to examine the main effects of experience condition (relevant range [all drawings], relevant range [only similar and dissimilar drawings], irrelevant range), hedonic value (lower vs. higher), and their interaction on enjoyment. We detected a significant main effect of hedonic value. The gift of lower hedonic value was enjoyed less than the gift of higher hedonic value ($M_{lower\_value} = 4.95$, $SD = 2.18$ vs. $M_{higher\_value} = 6.89$, $SD = 1.76$; $F(1,$

275) = 73.01, $p < .001$, $\eta^2 = .198$). There was no main effect for experience condition ($F(2, 275) = .736$, $p = .480$, $\eta^2 = .004$). Replicating study 1 and 2, we found a significant interaction between experience condition and hedonic value ($F(2, 275) = 10.25$, $p < .001$, $\eta^2 = .055$; figure 5).

Tests for simple effects indicated that participants who had seen all drawings differentiated strongly between the two gifts. Replicating study 2, they enjoyed the gift of lower hedonic value less than the gift of higher hedonic value ($M_{lower\_value} = 4.55$, $SD = 1.87$ vs. $M_{higher\_value} = 7.27$, $SD = 1.38$; $F(1, 275) = 46.74$, $p < .001$, $\eta^2 = .167$). In contrast, participants with an irrelevant range of experiences with animal photographs enjoyed the two drawings equally ($M_{lower\_value} = 5.76$, $SD = 2.14$ vs. $M_{higher\_value} = 6.25$, $SD = 1.92$; $F(1, 275) = 1.51$, $p = .220$, $\eta^2 = .006$). Extending beyond study 2, participants who had only seen drawings that were similar or dissimilar to the target drawing also differentiated strongly between the two gifts ($M_{lower\_value} = 4.30$, $SD = 2.26$ vs. $M_{higher\_value} = 7.04$, $SD = 1.86$; $F(1, 275) = 45.05$, $p < .001$, $\eta^2 = .165$).

Next, we tested whether hedonic enjoyment differed between participants in the relevant range conditions (all drawings vs. only similar and dissimilar drawings). Casting doubt as to whether enjoyment was based on the relative rank of the target drawing, we detected no differences in sensitivity for hedonic value. The target drawing of lower hedonic value ($F(1, 275) = .360$, $p = .549$) and the target drawing of higher hedonic value ($F(1, 275) = .345$, $p = .557$) were equally enjoyed among participants who had seen similar and dissimilar drawings versus all drawings.

Figure 5: Experience condition x hedonic value interaction on enjoyment



Notes. Error bars represent standard errors of the mean

Assimilation vs. contrast. We examined whether those participants who had seen drawings in the knowledge acquisition phase (vs. animal photographs) were more sensitive to hedonic value because they engaged in hedonic assimilation or hedonic contrast. Hedonic assimilation suggests that consumers assimilated their enjoyment of the target drawing to similar past drawings - drawings that were similarly (un)enjoyable as the target drawing ("This drawing is as (un)enjoyable as this other similar drawing I have seen before"). However, participants had also seen drawings that were dissimilar to their target drawing in the knowledge acquisition phase (drawings at the opposite end of the hedonic value spectrum). As such, it

also possible that participants who had seen drawings in the knowledge acquisition phase were more sensitive to hedonic value because they contrasted present enjoyment away from dissimilar past drawings (i.e., hedonic contrast "This drawing is much more [less] enjoyable than this other drawing I have seen before").

Study 3a set out to test which of these two comparison processes would predict present enjoyment. To do so, we regressed the participants' enjoyment of the target drawing on their enjoyment of the similar and dissimilar drawings during the knowledge acquisition phase. In this way, we pitted the two comparison processes against each other. If hedonic assimilation is the underlying processes, we should detect a positive association between present enjoyment and the enjoyment of similar past experiences. If hedonic contrast is the underlying process, we should detect a negative association between present enjoyment and the enjoyment of dissimilar past experiences. If both mechanisms are at play, both the assimilation and contrast effects should be present.

First, we created two variables that captured participants' enjoyment of similar and dissimilar drawings in the knowledge acquisition phase. We identified each participants' enjoyment scores for the three drawings that the pretest had categorized as having lower and the three drawings that the pretest had categorized as having higher hedonic value. We averaged each participants' enjoyment score separately for these drawings ($M_{knowledgeacquisitionphase\_lowervalue}$= 42.80, SD = 20.19, α = .67; $M_{knowledgeacquisitionphase\_highervalue}$ = 85.48, SD = 14.24, α = .71). Next, we recoded these variables into two new variables that captured participants' enjoyment of *similar* and *dissimilar* past experiences. For instance, if a

participant had received a higher value target drawing, the average enjoyment of the three higher value drawings in the knowledge acquisition phase would constitute the similar past experiences. The average enjoyment of the three lower value drawings in the knowledge acquisition phase would constitute the dissimilar past experiences. And vice versa for participants who had received a lower value drawing.

To test our hypothesis, we regressed enjoyment of the target drawing on the past enjoyment of similar and the past enjoyment of dissimilar drawings. Supporting the hedonic assimilation process, the model revealed a positive association between present enjoyment and past enjoyment of similar drawings ($\beta = .645$, $t(182) = 10.95$, $p < .001$, partial $r = .630$). Casting some doubt on the possibility that present enjoyment was driven by hedonic contrast, there was no negative association between present enjoyment and past enjoyment of dissimilar drawings ($\beta = -.044$, $t(182) = -.745$, $p = .457$, partial $r = -.055$).

Next, we tested whether participants engaged in hedonic assimilation independent of which knowledge acquisition condition they had completed (all drawings vs. only similar and dissimilar drawings). It might be possible that the comparison strategy differed between the conditions. We therefore regressed present enjoyment on past enjoyment of similar drawings, past enjoyment of dissimilar drawings, a condition dummy (relevant range [all drawings] vs. relevant range [only similar and dissimilar drawings]), and all interactions. As expected neither the three-way, nor any of the two-way interactions were significant (all $p > .420$). We can thus uphold the conclusion that participants who had seen all relevant

drawings and participants who had only seen dissimilar and similar drawings assimilated enjoyment to similar past experiences.

Discussion

Study 3a replicated the findings of study 2. Consumers who had collected a relevant range of experiences with 15 drawings were more sensitive to the hedonic value of a target drawing than consumers who had collected an irrelevant range of experiences with 15 animal photographs. Extending study 2, we demonstrated which past experiences were driving the effects on enjoyment through moderation and measurement.

Consistent with study 1, not the quantity but the range of past experiences increased sensitivity for the hedonic value of a target drawings. We created the "only similar and dissimilar drawings" condition that held the variety (range) of experiences constant but reduced the number of experiences from 15 to six. Although these participants had collected fewer experiences, they were more sensitive to the hedonic value of the target drawing than inexperienced consumers. The finding that their sensitivity was not diminished by removing moderate experience raises doubts as to whether the relative rank of an experience is incorporated when gauging enjoyment.

We also demonstrated how consumers used their past experiences with drawings to gauge their enjoyment of the target drawing. Because we presented similar and dissimilar experiences, hedonic contrast and/or assimilation effects could have been at play. We found that the participants assimilated present enjoyment to similar drawings they had seen in the

knowledge acquisition phase. Our findings are inconsistent with the possibility that sensitivity was driven by hedonic contrast.

Study 3b

The results of study 3a suggest that not the number, or the rank, but the range, of past experiences was crucial to boost sensitivity for hedonic value. Even though some of the participants had collected relatively few experiences, they were sensitive to hedonic value because the range of their past experiences included drawings that were similar to the target drawing. And they used those similar past drawings as assimilation standards. If people are sensitive to hedonic value because they assimilate enjoyment to similar past experiences, then removing similar past experiences from the knowledge acquisition phase should eliminate this effect.

Study 3b further tested the proposed process by manipulating the range of past experiences while holding the number of experiences constant. We randomly assigned participants to look at a more broad range of 15 drawings (three lower hedonic value, nine moderate hedonic value, three of higher hedonic value) or a less broad range of 15 drawings of moderate hedonic value. Then, participants judged how much they enjoyed the target drawing of lower and higher hedonic value that they received as a gift.

Consistent with study 1, we predicted that consumers with a less broad range of experiences would be less sensitive to the hedonic value of the target drawings than consumers with a more broad range of experiences. People with a broader range of experiences can assimilate

enjoyment to similar past experiences ("This drawing is as [un]enjoyable as this similar other drawing I have seen before"). For consumers with a less broad range of experiences it is more difficult to assimilate given the absence of similar past experiences. Because they might not be able to engage in hedonic assimilation, their enjoyment of the target drawing may be less sensitive to the hedonic value of the target drawing.

The design of study 3b again served to rule out that consumers with a broader range of experience were more sensitivity to hedonic value because they used alternative strategies to gauge enjoyment. Both participants with a less broad and a more broad range of experiences can compare whether the target drawing is better or worse than the "average" drawing they have seen. The target drawing of lower hedonic value should be worse than the average and diminish enjoyment. The target drawing of higher hedonic value should be better than the average and boost enjoyment. Both participants with a less broad and a more broad range of experiences can compute the rank of the target drawing within their distribution of past experiences. If enjoyment is, to some extend (Parducci 1965; Stewart et al. 2016) based on the relative rank of an experience within the distribution, consumers in the less broad range condition should very much enjoy the higher value target drawing because it ranks highest. They should not so much enjoy the lower value target drawing because it ranks lowest.

