Undermining the Restorative Potential of Compensatory Consumption: A Product's Explicit Identity Connection Impedes Self-Repair

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When people experience threats to important aspects of their self-concept (e.g., power, intelligence, sociability), they often compensate by consuming products that symbolize success, mastery, or competence on the threatened self-domain (*within-domain compensatory consumption*). Our research examines whether such compensatory consumption is effective in repairing the self-concept. Across seven experiments, we show that whether compensatory consumption is effective depends on the extent to which the connection between the compensatory products and the threatened domains is made explicit. When the connections are made explicit (e.g., through product names and marketing slogans), self-repair is impeded, but when the connections are only implicit (product is inherently symbolic of self-threat domain), self-repair can be successful. We further show that these differential effects of product connection explicitness are mediated by rumination: explicit connections induce rumination about the self-threat, which undermines self-repair, whereas implicit connections cause no rumination, facilitating self-repair. Our research provides a reconciliation of conflicting findings on self-repair in previous research, and also shows that despite the differences in efficacy, consumers compensate regardless of whether product connections are implicit or explicit, which has implications for consumer well-being.

Keywords: self-concept, identity, compensatory consumption, materialism, self-threat, self-discrepancy

P eople routinely experience setbacks in daily life, and often these setbacks can be distinctly personal: being passed over for a promotion at work, having a journal submission rejected, or being turned down for membership in an exclusive club. The setbacks are particularly personal because they may represent threats to fundamental aspects of self-identity—in the previous examples, threats to power, intelligence, and belongingness. Not surprisingly, such self-threats produce aversive states from which people are motivated to escape (Rucker and Galinsky 2013).

Although there are multiple avenues available for coping with a damaged self-identity, one route is through symbolic consumption (Wicklund and Gollwitzer 1982). Possessions can serve to signal, either to the self or to others, success, competence, or mastery of a self-identity domain

(Mandel et al. 2017; Rucker and Galinsky 2013), and provide a means for individuals to cope with self-threats (Gao, Wheeler, and Shiv 2009; Rucker, Galinsky, and Dubois 2012). Thus, individuals experiencing a self-threat may be drawn to products that are symbolic of the self-threat domain. Such processes may explain why Janice, a manager who had her project funding abruptly curtailed by her boss, is suddenly very enamored of the Aston Martin billboard ad she passes every day, or why Bill, a student who received a bad grade on his physics exam, picks up the *Economist* at the convenience store rather than his usual *GQ*.

The question we address in this research is whether such symbolic compensatory consumption works. That is, does compensatory consumption help in restoring an individual's self-identity on the threatened domain? Although a large literature has established that consumers routinely engage in compensatory consumption behaviors in response to self-threats (for reviews, see Mandel et al. 2017; Rucker and Galinsky 2013), research addressing its efficacy is both sparse and inconsistent. In this research, we test the proposition that whether compensatory consumption restores the damaged aspect of self depends at least in part on contextual factors associated with the product. Specifically, we posit that the efficacy of compensatory consumption depends on the extent to which the compensatory product is explicitly connected to the self-threat. Most research on compensatory consumption assumes (and typically verifies via pretests) that a particular product is inherently (implicitly) associated with self-domains such as power, intelligence, belonging, and so forth. For example, fountain pens (Gao et al. 2009) and dictionaries (Kim and Rucker 2012) are considered to be inherently symbolic of intelligence. However, the connections between a product and a self-domain can also be made explicit, particularly through marketing tactics. Examples include compensating for threats to competence by buying a product promoted as "A Skillful Board Game" (Lisjak et al. 2015, 1192), and compensating for threats to intelligence with a pen marketed as a "Brain Pen" (Kim and Gal 2014, 532).

Across seven experiments, we demonstrate that whether successful self-repair follows from compensatory consumption depends on the extent to which the compensatory product's inherent symbolic linkage to the threatened self-domain aspect is made explicit. We show that compensation for self-threats with products that are implicitly connected to the self-threat leads to successful self-repair. However, when the compensatory products are explicitly connected to the threatened identity domain, self-repair is thwarted. We further show that these differential self-repair outcomes are mediated by rumination about the self-threat: explicit connections induce rumination about the self-threat, which impedes self-repair, whereas implicit connections do not cause rumination, thus facilitating

self-repair. We also demonstrate an important boundary condition to these effects by showing that when the self-threats themselves are implicit (do not directly or explicitly threaten a self-concept domain), explicit connections can also facilitate self-repair. Importantly, we show that consumers are apparently unaware of these differential effects, as they show the same compensatory consumption preferences regardless of whether the symbolic connections to the self are implicit or explicit. Thus, using the examples noted earlier, whether the thought of an Aston Martin successfully restores Janice's sense of power may depend on whether the billboard for Aston Martin that she notices includes its tagline, "Power, Beauty, and Soul," and whether purchasing the *Economist* restores Bill's sense of intelligence may depend on whether he notices or remembers its promotion as "A Gymnasium for the Mind."

SELF-THREATS AND COMPENSATORY CONSUMPTION

People are highly motivated to maintain a positive and stable self-concept (Leary et al. 1995). Thus, when people experience threats to important aspects of the self, particularly core aspects such as self-esteem, belonging, efficacy (power, control), and meaningful existence (Williams 2007), it creates discrepancies between actual and ideal self-concepts, resulting in uncomfortable, aversive states that people are motivated to remedy by bolstering or boosting the particular aspect of the self that is threatened (Higgins 1987; Kim and Rucker 2012). Although there are multiple avenues available for resolving these self-discrepancies (e.g., self-improvement, affirming the self in a different domain, distraction; for a review, see Mandel et al. 2017), one strategy is to engage in symbolic behaviors that signal mastery or competence on the threatened self-domain (*symbolic self-completion*; Wicklund and Gollwitzer 1982). Moreover, such symbolic signaling can be accomplished through products and possessions. Thus, when people experience threats to important aspects of their self-identity, they may compensate by acquiring, displaying, or even simply thinking about products that signal success on the threatened domain, which Rucker and colleagues refer to as *within-domain compensatory consumption* (Lisjak et al. 2015; Mandel et al. 2017).[1]

Compensatory consumption has been demonstrated across a broad spectrum of self-threats (Mandel et al. 2017). For example, relative to nonthreatened participants, participants whose power was threatened were willing to pay more for high-status products (Rucker and Galinsky

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1   We adopt Rucker and Galinsky's (2013, 207) definition of *compensatory consumption* as "the desire for, acquisition, or use of products to respond to a psychological need or deficit." Thus, compensatory consumption captures a broad variety of phenomena beyond actual consumption.

2008, 2009) and preferred products with bigger status logos (Lee and Shrum 2012; Rucker and Galinsky 2009), those whose intelligence was threatened were more likely to choose and were willing to pay more for products signaling intelligence (Gao et al. 2009), and those who were socially excluded expressed greater preferences for products signaling affiliation (Mead et al. 2011). Similar findings have been observed for self-threats related to one's self-esteem (Lee and Shrum 2012; Lee, Shrum, and Yi 2017), personal freedom (Levav and Zhu 2009), and social system (Cutright et al. 2011).

The Efficacy of Compensatory Consumption

Despite considerable evidence that consumers use possessions to compensate for self-threats, one question that has received relatively little attention is whether such compensatory consumption is actually successful in restoring the threatened self-concept. Although little, if any, research has specifically investigated the efficacy of compensatory consumption, at least two published studies have reported evidence of self-identity repair following compensatory consumption. Gao et al. (2009, experiments 1 and 3) first threatened participants on a self-domain (e.g., intelligence, exciting person) by manipulating their confidence in these traits, and then manipulated the opportunity to symbolically compensate with products by having participants either choose from a list of products that they could win in a lottery (experiment 1) or that were ostensibly to be used as prizes in future studies (experiment 3) that were either associated or not associated with the self-threat domain. Their findings showed that compensating for the self-threat with products symbolically related to the self-threat domain restored the self-ratings of threatened individuals to the same level as those who were not threatened. These findings are consistent with research showing that the need for self-expression through brands is finite and can be satiated through identity-related consumption (Chernev, Hamilton, and Gal 2011).

Although the Gao et al. (2009) findings show that compensatory consumption may effectively satiate the need to bolster self-identity following a self-threat, other research suggests that it may not. Lisjak et al. (2015) reported the results of a series of experiments that investigated the effects of compensatory consumption on self-control. They found that compensating with products that signal success on the self-threat domain (within-domain compensatory compensation) resulted in increased rumination about the self-threat, which in turn reduced self-control on subsequent tasks, compared to threatened participants who compensated with products that signaled success on a self-domain unrelated to the threat (across-domain compensation). Presumably, such within-domain compensation served to keep the previous threat or failure active in memory, cuing ruminative thoughts.

Although Lisjak at al. (2015)'s research does not directly address self-repair, the finding that (within-domain) compensatory consumption increases rumination about the self-threat strongly suggests that such compensatory consumption should impede self-repair. Self-threatened individuals engage in compensatory consumption to escape an aversive state by seeking out products that signal success on the threatened domain. However, Lisjak et al.'s research suggests that such compensation can have the insidious effect of keeping the aversive state top-of-mind. In other words, within-domain compensatory consumption may actually prolong the aversive state from which threatened individuals are trying to escape. Even worse, if those individuals are unaware of these effects, they may actually continue to seek out compensatory products that not only do not fulfill their goal, but make it worse. These findings seemingly run counter to the findings of Gao et al. (2009), who demonstrated self-repair through within-domain compensatory consumption.