If present enjoyment is based on the rank of an experience or its hedonic value relative to an average, then we might not detect an interaction effect between experience condition and hedonic value on enjoyment. Rather, because participants in both experimental conditions

can compare to the "average" or rank their experiences, all participants should be equally sensitive to hedonic value.

Design and procedure

Study 3b manipulated the range of participants' prior experiences (less vs. more broad) and the hedonic value of a drawing gift (lower vs. higher) in a 2X2 between-subjects design. Undergraduate students completed the study in return for course credit in a behavioral laboratory. Due to the logistics of the laboratory, participants could sign up for the study on three consecutive workdays. We aimed at collecting as many participants as possible. At the end of day three, one-hundred and ninety-three participants had completed the study (58 females; M_{age} = 19.17, SD_{age} = 1.87).

Participants believed to take part in a mix of unrelated studies that had been combined for convenience. Study 3b used the same procedure as study 2. Participants in the more broad range condition saw 15 mountain drawings (three lower hedonic value, nine moderate hedonic value, three higher hedonic value) while those in the less broad range condition saw 15 drawings of moderate hedonic value (stimuli are depicted in appendix). We kept the overall number of drawings constant to rule out that our results could be attributed to differences in the overall number of prior experiences that they had accumulated. As in study 2, participants were instructed to look at the drawings but did not give any ratings. We did not measure the participants' enjoyment in the knowledge acquisition phase to rule out that our results were caused by training participants how to use the enjoyment scale (e.g., Anderson 1975; Parducci 1965). The rest of the study followed

the procedure in study 2. After the filler task, participants were randomly assigned to open one of two envelopes which contained a drawing gift that they could take home as an extra reward for their participation. We printed and framed the drawings to give people a "real" physical product to evaluate. The envelopes contained the same two drawings, one of higher and one of lower hedonic value, utilized in our prior studies.

We assessed participants' enjoyment of their gift with the three item: How happy are you with this drawing, How much do you like this drawing, and How beautiful is this drawing? (1 = not at all to 9 = extremely). These were averaged to create an index of gift enjoyment (α = .85, M = 6.19, SD = 1.61). Lastly, we again included an attention check to ensure that the participants had inspected the drawing before evaluating it. We excluded five participants from future analyses who either indicated "No, I received another one" or "I am not sure" when asked "Was this the drawing you received as a gift?". These participants had probably not inspected the drawing prior to evaluating it or opened the wrong envelope. This left 188 participants for our analyses.

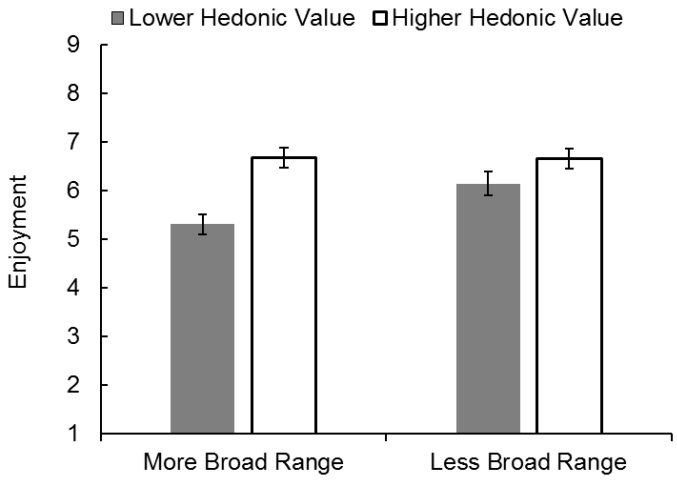
Results

We conducted a 2X2 analysis of variance to examine the main effects of range (less vs. more broad), hedonic value (lower vs. higher), and their interaction on gift enjoyment. We detected a significant main effect for hedonic value. The gift of lower hedonic value was enjoyed less than gift of higher hedonic value (M_{lower_value} = 5.71, SD = 1.53 vs. M_{higher_value} = 6.75, SD = 1.45; $F(1, 184) = 23.63$, $p < .001$, $\eta^2 = .109$). There was a marginal main effect for range condition ($M_{broadrange}$ = 6.04, SD = 1.47 vs.

$M_{narrowrange}$ = 6.41, *SD* = 1.66; $F(1, 184) = 2.91$, $p = .090$, $\eta^2 = .013$). Casting doubt as to whether ranking or comparison to the average boosted sensitivity for hedonic value, we detected a significant interaction between range and hedonic value ($F(1, 184) = 5.94$, $p = .016$, $\eta^2 = .027$; figure 6).

Tests for simple effects indicated that participants with a broader range of experiences differentiated strongly between the two gifts. They enjoyed the gift of lower hedonic value significantly less than the gift of higher hedonic value (M_{lower_value} = 5.27, *SD* = 1.48 vs. M_{higher_value} = 6.82, *SD* = 1.46; $F(1, 184) = 26.91$, $p < .001$, $\eta^2 = .146$). Participants who had only seen moderate drawings were less sensitive to the hedonic value of the target drawings (M_{lower_value} = 6.16, *SD* = 1.46 vs. M_{higher_value} = 6.67, *SD* = 1.45; $F(1, 184) = 2.91$, $p = .090$, $\eta^2 = .016$).

Figure 6: Range x hedonic value interaction on enjoyment



Notes. Error bars represent standard errors of the mean.

Discussion

Study 3b provided process evidence by showing that participants who had seen a less broad range of drawings of moderate hedonic value were less sensitive to the hedonic value of the target drawing than participants who were exposed to a more broad range. The observed difference in sensitivity provides indirect support for the hedonic assimilation account. Participants in the less broad range condition had not seen drawings that were similar to the target drawings but participants in the more broad range condition did. Because participants with a more broad range of experiences could engage in hedonic assimilation, while participants with a less broad range of experiences could not, we may have observed differences in sensitivity. The results of study 3b are less consistent with the possibility of comparison strategies like ranking, or adaptation level theory. Consumers in the less broad range condition could have used these strategies to gauge hedonic enjoyment. Even if they did, these strategies seemingly boosted sensitivity for hedonic value to a lesser extent than assimilation to similar prior experiences.

Study 3c

Our theory posits that consumers are more (vs. less) sensitive to the hedonic value of an experience when they can (vs. cannot) assimilate enjoyment to similar past experiences. In all previous studies, we measured or manipulated whether consumers had or lacked similar past experiences that could serve as assimilation standards. Study 3c investigates how people's enjoyment of a target experience changes over time. If consumers

build up assimilation standards over time when they accumulate experiences, then their enjoyment of an experience should be more sensitive to the hedonic value of the experience later as compared to earlier in the knowledge acquisition phase.

Study 3c pursued several goals. The major goal was to elucidate how consumers built up assimilation standards during the knowledge acquisition phase. In studies 2-3b, we showed participants three drawings of higher and three drawings of lower hedonic value at random points in time during the knowledge acquisition phase. Past research shows that consumers need to accumulate experiences repeatedly (e.g., "less enjoyable drawings") before they use them as assimilation standards (Hintzman and Ludlam 1980; Smith and Zarate 1990). If this is the case, then consumers should be less sensitive to the hedonic value of a target experience in the beginning as compared to later during the knowledge acquisition phase. Presumably, because they can assimilate later in the knowledge acquisition phase, when they already had similar experiences, but not earlier in the knowledge acquisition phase, when they do not yet have similar experiences.

An additional goal of study 3c was to replicate the assimilation pattern between past and present enjoyment from study 3a. We predicted that consumers who accumulated experiences that were similar (similar hedonic value) and dissimilar (at the opposite end of the hedonic value spectrum) to a target experience would assimilate present enjoyment to similar past experiences as compared to contrast enjoyment away from dissimilar past experiences. Lastly, we aimed to replicate our findings in a new product category: handmade crocheted doilies.

We predicted that participants' enjoyment of handmade crocheted doilies would be more (vs. less) sensitive to hedonic value when they had accumulated a broader (vs. less broad) range of experiences with crocheted doilies in the past. Replicating study 3b, study 3c therefore manipulated the participants' prior experiences with doilies by randomly assigning them to see a more broad range of 10 doilies (two of lower hedonic value, six of moderate hedonic value, two of higher hedonic value) or a less broad range of 10 doilies (ten of moderate hedonic value) in a knowledge acquisition phase. Extending beyond study 3b, participants indicated how much they enjoyed each doily in the knowledge acquisition phase so that we could relate past enjoyment to present enjoyment. After a filler task, all participants saw one more doily which constituted the target. We manipulated the hedonic value of the target by assigning participants to evaluate a doily of lower or higher hedonic value. Their enjoyment of the target served as our dependent measure.

We wanted to test at which time in the knowledge acquisition phase the participants became sensitive to hedonic value. We therefore did not randomize the presentation order of stimuli in the knowledge acquisition phase as in study 2-3b. Rather, we presented the doilies in a fixed order to examine how the evaluation of similar experiences (e.g. doilies of lower hedonic value) changed over time. In the broader range condition, participants saw three doilies of moderate hedonic value, followed by two of lower and two of higher hedonic value in alternating order, and finally three doilies of moderate hedonic value (figure 7). In this way, we could compare the participants' evaluation of doilies of lower and higher hedonic value changed over time as they accumulated more similar experiences.

Pretest

The pretest served to select doily stimuli for the main study. We selected 45 black and white pictures of crocheted doilies from the internet. One-hundred and seven MTurk participants first rated how much they enjoyed a hold-out sample of five doilies on a scale from 1 (I do not enjoy it at all) to 9 (I enjoy it very much). We had participants train on a hold-out sample to expose them to a range of doilies and thereby boost sensitivity for hedonic value for the subsequent ratings. After this training phase, participants saw 20 randomly selected doilies from the available pool of 40 patterns. The patterns were presented one-by-one in random order. On a scale from 1 (I do not enjoy it at all) to 9 (I enjoy it very much), they rated how much they enjoyed each crocheted pattern. We used the average enjoyment score as a proxy for each doily's hedonic value.

Next, we selected doilies for the knowledge acquisition phase. We ranked all pretested doilies according to their hedonic value (i.e., their average enjoyment score). To ensure a broad range of experiences in the main study, we selected the doily with the lowest ($M_{\text{lower\_value}}$ =4.31), the doily with the highest ($M_{\text{higher\_value}}$ = 7.00), and five doilies of moderate hedonic value ($M_{\text{moderate\_value}}$ = 5.55 – 5.95).

Next, we slightly altered the selected doilies for the use in the main study. We wanted to compare the participants' enjoyment of the same doily (the lower or higher value one) across different time points in the knowledge acquisition phase. Presenting the same doily repeatedly might lead to satiation effects – decreased enjoyment with repeated exposure (Ariely and Zauberman 2000; Frederick and Loewenstein 1999). To still be able to show the doilies repeatedly, while minimizing the potential

influence of satiation effects, we thus created replicates of the original doilies that varied minimally from each other. To do so, we only showed excerpts of the original pattern. Because all patterns were symmetrical, the excerpts were almost identical. We created three replicates of the doilies of lower and higher hedonic value respectively (six in total). Four of these replicates were used in the knowledge acquisition phase for participants in the more broad range condition, two were used as the lower and higher value targets. We also created two replicates of each of the five doilies of moderate value. This provided us with ten experiences of moderate value for participants in the less broad range condition. Six of the moderate experiences were included in the more broad range condition. All doily replicates used in the main study are depicted in figure 7.

Design and procedure

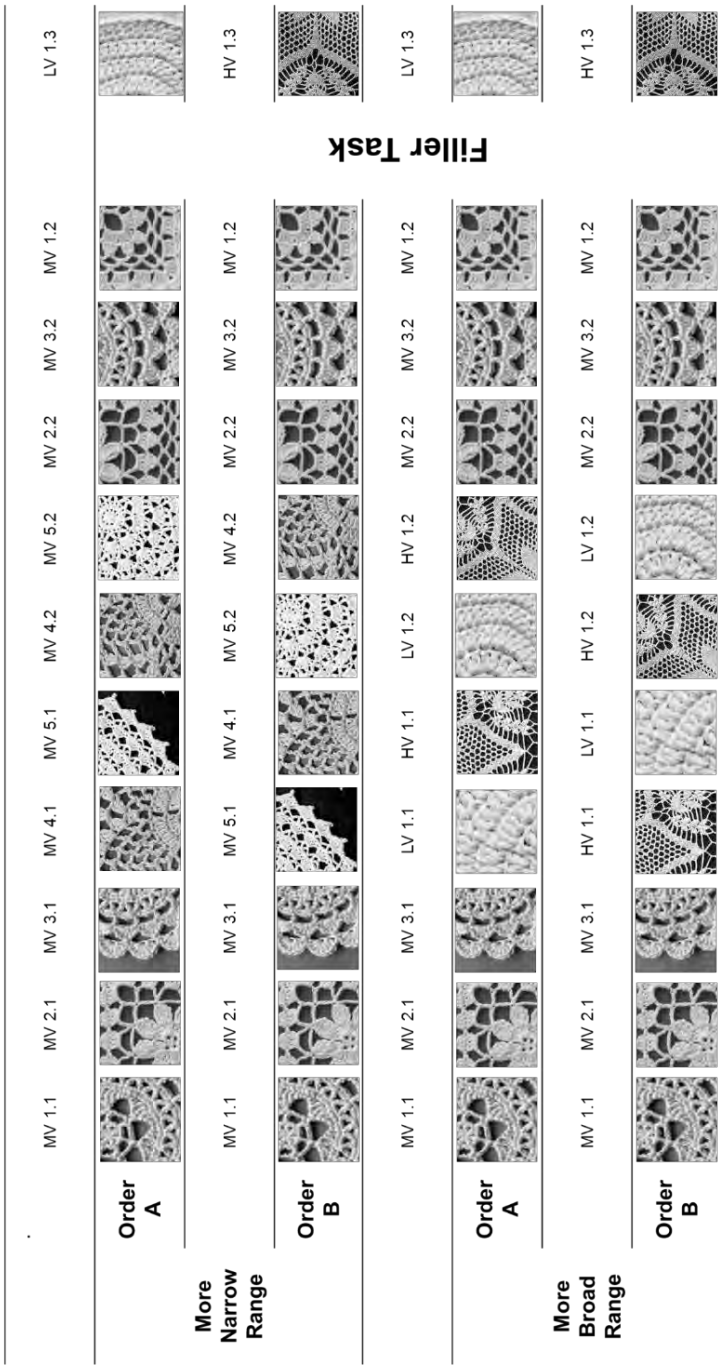
Study 3c manipulated the participants' prior experiences with doilies (less vs. more broad range) and the hedonic value of the target crocheted pattern (lower vs. higher) in a 2X2 between-subjects design. One-hundred and ninety-nine MTurk participants completed the study (112 females; M_{age} = 36.31, SD_{age} = 11.84).

As in study 2-3b, participants in the broader range condition saw a more broad range of ten doilies. We presented the doilies in one of two – randomly assigned orders (figure 7). The orders alternated between-subjects whether participants were first exposed to patterns of lower or higher hedonic value at T4 (more broad range condition) or the moderately enjoyable pattern 4.1 or 5.1 (less broad range condition; figure 7). This

enabled us to compare the enjoyment of participants in the more broad range condition over time.

As in study 3b, we assessed participants' enjoyment in the knowledge acquisition phase. For each doily excerpt, participants indicated their enjoyment on a slider scale (1 = do not enjoy it at all to 100 = enjoy it extremely). Next, participants completed the five dot-estimation filler tasks used in studies 2-3b. As a last step, we assessed participants' enjoyment of the target. The participants learned that they would rate one final doily. They were then assigned to rate a target of lower or higher hedonic value. We assessed participants' enjoyment on the same 100 point slider scale used in the knowledge acquisition phase (1 = do not enjoy at all to 100 = enjoy it extremely).

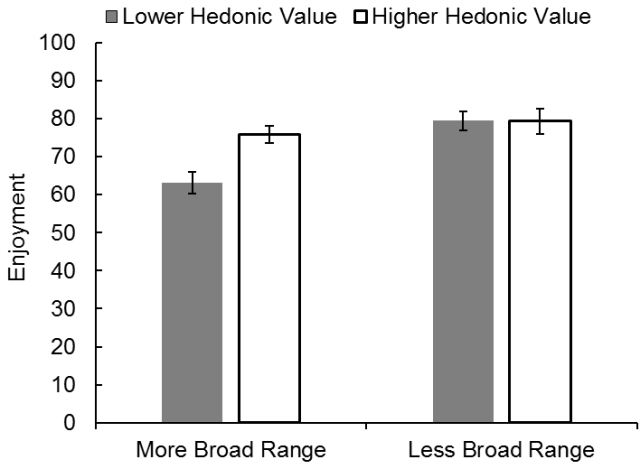
Figure 7: Presentation order of stimuli across the experience conditions



Results

Enjoyment of the target. We conducted a 2X2 analysis of variance to examine the main effects of range (less vs. more broad), hedonic value (lower vs. higher), and their interaction on the enjoyment of the target doilies. We detected a significant main effect for hedonic value. The doily of lower hedonic value was enjoyed less than the doily of higher hedonic value (M_{lower_value} = 71.43, SD = 23.23 vs. M_{higher_value} = 77.57, SD = 16.61; $F(1, 195) = 5.16$, $p = .024$, $\eta^2 = .024$). Potentially indicating a satiation effect, there was a significant main effect for range condition (M_{less_broad} = 79.37, SD = 20.66 vs. M_{more_broad} = 69.35, SD = 20.64; $F(1, 195) = 13.07$, $p < .001$, $\eta^2 = .060$). Replicating study 3b, we again detected a significant interaction between range and hedonic value ($F(1, 195) = 5.29$, $p = .023$, $\eta^2 = .024$; column 1 table 2, figure 8).

Figure 8: Range x hedonic value interaction on enjoyment of target



Note: Error bars represent standard errors of the mean.

Tests for simple effects indicated that participants with a more broad range of experiences were more sensitive to hedonic value than participants with a less broad range of experiences. They enjoyed the doily of lower hedonic value significantly less than the doily of higher hedonic value (M_{lower_value} = 63.12, SD = 23.03 vs. M_{higher_value} = 75.71, SD = 15.69; $F(1, 195) = 10.19$, $p = .002$, $\eta^2 = .052$). Participants who had only seen moderately enjoyable doily were insensitive to the hedonic value of the target doilies (M_{lower_value} = 79.41, SD = 20.66 vs. M_{higher_value} = 79.33, SD = 17.40; $F(1, 195) < .01$, $p = .984$, $\eta^2 < .001$).