Explaining the Discrepancies. The discrepancies just noted raise the question of how to explain them. One possibility, which provides the motivation for this research, relates to differences in the extent to which the connections between the compensatory product and the self-threat domain are made explicit. As noted earlier, researchers testing compensatory consumption typically use products that are pretested for their inherent symbolic connections to the self-threat domain, and this was true for the research reported by Gao et al. (2009), which demonstrated self-repair through compensatory consumption. Importantly, the implicit symbolic links are evidenced by the fact that these products are not presented with any explicit information (marketing slogans, brand names) that connects them to the threatened self-domain. We refer to these examples as *implicit connections* because the connection is not overtly referenced but rather inferred from the inherently symbolic connections between the product and the self-concept domain.[2]

In contrast, in the research reported by Lisjak et al. (2015), which focused on the effects of within- versus across-domain compensatory consumption, the symbolic connections between the compensatory products and the self-threat domain were made explicit. For example, participants who were threatened on the domain of competence were given the opportunity to compensate with products such as a book titled *Genius: Simple Ways to Become Instantly Smarter*, and participants who were threatened on

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2   Here (implicit connections) and later (implicit threats, experiment 5) we use the term *implicit* to indicate the lack of any overt or explicit reference to a self-threat domain. Our usage is conceptually similar to the distinction between explicit attitude measures (direct, overt measure of the construct) and implicit attitude measures (inferred from other properties such as accessibility). Bhattacharjee, Berger, and Menon (2014) also use the term *explicit* to refer to overt references to identity domains.

the domain of sociability were asked to write about a time in which they had played a "Social Board Game" (Lisjak et al. 2015, 1192) that made them feel connected to their friends and happy with their relationships. We refer to these examples as *explicit connections* because aspects of the product—in this case the product name—explicitly reference the self-threat domain. The results showed that compensation with these explicitly connected products resulted in rumination about the self-threat, which arguably should impede self-repair.

Given these findings, it is possible that the explicit connections between the self-threat domain and the compensatory products is what is driving rumination about the self-threat, rather than within-domain compensation more generally. If so, then explicit connections should impede self-repair, but implicit connections should not. Our research tests these possibilities.

Explicit versus Implicit Connections and Compensatory Consumption. Our reasoning regarding the distinction between explicitly versus implicitly connected compensatory products raises additional questions about compensatory consumption more generally. For example, do threatened individuals compensate for self-threats regardless of whether the compensatory products are explicitly or implicitly connected to the self-threat? Moreover, if they do, do they prefer one over the other? There are at least three possibilities. First, given that people are likely unaware of the connection between an experienced self-threat and their preferences for products that signal success on the threatened dimension, they should compensate regardless of whether the compensatory products are implicitly or explicitly connected, consistent with previous research (Bhattacharjee et al. 2014; Kim and Gal 2014; Rucker and Galinsky 2008, 2009). A second possibility is that threatened individuals may compensate with both implicitly and explicitly connected products, but the strength of the effects may be greater for explicitly connected products because the connections are more overt. A third possibility is that individuals will compensate through implicitly connected products but not explicitly connected products. Despite the studies just noted showing compensatory consumption with explicitly connected products, it is also reasonable to think that explicit connections may weaken or eliminate the compensatory consumption effects because they draw conscious attention to the relation between the product and the recent self-threat, which may result in mental processes similar to those underlying contrast effects in priming research (Martin 1986; Wyer and Srull 1989). Our research also tests these possibilities.

Explicit Connections, Explicit Threats, and Underlying Processes

Explicit versus Implicit Product Connections. We have proposed that whether compensatory consumption successfully repairs a damaged self-concept depends on the extent to which the compensatory product is explicitly connected to the self-threat domain. To reiterate, we consider a connection to be explicit if aspects of the product explicitly reference the self-threat domain. For example, a potential compensatory product with the slogan "The intelligent choice" is unambiguously explicitly linked to an intelligence threat, as the slogan uses the exact same word as the self-threat. Similarly, a product labeled as "the smart choice" (intelligence = smart) or "the brain pen" (intelligence = brain) should also provide an explicit link, but in these cases the slogans and self-threats do not use identical descriptors, but ones that are very closely related semantically (synonyms). In contrast, providing a simple choice of a pen would be an example in which the potential compensatory product is implicitly connected to the self-threat, because pens are inherently symbolic of intelligence (Gao et al. 2009).