Enjoyment of the target pattern over time. Next, we tested how the enjoyment of the target pattern changed over time. We ran two 2X2 ANOVAs to compare the target evaluations in the less broad range condition at T11 with the target evaluations in the more broad range condition at different time-points in the knowledge acquisition phase (at T4 and T7, figure 7 and figure 9). If our theory is correct, then a significant 2-way interaction between range (more broad vs. less broad) and target hedonic value (lower vs. higher) should emerge after (T7) but not before (T4) participants in the broad range condition had seen similar past crocheted patterns. In other words, because participants in the more broad range condition are still novices at an early stage in the knowledge acquisition stage (T4) their enjoyment of the target drawing should not differ from participants in the narrow range condition at T11. However, at a later stage in the knowledge acquisition phase (T7), participants in the more broad range condition have expertise because they have accumulated similar past experiences, which should cause their enjoyment of the target pattern to differ from participants in the narrow range condition at T11.

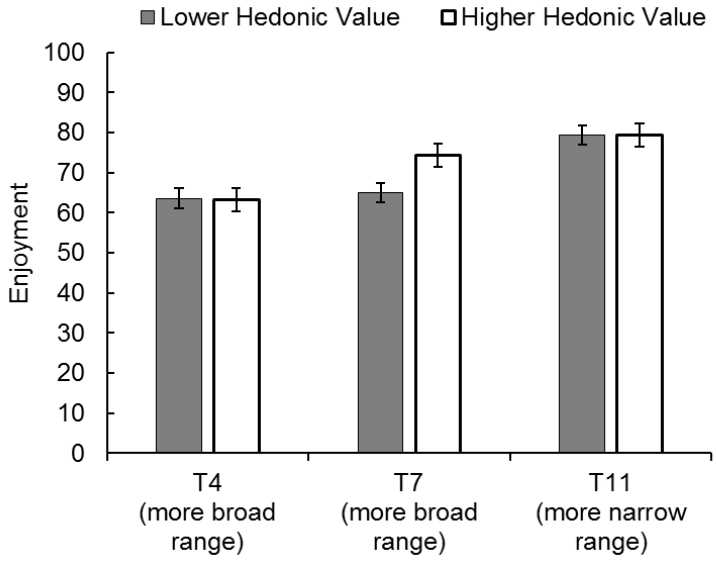
At a later stage in the knowledge acquisition phase (T7), we conceptually replicate our previous results. We detected a marginally significant interaction between range and hedonic value (p =.100; table 3, figure 8). Participants in the broad range condition were sensitive to the value of target patterns at T7 (M_{lower_value} = 64.94, SD = 24.02 vs. M_{higher_value} = 74.38, SD = 18.54; $F(1, 195) = 2.29$, p = .023), participants in the narrow range condition were insensitive to value at T11 (p = .984).

However, at an earlier stage in the knowledge acquisition phase (T4), we detect no significant interaction between range and hedonic value (p =.941; table 3, figure 8). Participants in the broad range condition were just as insensitive to the value of target patterns at T4 as participants in the narrow range condition at T11.

Table 3: Experience condition x hedonic value interaction on enjoyment at T4 and T7 (broad range condition) versus T11 (narrow range condition)

	Dependent measure: enjoyment					
	More broad range **T4** vs. more narrow range **T11**			More broad range **T7** vs. more narrow range **T11**		
	F	*P*	η^2	*F*	*p*	η^2
Hedonic Value	.002	.962	.000	2.641	.106	.013
Range	26.08	.000	.118	11.389	.001	.055
Hedonic Value X Range	.005	.942	.000	2.731	.100	.014

Figure 9: Enjoyment as a function of hedonic value in the more narrow range condition (T11) and across time in the more broad range condition (T4 and T7)



Note: Error bars represent standard errors of the mean.

Assimilation vs. Contrast. We hypothesized that participants in the broader range condition were more sensitive to hedonic value because they assimilated enjoyment to similar past crochet patterns from the knowledge acquisition phase. However, the participants had also seen dissimilar crochet patterns in the knowledge acquisition phase (past crochet patterns at the opposite end of the hedonic value spectrum than the target drawing). As such, it also possible that they were more sensitive to hedonic value because they contrasted present enjoyment away from dissimilar past doilies.

Study 3c again set out to test which of these two comparison processes would predict enjoyment of the target pattern. To do so, we

regressed the participants' enjoyment of the target pattern on their enjoyment of the dissimilar and similar prior experiences. Like in study 3a, we first created two variables that captured participants' enjoyment of similar and dissimilar patterns in the knowledge acquisition phase. We averaged each participants enjoyment score separately for the doilies of low and high hedonic value in the knowledge acquisition phase ($M_{experiencephase\_lowvalue}$= 64.23, SD = 24.63, α = .92; $M_{experiencephase\_highvalue}$ = 69.53, SD = 18.46, α = .71). Next, we recoded these variables into two variables that captured *similar* and *dissimilar* past experiences.

As expected, the model revealed a positive association between present enjoyment and past enjoyment of similar patterns (β = .768, t(94) = 11.56, p < .001, partial r = .767). Casting doubt on the possibility that present enjoyment was driven by hedonic contrast effects, there was no negative association between present enjoyment and past enjoyment of dissimilar patterns (β = -.027, t(94) = - .745, p = .680, partial r = -.043).

Discussion

Study 3c investigated how enjoyment changed over time while consumers accumulated a broad range of experiences. If sensitivity to hedonic value depends on being able to assimilate to similar past experiences, then we should only observe sensitivity after consumers have accumulated similar past experiences. Supporting that theory, participants who accumulated a broad range of experiences with doilies were sensitive to hedonic value after they had accumulated similar past experiences (at a later point in the knowledge acquisition phase) but not before they had accumulated similar past experiences (in the beginning of the knowledge

acquisition phase). Study 3c also replicated the findings of study 3a. Consumers were sensitive to the hedonic value of a target experience because they assimilated to similar past experiences. We found no evidence that sensitivity was driven by contrast to dissimilar past experiences.

Study 3c yielded a significant negative main effect for the range manipulation. We attribute this effect to satiation. When experiences are presented over longer periods of time, they become less pleasurable (Ariely and Zauberman 2000, Frederick and Loewenstein 1999). And consumers particularly enjoy novelty in aesthetic experiences (Berlyne 1970). Participants in the broad range condition were potentially more satiated on the targets while participants in the less broad range condition might have perceived them as novel. This might explain the observed negative main effect of the range manipulation.

General Discussion

Our investigation shed new light on how consumers develop knowledge (i.e., expertise) about hedonic products by accumulating experiences in a product domain and how having this knowledge affects their hedonic enjoyment in the present. Consistent with evaluability theory, we show that acquiring product knowledge creates value sensitivity. However, we also show that in the domain of experiential products, knowledge has potentially undesirable side effects. Compared to their novice counterparts, knowledgeable consumers were no longer able to enjoy mundane video games, or drawings ("curse of expertise"). So even though many consumers strive to accumulate more product experiences to

acquire knowledge, having this knowledge involves a cost. A coffee aficionado might need to walk past four Starbucks, sacrificing time and energy, to reach a coffee shop that offers elite coffee. In this way, our investigation challenges the assumption that having product knowledge has universally positive, or desirable, consequences for consumers (e.g., Alba and Hutchinson 1987).

Extending beyond evaluability theory, we show which aspect of knowledge contributes to sensitivity for hedonic experiences through moderation. Besides merely measuring knowledge (using a distribution builder in study 1) like previous investigations in the expertise literature, we actually manipulate knowledge for experiential products (studies 2 to 3c). We do so by exposing consumers to varying distributions of past experiences and measuring consumption enjoyment of new experiences at a later point in time.

Our findings suggest that the process of acquiring knowledge for experiences differs from the process of acquiring knowledge for numbers. Study 1 demonstrates that sensitivity was not driven by merely having many past experiences or having a sense of the average past experience. Rather, a broad range of past experiences made participants able to discriminate between a gaming app of lower and higher hedonic value. We replicate this finding using an experimental manipulation of knowledge in study 2.

Study 3a-c zoomed in on how consumers used their knowledge to gauge how much they enjoyed a target experience. We held the range of past experiences constant but manipulated whether consumers had seen six or 15 prior drawings (study 3a). Although changing the sum of experiences

changed the relative rank of the target drawing within their distribution changed, sensitivity for hedonic value was not affected. This finding raises doubts as to whether consumers compute the relative rank of the target experience. On the flipside, when we held the sum of drawing (i.e., crochet pattern) experiences constant but manipulated whether the range was more broad or narrow (study 3b and 3c), we detected differences in sensitivity for hedonic value. Although the target drawing (i.e., crochet pattern) was the best (i.e., worst) that participants in the narrow range condition had seen thus far, they were less sensitive to value than participants who had seen the full range of drawings. This finding is inconsistent with the possibility that consumers rank their experiences.