These examples of explicitly and implicitly connected products can be viewed as representing opposite ends of an explicitness continuum. Even in the examples in which the links are between the explicit self-threat (e.g., intelligence) and synonyms of intelligence (smart, brainy), the semantic links are likely so strong that there is little difference in the strength of activation between exact words and its synonyms. In other cases, however, semantic links may exist that are arguably weaker. Consider a potential compensatory product for a power threat that uses a slogan that references status. In this case, the level of explicitness rests on the extent to which status and power are sufficiently closely linked in memory that activation of one concept (status) will activate the other concept (power). In such cases, the level of activation may be less than when more explicit links (in command, power) are used. If so, then less rumination should occur when the links are less explicit than when they are more explicit. However, to the extent that the less explicit links are sufficient to reactivate the self-threat domain, less explicit links should result in more rumination than when the links are only implicit.

Explicit versus Implicit Threats. The general process we have outlined is one in which an aspect of a consumer's self-concept is threatened, creating a discrepancy between the actual and ideal selves, which activates a goal to reduce the self-discrepancy (Higgins 1987; Mandel et al. 2017). This process assumes that the self-threat (and corresponding goal) is explicitly stored in memory, and then reactivated when consumers consider products that are explicitly connected to the self-threat. For example, when an individual receives a poor score on a standard intelligence test, the negative performance has overt connections to failure on the intelligence

domain. Likewise, typical experimental manipulations of self-threats ask participants to recall and write about a time in which someone had power over them (Rucker and Galinsky 2008), ask them to recall a time in which they had not felt as competent as they would have desired (Lisjak et al. 2015), or give participants bogus feedback that they performed poorly on a cognitive intelligence test (Kim and Gal 2014). In these cases, the self-threat is clear and explicit. Participants in a study may not be aware of the purpose of such experimental manipulations or immediately assess the impact of the threat on their self-concept. However, when an individual facing an explicit threat subsequently compensates with an explicitly connected product, the product's explicit references to the threatened domain should activate the failure-related cues contained in the explicit threat experience, resulting in threat-related rumination.

However, suppose that the threat itself is not an explicit one, but rather one that is subtler and more implicit. Consider the research reported by Gao et al. (2009), which showed that self-threat deficits may occur in the absence of explicit references to a threat domain. In their experiments, rather than explicitly implementing a self-threat, they merely undermined confidence in a self-concept domain. Specifically, rather than having participants recall a time in which they did not feel as intelligent, competent, or exciting as they would desire, all participants listed personal characteristics that suggested they were intelligent (experiments 1 and 2), competent, or exciting (experiment 3). However, prior to these tasks, which actually mimic self-concept *boosts*, the researchers manipulated participants' general self-confidence by having them write with their nondominant hand or list experiences in which they felt doubt or uncertainty. Importantly, the confidence threat was general, not specific to any particular self-concept domain, and thus participants compensated in response to a general self-concept threat (Gao et al. 2009). In these cases, given that there were no explicit and specific threats to participants' self-concepts, there should not be a specific self-threat stored in memory. If so, explicitly connected compensatory products may also result in self-repair, because no explicit threat exists in memory to be activated, and consequently there is no specific threat to be ruminated upon. Our research tests these possibilities.

Summarizing, Lisjak et al. (2015) presented evidence that within-domain compensatory consumption may undermine self-control, and by extension, self-repair. They proposed that the symbolic relation between the compensatory product (e.g., a pen) and the self-threat domain (e.g., intelligence) may reactivate the self-concept domain that had been previously threatened, which cued ruminative thoughts about the self-concept deficit. In their studies, they further showed that the process of rumination inhibited self-control. We are suggesting a slightly different process: it is not the symbolic connection per se that reactivates the self-threat and induces rumination, but rather that self-threat

reactivation occurs when the connections between the compensatory product and the self-threat domain are explicit, which was the case in the compensatory stimuli used by Lisjak et al. (2015). If our reasoning is correct, it provides a compelling reconciliation of the findings of Lisjak et al. (2015) and Gao et al. (2009), the latter of whom documented self-repair through within-domain compensatory consumption with implicitly connected products.

Specifically, we expect that 1) threatened individuals will show a preference for products symbolically related to self-threat domain, regardless of whether the products' connection to the threatened identity domain is implicit or explicit, 2) compensating with implicitly connected products will result in self-repair to the damaged self-identity domain, but compensating with explicitly connected products will impede self-repair, 3) these differential effects of compensating with implicitly versus explicitly connected products on self-repair will be mediated by rumination, and 4) when the self-threats themselves are implicit, compensation via explicitly connected products will also result in self-repair. The general model is shown in figure 1.

OVERVIEW OF EXPERIMENTS

We tested our hypotheses in seven experiments using a multistep process that varied the domain of the self-threat (power, intelligence, sociability), the compensation process (voluntary, forced), the explicitness of the connections, the method to assess self-repair (pre- vs. post-compensation measures, sequential compensation measures), and sample composition (US MTurk participants, Indian college students, French master's students). Experiment 1 tested the self-repair hypothesis. Experiment 2 provided a conceptual replication of the self-repair hypothesis and also tested the hypothesis that compensatory consumption will occur regardless of whether the compensatory products are implicitly or explicitly connected to the self-threat. Experiments 3a, 3b, and 4 tested the hypothesis that the differential effects of compensatory consumption via implicitly versus explicitly connected products is mediated by rumination. Finally, experiment 5 and web appendix experiment 1 tested a boundary condition of the hypothesis that explicitly connected compensatory products impede self-repair—namely, that when the self-threats are implicit, explicitly connected products will also facilitate self-concept repair.

In all experiments, we analyzed the data only after all measures had been collected. We excluded participants based on a priori rules (described within each study) that were applied before any data analyses. We included mood as a covariate in all studies because self-threats have been shown to affect mood in previous research (Duclos, Wan, and Jiang 2013; Vohs and Heatherton 2004). All participants provided informed consent. All measures and manipulations are provided in the web appendix.

FIGURE 1

THEORETICAL MODEL OF THE COMPENSATORY AND SELF-REPAIR PROCESS

Explicit self-threat

Implicit self-threat
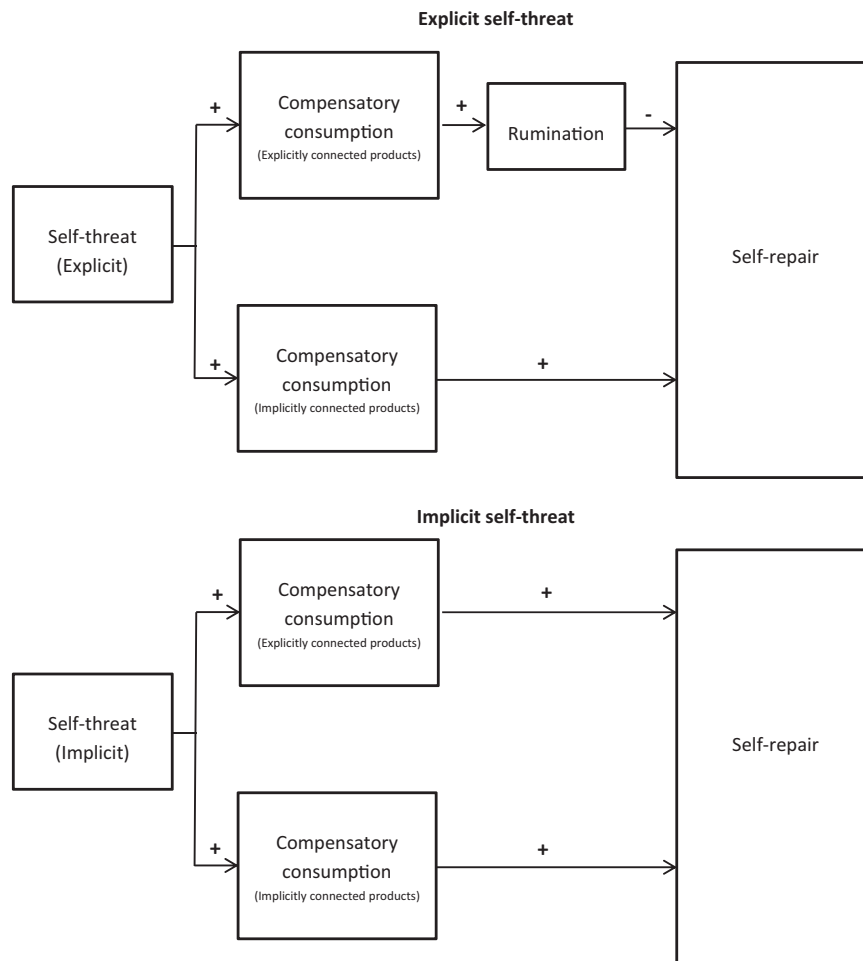
EXPERIMENT 1: EXPLICIT VERSUS IMPLICIT CONNECTION AND SELF-REPAIR (INTELLIGENCE THREAT)

Experiment 1 tested the hypothesis that compensating with implicitly connected products leads to self-repair, but compensating with explicitly connected products does not. We either threatened or did not threaten participants on the domain of intelligence, and then gave them the opportunity to compensate for the self-threat but manipulated whether they compensated via products with either implicit or explicit connections to the self-threat. We then assessed whether this initial compensation opportunity would lead to self-repair by providing participants with a second opportunity to compensate for the intelligence threat by assessing their relative preference for an intelligence-related product compared to a product unrelated to

intelligence. If the initial compensatory choice leads to self-repair, and thus the need to bolster intelligence is satiated, then threatened participants should not continue to seek out symbols of intelligence, and thus should not display greater preferences for subsequent intelligence-related products than should nonthreatened participants. However, if compensatory consumption does not restore the self on the domain of intelligence, then threatened participants should continue to display greater preferences for subsequent intelligence-related products than should nonthreatened participants.