To further illustrate that the process of acquiring knowledge for experiences differs from the process of acquiring knowledge for numbers, we ran an additional study that replicated study 3b's design but this time using numeric stimuli. We randomly assigned participants to see a distribution of available bonus prizes (more broad vs. more narrow range) that were converted to a real bonus payment at the end of the study. Participants in the more broad range condition saw a normal distribution of 15 bonus prizes between 100 and 1000 points. Participants in the more narrow range condition saw a normal distribution of 15 bonus prizes between 400 and 700 points. After a filler task, participants were awarded either a higher (850) or a lower (250) bonus prize and rated how much they enjoyed this prize. Consistent with past findings on numeric knowledge (Janiszewski and Lichtenstein 1999), but inconsistent with our findings on experience knowledge, we found that consumers in the narrow range condition were more sensitive to the prizes than consumers in the broad

range condition. For numeric stimuli, consumers seem to be sensitive to numbers within and outside their range of past experiences. For more complex, experiential stimuli, consumers seem to be predominantly sensitive to experiences within their range of past experiences. In sum, our findings imply that expertise for hedonic experiences may be *local*.

While our findings raise doubt as to whether consumers rely on aspects of their distribution of past experiences (e.g., the mean, the minimum, the maximum), as they do for numeric stimuli, to make value judgements, we find support for an alternative process. Our correlational findings (study 3a and 3c) suggest that consumers may engage in similarity testing, or hedonic assimilation to evaluate hedonic experiences. When faced with a novel target experience, consumers seemingly retrieved similar past experiences (e.g., drawings and crochet patterns that were similar to the target) to gauge how much they enjoyed what they were seeing. Our data provide no evidence for the idea that consumers may engage in hedonic contrast. This strong support for a hedonic assimilation-like process is consistent with the notion that similarity-testing (hedonic assimilation) is a routine-strategy while dissimilarity-testing (hedonic contrast) only occurs under specific circumstances (e.g., distrust; Posten and Mussweiler 2013; sequential-evaluation; Ghoshal et al. 2014; Zellner et al. 2006; but also see: Novemsky and Ratner 2003).

Theoretical contributions

This chapter extends and complements the field's knowledge about consumer expertise in multiple ways. First, to the best of our knowledge, this work is the first to systematically demonstrate that consumers derive

knowledge form their past experiences and that having this knowledge makes them more sensitive to the hedonic value of their experiences. Although past approaches examined the effect of expertise on product choice, product handling or choice satisfaction, none of these investigations detailed effects on hedonic enjoyment. Our findings imply that expertise has a dark underbelly. Upon having seen the best and the worst, consumers are no longer able to reap enjoyment from mundane experiences. These costs may sometimes outweigh the benefits of expertise – being able to savor the very best more than the less knowledgeable.

Second, our work demonstrates that existing theories on the effect of knowledge on value sensitivity for numbers (e.g., knowledge factor in evaluability theory; Hsee and Zhang 2010) may not apply to complex, multidimensional stimuli like hedonic experiences. We thus provide a more nuanced understanding on the processes that determine knowledge and hedonic enjoyment. The pattern of results across our five studies suggest that hedonic experiences might be memorized, retrieved, and processed like exemplars (Medin and Schaffer 1978). When people gauged the hedonic value of a target experience, they initially focused on fundamental ways in which the target was similar to a standard they had encountered before. This similarity focus has been shown to play a dominant role in exemplar-based evaluation processes (Gentner and Markman 1994; Medin et al. 1993; Srull and Gaelick 1983). Our hedonic assimilation findings are also consistent with the notion that the affect associated with exemplars (similar past experiences) is assimilated to the new experience ("This coffee is enjoyable because it is similar to this enjoyable coffee I drank in the past.", Park, Milberg and Lawson 1991).

Managerial implications

Our findings suggest that practitioners should carefully consider to whom they market experiential products of lower and higher hedonic value. Marketing elite coffee to those who typically do not consume in this value range may be a lost cause because unknowledgeable consumers cannot recognize and appreciate the value of the product they are given. On the flipside, recommending a poor coffee brand to coffee aficionados may produce considerable backlash. Knowledgeable consumers will recognize low hedonic value when they see it and may be deeply dissatisfied with the product they were given.

We also encourage marketing professionals to rethink how they operationalize expertise and categorize consumers as less or more expert. Recommendation algorithms can easily trace and record consumers purchase histories to compute new product recommendations. While developers may be tempted to use the sum of past experiences as a proxy for expertise, our investigation highlights that it is the range of past experiences that makes consumers expert and sensitive to value. Only those who have already consumed at the high (and low) end of the available spectrum of hedonic value seem to be able to savor the very best.

Lastly, we recommend that marketers should take a careful approach to sensitize customers to experiences of higher hedonic value. Consumers who usually gravitate towards moderate experiences (e.g., Starbucks coffee) can be made more knowledge if their range of past experiences is carefully extended. Our studies show that a one-shot exposure to a product outside of their pre-existing range of experiences

might not be sufficient to increase sensitivity to hedonic value. Put differently, a coffee novice who typically drinks Starbucks coffee might not greatly savor his or her first cup of Kopi Luwak (the world's most expensive coffee priced at $35 a cup). Rather, our findings highlight that extending one's range of experience might involve repeated exposure to experiences of various hedonic value (lower, moderate, and higher) in a relatively short time-span. Mirroring our "knowledge acquisition phase", a coffee novice could be sensitized to Kopi Luwak after having sampled a variety of coffees of different hedonic value in short succession.

Limitations and future research

Our investigation highlights several directions for future research. First, our inquiry was limited to examining hedonic experiences of a visual nature (e.g., video games, drawings, crocheted patterns). We encourage researchers to examine whether our findings, and proposed process (hedonic assimilation), generalize to other sensory experiences such as smell (e.g., perfumes), taste (e.g., wine), or hearing (e.g., music). Further, we exclusively tested the effect of knowledge on hedonic enjoyment for positively valenced experiences. Whether experience knowledge affects the disenjoyment of negatively valenced experiences similarly than the enjoyment of positively valenced experiences is still in the dark.

Our studies have focused on hedonic enjoyment as the core dependent measures. It is however conceivable that having, versus lacking, experience knowledge has other important downstream consequences on consumer behavior and decision making. Future research should explore whether knowledge, in the form of the range of past experiences, affects the

time spent on experiences or product search behavior. Moreover, it would be interesting to explore whether the range of past experiences would predict whether consumers are willing to accept inconveniences to acquire products of sufficient hedonic value (e.g., debt, long delivery-times, or high surcharges).

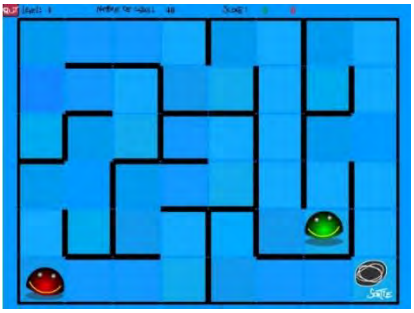
Lastly, our studies have exclusively examined the hedonic enjoyment of target products of rather "extreme" hedonic value. For instance, in studies 2-3c, the drawings if higher and lower hedonic value were the fourth most or least enjoyed drawings in our pretest. As such, our investigation has coupled the hedonic value of target stimuli with the extremity of the target stimuli. We have purposefully examined target products of very high and very low hedonic value to be able to document the "curse" and "blessing" effects of expertise (figure 1). We encourage future research to examine whether knowledge also affects the enjoyment of moderate target experiences (e.g., moderately high vs. moderately low hedonic value). Our framework predicts that consumers whose range of past experiences includes (vs. does not include) these moderate experiences are more sensitive to hedonic value. The hedonic assimilation process suggests that knowledgeable consumers would assimilate their enjoyment of moderate target experiences to similar moderate past experiences.

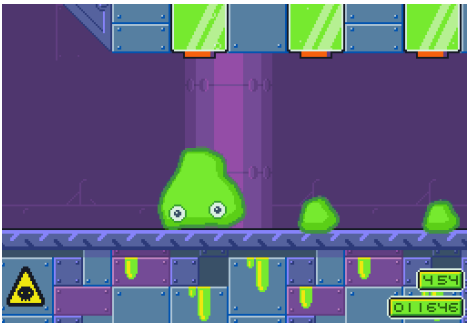
Conclusion

Although many consumers strive to become experts by accumulating more and more experiences, this investigation showed that having knowledge has important costs. Once consumers have gained a broad range of experience, they can no longer enjoy more mundane products that they might have taken pleasure in before. Besides detailing effects on enjoyment, our work also elucidates how expertise for experiences is acquired and contrasts this process with the genesis of expertise for numeric stimuli. Across five experiments, we demonstrate that knowledgeable consumers are those that have accumulated a broad range of experiences, not those who have accumulated "just" many experiences. This finding dovetails with the observation that consumers strategically sample heterogeneous (vs. homogeneous) experiences to build up knowledge (Clarkson, Janiszewski, and Cinelli 2013).