Method

Participants, Design, and Procedure. Five hundred eight members of the Amazon Mechanical Turk (MTurk) online panel ($M_{age} = 33.2$ years; 321 women) participated

in return for a nominal fee and were randomly assigned to conditions in a 2 (intelligence threat: yes vs. no) × 2 (product connection: explicit vs. implicit) between-subjects design. Participants were told that they would be participating in several short studies. First, in a study ostensibly about understanding the different ways in which people recount past experiences, participants were either threatened on intelligence by writing about a time when they had questioned their own intelligence or related abilities (Lisjak et al. 2015) or not threatened (writing about their last visit to a grocery store).

Next, we provided participants with an opportunity to compensate using a choice task adapted from Gao et al. (2009) and manipulated whether the connections between the products and the self-threats used in the choice task were implicit or explicit. Framed as a prize selection study, the participants were asked for their help in identifying the prizes that we could give to participants in our future studies. Participants were presented with three products, also adapted from Gao et al. (2009), that naturally symbolize intelligence: *Encyclopedia Britannica*, the board game *Scrabble*, and a subscription to *National Geographic* magazine. In the explicitly connected product condition, each of the products was presented along with a slogan that made the product's connection with intelligence explicit (e.g., the *Scrabble* board game had the slogan "The smartest mind game," with "smart" being explicitly connected to intelligence), whereas in the implicitly connected condition, these same products were presented without any slogans. Participants were asked to select one of the products as their choice for the most suitable prize. This choice task represented the initial compensatory consumption.

After participants completed a filler task that asked them about their lifestyle preferences, which was included to disguise the purpose of the study, participants completed an ostensibly unrelated study on consumer preferences. They were given two products and asked to indicate which they preferred, one of which was related to intelligence (a book entitled *1001 Inventions That Changed the World*) and the other unrelated to intelligence (a shirt), along a nine-point scale (1 = surely prefer the shirt, 9 = surely prefer the book). Order was counterbalanced. Next, participants completed a three-item mood scale (Cutright et al. 2011), and scores on the three items were averaged to form a composite measure ($\alpha = .86$). Finally, participants provided demographic information and were asked about their perceptions of the purpose of the study.

Results and Discussion

Exclusion Criteria. Data from 46 participants (9%) were excluded from the analyses: 28 who did not write anything or wrote nonrelevant content in the self-threat task, 15 who guessed the purpose of the study, and three who did not pass an attention check. The attention check consisted of gender and age items that were measured at the beginning and end of the study. Participants failed the attention check if their answers did not match. The data were analyzed for the remaining 462 participants.

Hypothesis Testing. We expected that threatened participants compensating with explicitly connected products would not experience self-repair, and thus would display greater preferences for a product symbolic of intelligence relative to nonthreatened participants. In contrast, we expected that threatened participants who compensated with implicitly connected products would experience self-repair, and thus would not show greater preferences for the intelligence-related product compared to nonthreatened participants. To test these hypotheses, we conducted a 2 (threat: yes vs. no) × 2 (product connection: explicit vs. implicit) ANCOVA with preference for the intelligence-related product as the dependent variable and mood as the covariate. (The results did not materially differ when the covariate was excluded from the analysis.) The results of this analysis can be seen in figure 2.

There was a marginally significant main effect of threat ($F(1, 457) = 3.17$, $p = .076$). More direct to our hypotheses, the expected threat × product connection interaction was significant ($F(1, 457) = 4.46$, $p = .035$). Threatened participants who initially compensated via explicitly connected products again demonstrated compensatory effects by displaying a greater preference for intelligence-related products ($M = 5.88$, SE $= .31$) than did nonthreatened participants ($M = 4.73$, SE $= .28$; $F(1, 457) = 7.71$, $p = .006$). Thus, those who compensated for the intelligence threat with explicitly connected products continued to seek products symbolic of intelligence after compensatory consumption, indicating no self-repair, consistent with the findings of Lisjak et al. (2015). In contrast, threatened participants who compensated with implicitly connected products ($M = 4.86$, SE $= .31$) did not differ from nonthreatened participants ($M = 4.96$, SE $= .28$; $F < 1$) on preferences for intelligence-related products, indicating that compensating with implicitly connected products resulted in self-repair, consistent with the findings of Gao et al. (2009).

The findings of experiment 1 provide support for our hypothesis that compensatory compensation is successful in repairing the self when the connection between the product and threat domain is implicit. However, when the connection is made explicit, threatened participants continue to seek threat-related products on a subsequent compensatory opportunity, indicating a lack of self-repair. In experiment 2, to demonstrate the robustness of these effects, we provide a conceptual replication of experiment 1 in which we threaten a different self-domain (power) and use a different method of manipulating compensatory consumption that also allows us to test the hypothesis that threatened individuals will compensate for the threat regardless of whether

FIGURE 2

PREFERENCES FOR INTELLIGENCE-RELATED PRODUCT AS A
FUNCTION OF THREAT AND PRODUCT CONNECTION
(EXPERIMENT 1)
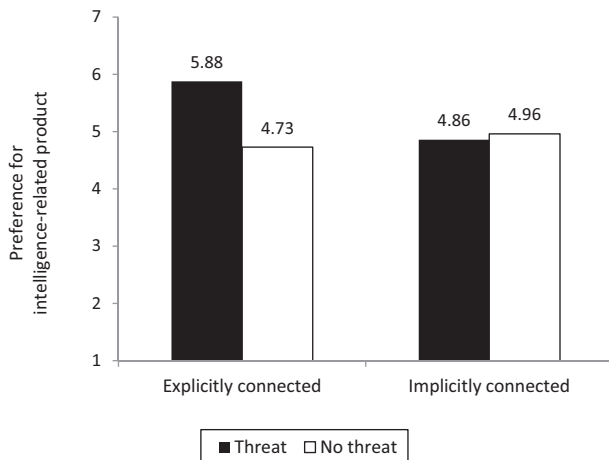
the compensatory product is explicitly or implicitly connected to the threat domain.

EXPERIMENT 2: EXPLICIT VERSUS IMPLICIT CONNECTION AND SELF-REPAIR (POWER THREAT)

The design of experiment 2 was similar to that of experiment 1. We first threatened or did not threaten participants on a self-relevant domain (power) and then gave them the opportunity to compensate with products that were either explicitly connected, implicitly connected, or unconnected to status, followed by a second opportunity to compensate. However, the method of the initial compensation was different from that of experiment 1. In experiment 1, the initial compensation was "forced," in the sense that participants could choose only products that were manipulated to be threat-relevant. This procedure did not allow us to test the hypothesis that threatened participants would spontaneously compensate with symbolic products for both explicitly and implicitly connected products. Thus, in experiment 2, we measured participants' initial compensation by assessing their willingness to pay for products symbolically related to the threat (status products).

We manipulated product connection using the same procedures as experiment 1. We also included a condition in which the compensatory products were unconnected to the threat domain to rule out the possibility that the self-threat increased willingness to pay for any product. We expected that threatened participants would be willing to pay more for status products than would nonthreatened participants

for both explicitly and implicitly connected products, but that willingness to pay for nonstatus products would not differ by threat condition.

We next tested whether the initial compensatory consumption would lead to self-repair by providing participants with a second opportunity to compensate for the power threat by measuring their preference for additional power-related choices (high-power vs. low-power job role, importance of power-related job characteristics; Inesi et al. 2011). If compensatory consumption leads to self-repair (satiation), then threatened participants should not display greater preferences for subsequent power-related choices than nonthreatened participants. However, if compensatory consumption does not restore the self on the domain of power, then the threatened participants should continue to display greater preferences for subsequent power-related choices than should nonthreatened participants. In addition, threatened individuals in the unconnected condition, who did not have the opportunity to compensate initially because the product was not symbolically connected to the self-threat domain, should still seek to bolster their feelings of power, and thus should be willing to pay more for power-related choices than those who were not threatened. This complex series of tests of compensatory consumption provides a very conservative test of our hypotheses.

Method

Participants, Design, and Procedure. One hundred forty-five members of the MTurk online panel ($M_{age} = 39.7$ years; 95 women) participated in return for a nominal fee and were randomly assigned to conditions in a 2 (threat: yes vs. no) $\times$ 3 (product connection: explicit vs. implicit vs. none) between-subjects design. Participants were told that they would be completing several short studies. In the first study, which used the same cover story as experiment 1, participants were either threatened or not on the self-domain of power. Those in the power-threat condition were asked to recall and write about an experience in which someone else had power over them (Rucker and Galinsky 2008), whereas those in the no-threat condition were asked to write about the last time they went to the grocery store.