Appendix

Target gaming apps of lower versus higher hedonic value in study 1



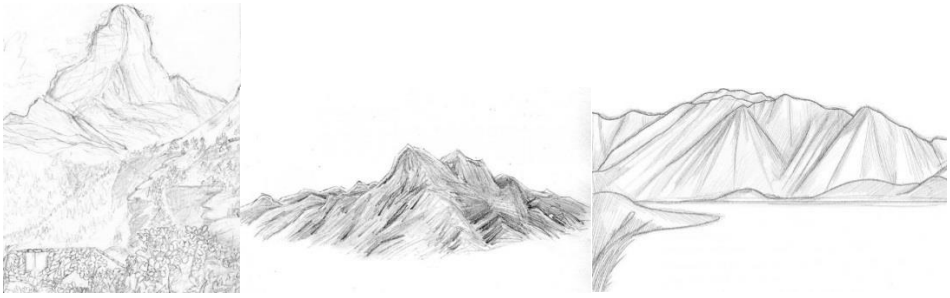


Mountain drawings of different hedonic value in study 3a and study 3b

Higher hedonic value

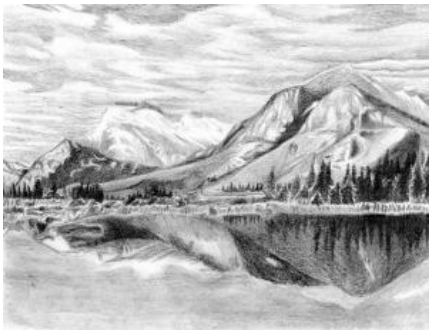
Moderate hedonic value

Lower hedonic value



Target lower hedonic value

Target higher hedonic value



Six mountain drawings of moderate hedonic value (study 3b)

General Discussion

This dissertation extends existing knowledge on the perception and pursuit of product quality in multiple ways. On the consumer side, we identify an overlooked self-related motive that leads some consumers to choose products of inferior quality for themselves. We also elucidate how consumers' level of expertise affects their enjoyment of products of higher and lower quality. On the producer side, our investigation highlights that arbitrary industry-set constraints on product length can hinder the product development process and may lead to the involuntary release of lower quality products that fail to appeal to consumers. Our nuanced findings suggest that previous research may have overlooked important motivational, perceptual, and structural drivers of perceived product quality. By shedding more light on these latent factors (the self-verification motive, consumer expertise, and industry set length constraints), our work offers a better understanding of several poorly-understood phenomena in the marketplace.

Chapter 1 challenged the assumptions that consumers are generally motivated to enhance their self-views with high quality products that symbolize their success and greatness (Dunning 2007). We show that individual differences in trait self-esteem–people's chronic attitude toward themselves–determines whether consumers seek to self-enhance or self-verify. More specifically, because of the way that low self-esteem consumers think about themselves and their place in the world, they are more likely to engage in self-verification as compared to their high self-

esteem counterparts. The opposite holds true for high self-esteem consumers. Four studies demonstrated low self-esteem consumers choose lower-quality products in the service of self-verification while high self-esteem consumers tend to self-enhance with high quality products symbolic of success and competence. Our work thereby offers a novel explanation for inferior-product choice and the pursuit of counter-hedonic consumption. For consumers who do not think highly of themselves, choice of inferior products seems to serve the need to confirm pre-existing self-views.

Chapter 2 shed new light on how arbitrary industry norms interact with the entertainment industry's production process. Post-production editing serves to remove low-quality elements from the final product to maximize product quality and consumers enjoyment. For instance, when editing a movie for theatrical release, editors work tediously to remove boring scenes, tedious subplots, and other elements that do not move the story along or would otherwise hurt enjoyment. However, post-production editors may not always be free to edit their product to its ideal length and optimal quality. Some entertainment formats, for instance motion pictures designed for theatrical release, need to meet arbitrary, industry-set length constraints (e.g., the 90-minute minimum length constraint for Western movies). These minimum constraints may force some producers to keep lower quality elements in order to make their movie "long enough" for theatrical release which should lead to an overrepresentation of shorter-lower quality products in the marketplace. Consistent with theory, we find that most poorly rated Hollywood movies are about 90 minutes long, a finding that was not explained by other movie characteristics (e.g., genre, production budget), and that was not observed in a motion-picture industry

that does not impose a minimum length constraint (Bollywood). Our investigation concludes by advising industry professionals on how to work around minimum length constraints and other pitfalls of the production process (e.g., stepwise approach) to minimize the prevalence of low-quality entertainment products in the marketplace.

Chapter 3 offers an alternative perspective on the notion that perceived quality is largely determined by product characteristics like brand, price, aesthetic appeal, or country of origin. Rather, we highlight a factor within the consumer that may largely determine whether products are considered low and high quality: consumer expertise, or knowledge. We proposed that consumers build up knowledge about experiential products in the same way as they build up knowledge about numeric stimuli (e.g., prices): by accumulating experiences in the product domain (e.g., for prices: by sampling available prices). Our experimental paradigm allowed us to manipulate knowledge experimentally by exposing consumers to different distribution of past experiences. Consistent with evaluability theory, we show that acquiring product knowledge creates value sensitivity. However, we also highlight that in the domain of experiential products, knowledge has hedonic benefits ("blessing of expertise") but also entails hedonic costs ("curse of expertise"). Knowledgeable consumers enjoy elite products more than novices, but are less able to enjoy mundane products.

Extending beyond evaluability theory, we show which aspect of knowledge contributes to sensitivity. Our findings suggests that the process of acquiring knowledge for experiences differs from the process of acquiring knowledge for numbers. Sensitivity was not driven by the sum, or average experience, or the rank of an experience. Rather, a broad range of

past experiences seems crucial because it provides similar past experiences that serve as assimilation standards. More importantly, our findings imply that expertise for hedonic experiences may be *local*. Consumers seemed sensitive to experiences within but not outside of their range of past experiences. A finding that might be specific for experiential stimuli. When judging prices, for instance, consumers were sensitive to prices within and outside their range of past experiences (Janiszewski and Lichtenstein 1999). Our findings imply that while many consumers strive to acquire knowledge by sampling more and more products, having this knowledge involves a cost. A coffee aficionado might need to walk past four Starbucks, sacrificing time and energy, to reach a coffee shop that offers elite coffee.

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Summary (English)

Perceived product quality is defined as the extent to which a product is able to satisfy the needs of consumers (American Society for Quality 2007). For decades, perceived product quality has been a topic of interest in marketing research generally, and consumer behavior research more specifically, because perceived product quality is central in every stage of the producer to consumer transaction. Producers aim to release products that are free of deficiencies and tailored to satisfy consumers' needs and desires (American Society for Quality 2008), marketers try to promote products in a way that highlights a product's high quality (Kirmani and Rao 2000), and consumers carefully choose between alternatives to obtain the product that satisfies their needs in the most optimal way (Sweeney and Soutar 2001). This dissertation takes both a consumer and producer-centric approach to uncover overlooked drivers of the pursuit and perception of product quality in the marketplace.

Chapter 2 focuses on an overlooked motivational driver that leads some consumers to choose products for themselves that they perceive to be relatively inferior – the self-verification motive. By examining a substantial minority of consumers, those with low trait self-esteem, who are especially committed to act in congruence with their self-views, we are able to elucidate to role of self-verification for product choice. We find that low self-esteem consumers' relatively negative self-views foster a tendency to self-verify by choosing lower-quality products. Consumers with high self-esteem, in contrast, tend to be motivated to self-enhance and prefer higher-

quality products that can serve this motive. Across all our studies, we rule out that consumers with low self-esteem were more inclined towards lower quality products out of a desire to save money. Rather, we show that low self-esteem consumers' gravitate towards inferior products because they identify with inferior products.

Chapter 3 takes a producer-focused approach to elucidate structural features of the entertainment product development process that shape perceived product quality. We propose that arbitrary industry set length constraints (e.g., the 90-minute minimum running time for theatrical releases in Hollywood) can interfere with the creative production process and thereby jeopardize product quality. Some producers need to keep some bad content in their final product when the amount of good content falls short of a minimum length to get their product released. If a minimum length constraint has the proposed adverse effects on product quality, then we should observe an overrepresentation of short, lower-quality entertainment products in the marketplace. As a real-world case study, we investigate the length and quality of more than 1000 Hollywood movies. Consistent with our account, we find that most bad movies tend to be about 90-minutes long. This finding was not explained by alternative accounts (e.g., genre, production budget, distribution channel). We also show that in a marketplace that does not impose a minimum length-constraint on running time—Bollywood—bad movies are equally likely to be short, or long.

Chapter 4 again takes a consumer-centric approach and examines a novel perceptual driver of subjective product quality—consumer expertise. We show that consumers build up expertise (e.g., become art-savvy) by

accumulating experiences in a product category (e.g., sampling artistic products). Our investigation makes two major contribution. First, we show that consumers' past experiences have a direct influence on their enjoyment of new products. As they gain experience, their enjoyment of less and more enjoyable experiences starts to differ more strongly. Second, we show how consumers' draw back on their past experiences to gauge present enjoyment. In contrast to past investigation on 'numeric knowledge", consumers did not compare novel experience to the average past experience, their best and worst past experience, or engaged in a ranking process. Rather, expert consumers were sensitive to hedonic value because they were able to engage in hedonic assimilation. In sum, our investigation shows that consumers do not use "experience knowledge" in the same way as they use alternative forms of knowledge (e.g., numeric knowledge).

By taking the different perspectives of consumers and producers, this dissertation uncovers overlooked drivers that shape the pursuit and perception of product quality in the marketplace. On the consumer side, we elucidate a motivational driver that leads some consumers to chronically choose lower-quality products for themselves—the self-verification motive. We also examine the effect of expertise on perceptions of product quality and hedonic enjoyment. On the producer side, we examine structural features of the production process that contribute to the prevalence of products that consumers perceive to be inferior. In sum, this dissertation extends to field's knowledge about the role of perceived product quality in the marketplace.

Samenvatting (Nederlands)

Waargenomen productkwaliteit wordt gedefinieerd als de mate waarin een product de behoeftes van consumenten kan vervullen (American Society for Quality 2007). Al tientallen jaren is waargenomen productkwaliteit een belangrijk onderwerp in marketing onderzoek in het algemeen en meer specifiek in onderzoek naar consumentengedrag, omdat waargenomen productkwaliteit centraal staat in elk stadium van de transactie van de producent tot de consument. Producenten hebben het doel om producten op de markt te brengen zonder tekortkomingen, die gemaakt zijn om de behoeftes en wensen van consumenten te vervullen (American Society for Quality 2008), marketeers proberen producten te promoten op zo'n manier dat de hoge kwaliteit van een product benadrukt wordt (Kirmani en Rao 2000), en consumenten kiezen zorgvuldig tussen alternatieven om een product te verkrijgen dat hun behoeftes op de meest optimale manier vervult (Sweeney en Soutar 2001). Dit proefschrift hanteert een benadering waarbij zowel de consument als producent centraal staan om drivers van het nastreven en waarnemen van productkwaliteit in de markt, die over het hoofd zijn gezien, bloot te leggen.

Hoofdstuk 2 focust op een vergeten motiverende driver die ervoor zorgt dat sommige consumenten producten kiezen die zij als relatief minderwaardig zien - het zelfverificatie motief. Door een substantiële minderheid van consumenten te onderzoeken, namelijk degenen met weinig zelfvertrouwen en die vooral toegewijd zijn om te handelen in overeenstemming met hun zelfbeeld, kunnen wij de rol van zelfverificatie

bij het kiezen van producten, verhelderen. Wij hebben gevonden dat het relatief negatieve zelfbeeld van consumenten met weinig zelfvertrouwen de neiging tot zelfverificatie bevordert door producten van lagere kwaliteit te kiezen. Daarentegen neigen consumenten met veel zelfvertrouwen gemotiveerd te zijn om zichzelf te versterken en hebben daardoor de voorkeur voor hogere kwaliteit producten. In al onze onderzoeken hebben we uitgesloten dat consumenten met weinig zelfvertrouwen meer geneigd zijn om lage kwaliteit producten te kopen omdat dat geld bespaart. Wij laten namelijk zien dat consumenten met weinig zelfvertrouwen zich juist aangetrokken voelen tot minderwaardige producten omdat zij zich daarmee identificeren.

Hoofdstuk 3 hanteert een aanpak die gefocust is op producenten om structurele kenmerken van het entertainment product ontwikkelingsproces die waargenomen productkwaliteit vormgeven, te verhelderen. Wij stellen voor dat arbitraire door de industrie opgelegde lengte beperkingen (bijvoorbeeld de minimum duur van 90 minuten voor films in Hollywood) kunnen interfereren met het creatieve productieproces waardoor de productkwaliteit kan verminderen. Sommige producenten moeten slechte inhoud in hun eindproduct houden wanneer de hoeveelheid goede inhoud niet de minimale lengte heeft om het product uit te kunnen brengen. Als een minimale lengte beperking de voorgestelde nadelige effecten heeft op productkwaliteit, dan zouden we een oververtegenwoordiging van korte, lagere kwaliteit entertainment producten in de markt moeten observeren. We onderzochten de lengte en kwaliteit van meer dan 1000 Hollywood films als een casus in de praktijk. In overeenstemming met onze verwachting vonden we dat de meeste slechte films de neiging hebben om

90 minuten lang te zijn. Deze bevinding wordt niet verklaard door alternatieve kenmerken (bijv: genre, productiebudget, distributiekanaal). We tonen ook aan dat in een markt die geen minimale lengte beperkingen oplegt op de filmduur - Bollywood - de slechte films een even grote kans hebben kort of lang zijn.

Hoofdstuk 4 hanteert opnieuw een consumentenbenadering en bestudeert een nieuwe perceptuele driver van subjectieve productkwaliteit - consumentendeskundigheid. We laten zien dat consumenten deskundigheid opbouwen (bijvoorbeeld kunstkenner worden) door het opeenstapelen van ervaringen in een productcategorie (bijvoorbeeld 'proeven' van artistieke producten). Ons onderzoek heeft twee grote bijdragen. Ten eerste laten we zien dat de eerdere ervaringen van consumenten een directe invloed hebben op hun genot van nieuwe producten. Wanneer ze ervaring krijgen, begint hun genot van minder en meer aangename ervaringen sterker te verschillen. Ten tweede tonen we aan dat consumenten terugkomen op hun eerdere ervaringen om hun huidige genot the peilen. In tegenstelling tot vroeger onderzoek naar 'numerieke kennis', vergeleken consumenten hun nieuwe ervaringen niet met de gemiddelde vroegere ervaring of hun beste en slechtste eerdere ervaringen, en pasten ze geen rangschikkingsproces toe. Expert consumenten waren eerder gevoelig voor hedonistische waarde, omdat ze hedonistische assimilatie konden aanwenden. Opsommend laat ons onderzoek zien dat consumenten 'ervaring kennis' niet op dezelfde manier gebruiken als dat ze alternatieve vormen van kennis (bijvoorbeeld numerieke kennis) gebruiken.

Door verschillende perspectieven van consumenten en producenten aan te nemen, legt dit proefschrift de vergeten drivers, die het nastreven en

waarnemen van productkwaliteit in de markt vormen, bloot. Vanuit de consumentenkant lichten we een motiverende driver toe die verklaart dat sommige consumenten chronisch lagere kwaliteit producten kiezen voor zichzelf - het zelfverificatie motief. We onderzoeken ook het effect van expertise op de waarnemingen van productkwaliteit en hedonistisch genot. Vanuit de producentenkant onderzoeken we structurele kenmerken van het productieproces die bijdragen aan het overwicht van producten die consumenten zien als minderwaardig. Samenvattend kunnen we stellen dat dit proefschrift de huidige kennis over de rol van waargenomen productkwaliteit in de markt uitbreidt.

About the Author

Anika Stuppy was born in Landstuhl, Germany on January 23rd 1987. She received her Diploma (Master equivalent) in Psychology from the University or Cologne, Germany. In 2013, she started her Ph.D research in Marketing at the Erasmus Research Institute in Management. Her main research interests concern perceived product quality and hedonic enjoyment. Within this domain, she pursues several streams of research. In one project, Anika examines why consumers with negative self-views sometimes choose to consume inferior products. Another project decodes how consumers' present hedonic enjoyment is shaped by their past experiences in a product domain. In a third stream of research, she examines consumers' enjoyment of entertainment media. Anika has has published her work in the Journal of Experimental Psychology: General and the Marketing Science Institute Working Paper series. She has also presented her research at numerous international conferences (e.g., the Association for Consumer Research, Society for Consumer Psychology, and European Marketing Academy). Between August 2015 and December 2015, she was a visiting research scholar at the Leeds School of Business, University of Colorado at Boulder. In September 2018, Anika started working as an Assistant Professor in Marketing at Tilburg University, the Netherlands.

Portfolio

Publications

Mead, Nicole L., Roy F. Baumeister, **Anika Stuppy**, and Kathleen D. Vohs (2018), "Power Increases the Socially Toxic Component of Narcissism Among Individuals With High Baseline Testosterone", *Journal of Experimental Psychology: General*, 147(4), 591-596

McGraw, Peter A.*****, **Anika Stuppy***, and Justin Pomerance (2017), "Editing Entertainment: Length Constraints, Product Quality, and the Case of the Motion Picture Industry," *Marketing Science Institute Working Paper Series,* 17-144. (*equal authorship)

Stuppy, Anika and Nicole L. Mead (2016), "Heroic Leaders and Despotic Tyrants: How Power and Status Shape Leadership Outcomes" in *Handbook of Heroic Leadership,* Vol. 1, ed. Scott T. Allison, George R. Goethals, and Roderick M. Kramer, New York, NY: Routledge, 476-494.

Mead, Nicole L. and **Anika Stuppy** (2014), "Two Sides of the Same Coin: Money Can Promote and Hinder Interpersonal Processes" in *The Psychological Science of Money,* Vol. 1, ed. Erik H. Bijleveld and Henk Aarts, New York, NY: Springer, 243-262.

Under Review

Stuppy, Anika, Nicole L. Mead, and Stijn M. J. van Osselaer, "I am, Therefore I Buy: Low Self-Esteem and the Pursuit of Self-Congruent Consumption" (in preparation for submission to the 3rd review round at the *Journal of Consumer Research*)

Research in Progress

McGraw, Peter A.*, **Anika Stuppy***, and Justin Pomerance, "Editing Entertainment: Length Constraints, Product Quality, and the Case of the Motion Picture Industry" (working manuscript, in preparation for submission to the *Journal of Marketing Research*; *equal authorship)

Stuppy, Anika and Bram van den Bergh, "How the Past Shapes the Present: The Assimilation of Enjoyment to Similar Past Experiences" (working manuscript, in preparation for submission to the *Journal of Marketing Research)*

Stuppy, Anika, Gabriele Paolacci, and Nailya Ordabayeva, "Feeling Short Threatens Subjective Social Status" (in preparation for submission to the *Journal of Consumer Research)*

A. Peter McGraw, **Anika Stuppy,** and Stephanie M. Tully, "Failing to Trim the Fat from Entertainment Media" (data collection in progress)

Teaching Experience

Bachelor Thesis Instructor (2016, 2017, 2018; Average Evaluation: 8.7/10). Supervision of 30 Bachelor Students

Guest Lecture in Master Course "Nudging Consumer Choice" (2015). Instructor: Nicole L. Mead

Conference Presentations

How the Past Shapes the Present: The Assimilation of Enjoyment to Similar Past Experiences

- *European Marketing Academy* – Glasgow, 2018
  (part of the individual paper session "Consumer Behavior')
- *European Association for Consumer Research* – Ghent, 2018
  (part of the individual paper session "Enjoyment)
- *European Marketing Academy* - Doctoral Colloquium (Advanced Consumer Behavior track), Groningen, 2017

I Am, Therefore I Buy: Low Self-Esteem and the Pursuit of Self-Congruent Consumption

- *SCP Boutique Conference Consumption of Vice and Virtue,* Sidney 2018
- *La Londe,* Aix-Marseille, 2017
  (part of the individual paper session "Make me feel better")
- *European Marketing Academy,* Groningen, 2017
  (part of the individual paper session "Consumer Psychology")
- *University of Technology Sidney Marketing Research Camp,* Sidney, 2016
- *Association for Consumer Research - North American Conference*, Berlin, 2016
  (part of the individual paper session "Emotion Generation and Emotional Consumption")

Editing Entertainment: Length Constraints, Consumption, and the Case of the Motion Picture Industry

- *European Association for Consumer Research,* Ghent, 2018
  (part of the individual paper session "Enjoyment")
- *European Marketing Academy,* Groningen, 2017
  (part of the individual paper session "Consumer Psychology")

Feeling Short Threatens the Self

- *European Marketing Academy*, Leuven, 2015
  (part of the individual paper session "What do You do When You are Scared?")
- *Society for Consumer Psychology – International Conference*, Vienna, 2015
  (part of the individual paper session "Body Perception: Short, Curvy & Beautiful")
- *Society for Consumer Psychology – Winter Conference*, Phoenix, 2015
  (part of the individual paper session "Getting Personal: Ego, Identity and Consumption")

- *Association for Consumer Research - North American Conference*, Baltimore, 2014
  (part of the special session "Compensatory Consumption: Triggers and Strategies")

Consumption Related Guilt Decreases Satiation

- *European Marketing Academy* – Doctoral Colloquium (Consumer Behavior Beginners Track), Leuven, 2015

Invited Talks

I Am, Therefore I Buy: Low Self-Esteem and the Pursuit of Self-Verifying Consumption

- London Business School, 2017
- University of Washington, 2017
- Tilburg University, 2017
- Bocconi University, 2017
- HEC Lausanne, 2017
- Nova SBE, 2017
- Amsterdam Business School, 2017

Professional and University Services

Trainee Reviewer for the Journal of Consumer Research
Reviewer for the 2015, 2016, 2017 Society for Consumer Psychology Conference
Reviewer for the 2015, 2016, 2017 Association for Consumer Research Conference
Reviewer for the 2017 La Londe Conference
Reviewer for the 2018 European Association for Consumer Research Conference
Subject Pool Manager, Rotterdam School of Management, Erasmus University, 2014-2015

Selected Doctoral Coursework

Marketing

Behavioral Decision Theory	P. Wakker (Erasmus University)
Current Topics in Marketing Research	S. Puntoni (Erasmus University)
Topics in Consumer Behavior: Advances in Consumer Neuroscience	A. Smidts (Erasmus University)
Blame and Attribution *(non-credit)*	S. van Osselaer (Cornell University)
Consumer and Managerial Decision Research in Marketing *(non-credit)*	A.P. McGraw (University of Colorado)

Research Methods & Statistics

Statistical Methods	P. Groenen, A. Koning (Erasmus University)
Covariance-based Structural Equation Modeling	G. Berens (Erasmus University)
Mediation and Moderation (*5-day seminar in Philadelphia)*	A. Hayes (Ohio State)
Steps in the Meta Analysis Research Process	M. van Essen (Utrecht University)
Advanced Research Techniques (1+2)	J. Vosgerau (Tilburg University)
Multi-level Analysis in SPSS *(workshop)*	J. Dawson (University of Sheffield)
Generating and Implementing Interesting Research Ideas	C. Fuchs (Erasmus University)

Doctoral Tutorials

Making Research Impactful and Relevant	R. Rust (University of North Carolina)
Managing the Review Process	T. Lowrey (HEC Paris)

Awards and Grants

2017 Revision grant, University of Melbourne

2016 ERIM Talent Placement Programme
(Competitive fifth year funding)

2015 Research visit grant, Erasmus TrustFonds

ERIM PhD Series Research in Management

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Dissertations in the last four years

Abbink, E.J., *Crew Management in Passenger Rail Transport*,
Promotors: Prof. L.G. Kroon & Prof. A.P.M. Wagelmans, EPS-2014-325-LIS,
http://repub.eur.nl/pub/76927

Acar, O.A., *Crowdsourcing for Innovation: Unpacking Motivational, Knowledge and Relational Mechanisms of Innovative Behavior in Crowdsourcing Platforms*,
Promotor: Prof. J.C.M. van den Ende, EPS-2014-321-LIS, http://repub.eur.nl/pub/76076

Akemu, O., *Corporate Responses to Social Issues: Essays in Social Entrepreneurship and Corporate Social Responsibility,* Promotors: Prof. G.M. Whiteman & Dr S.P. Kennedy,
EPS-2017-392-ORG, https://repub.eur.nl/pub/95768

Akin Ates, M., *Purchasing and Supply Management at the Purchase Category Level: Strategy, structure and performance*, Promotors: Prof. J.Y.F. Wynstra & Dr E.M. van Raaij, EPS-2014-300-LIS, http://repub.eur.nl/pub/50283

Alexander, L., *People, Politics, and Innovation: A Process Perspective*,
Promotors: Prof. H.G. Barkema & Prof. D.L. van Knippenberg, EPS-2014-331-S&E,
http://repub.eur.nl/pub/77209

Alexiou, A. *Management of Emerging Technologies and the Learning Organization: Lessons from the Cloud and Serious Games Technology*, Promotors: Prof. S.J. Magala, Prof. M.C. Schippers and Dr I. Oshri, EPS-2016-404-ORG, http://repub.eur.nl/pub/93818

Almeida e Santos Nogueira, R.J. de, *Conditional Density Models Integrating Fuzzy and Probabilistic Representations of Uncertainty*, Promotors: Prof. U. Kaymak &
Prof. J.M.C. Sousa, EPS-2014-310-LIS, http://repub.eur.nl/pub/51560

Alserda, G.A.G., *Choices in Pension Management*, Promotors: Prof. S.G. van der Lecq & Dr O.W. Steenbeek, EPS-2017-432-F&A, https://repub.eur.nl/pub/103496

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Berg, W.E. van den, *Understanding Salesforce Behavior using Genetic Association Studies*, Promotor: Prof. W.J.M.I. Verbeke, EPS-2014-311-MKT, http://repub.eur.nl/pub/51440

Beusichem, H.C. van, *Firms and Financial Markets: Empirical Studies on the Informational Value of Dividends, Governance and Financial Reporting*, Promotors: Prof. A. de Jong & Dr G. Westerhuis, EPS-2016-378-F&A, http://repub.eur.nl/pub/93079

Bliek, R. de, *Empirical Studies on the Economic Impact of Trust*, Promotor: Prof. J. Veenman & Prof. Ph.H.B.F. Franses, EPS-2015-324-ORG, http://repub.eur.nl/pub/78159

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Faber, N., *Structuring Warehouse Management*, Promotors: Prof. M.B.M. de Koster & Prof. A. Smidts, EPS-2015-336-LIS, http://repub.eur.nl/pub/78603

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This dissertation extends existing knowledge on the perception and pursuit of product quality. Our nuanced findings identify overlooked motivational, perceptual, and structural drivers of perceived product quality. The first chapter examines an underexplored self-related motive that determines whether consumers choose inferior or superior products for themselves. We show that consumers with low self-esteem gravitate towards relatively inferior products because they strive to verify their negative self-views. The third chapter elucidates how consumer expertise, or knowledge, shapes perceptions of product quality. Specifically, we show that being knowledgeable entails benefits ("blessing of expertise") but also costs ("curse of expertise"). Knowledgeable consumers enjoy elite products more than novices, but are less able to enjoy mundane products. In the second chapter, we examine what may cause producers to release lower quality products. By examining the motion picture industry as a case study, we highlight that arbitrary industry-set constraints on product length can hinder the product development process and may cause filmmakers to release movies that fail to appeal to consumers.

This research has important managerial implications for professionals in the area of marketing. From a theoretical point of view, this dissertation extends the field's understanding as to what causes consumers to perceive products as being lower or higher quality, and how choosing these products may serve self-related motives. Moreover, this research contributes to literature on product development processes. Our inquiry sets the stage to further examine a crucial, yet underexplored, driver of product quality: the interplay of production and post-production.

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Erasmus Research Institute of Management
Mandeville (T) Building
Burgemeester Oudlaan 50
3062 PA Rotterdam, The Netherlands

P.O. Box 1738
3000 DR Rotterdam, The Netherlands
T +31 10 408 1182
E info@erim.eur.nl
W www.erim.eur.nl