Thereafter, as part of a separate study about willingness to pay for different products, participants were either presented with two explicitly connected products, two implicitly connected products, or two unconnected (nonstatus) products, and asked to indicate their willingness to pay for each of the two. Based on previous research, we chose a watch and a pen as status products (symbolic of power; Rucker and Galinsky 2008) and a microwave oven and chair as nonstatus products. Explicitly connected products were accompanied by slogans that made their connection to the domain of power explicit (e.g., a luxury watch carried the slogan "For Those in Command, Every Moment,"

with "in command" explicitly connected to power). Implicitly connected products were the same status products but without the accompanying slogans. The unconnected, nonstatus products also carried no slogan.

Participants then indicated their willingness to pay for these products along a 12-point scale ranging from 10% of the retail price to 120% of the retail price (Rucker and Galinsky 2008). We averaged the willingness-to-pay scores for the two power-related products (watch, status pen) to form a composite two-item measure ($r = .58$). Similarly, we averaged the willingness-to-pay scores for the two non-threat-related products to form a composite two-item measure ($r = .64$).

Next, as part of another ostensibly unrelated study about job preferences, participants were asked to read two job descriptions, adapted from Smith, Wigboldus, and Dijksterhuis (2008), that differed on whether the job included supervising others (high-power role) or being supervised by others (low-power role). (None of the descriptions or items explicitly mention power; see web appendix.) Participants then indicated which role they preferred on a nine-point scale, with higher numbers indicating a greater preference for the high-power role. Order of descriptions was counterbalanced. Thereafter, as part of another study to understand the characteristics of an ideal job, participants indicated the importance of job characteristics (Inesi et al. 2011) that were either related to power (two items: high position within the organization, control over key resources) or unrelated to power (two items: friendly working atmosphere, interesting work), along a nine-point scale (1 = not very important, 9 = extremely important). We computed a composite measure of power-seeking by averaging the three items measuring preference for and importance of power-related job characteristics ($\alpha = .85$) and a composite measure of non-power-seeking by averaging the two measures unrelated to power ($r = .58$).

Finally, participants indicated their current mood with the same three-item scale used in experiment 1 ($\alpha = .87$), provided demographic information, and were asked about their perceptions of the purpose of the study. Along with mood, we also included gender as a covariate because the items chosen for status products (watch, pen) may appeal more to men than to women, and there is some evidence that men have a greater need for power than do women (Chusmir and Parker 1984).

Results and Discussion

Exclusion Criteria. Data from 13 participants (9%) were excluded from the analyses (10 who guessed the purpose of the study, two who did not write anything or wrote nonrelevant content in the self-threat task, and one who indicated he or she did not understand the willingness-to-pay task), leaving 132 participants for analyses.
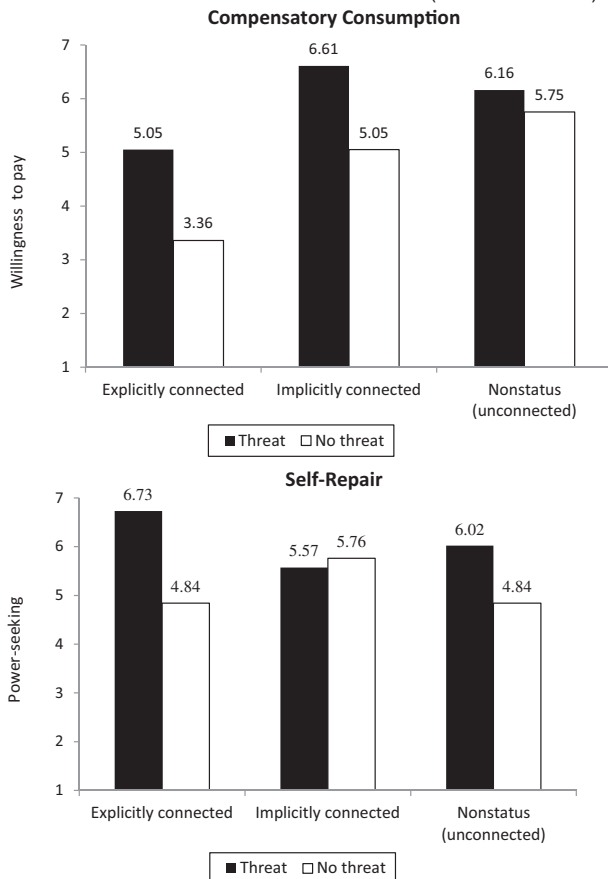
Hypothesis Testing: Compensatory Consumption. We expected that participants who were threatened on power would be willing to pay more for status products compared to those who were not threatened, and that this would be true regardless of whether the status products were explicitly or implicitly connected to the power domain. In contrast, we expected that willingness to pay for nonstatus products would not differ by threat condition.

To test these hypotheses, we conducted a 2 (power threat: yes vs. no) × 3 (product connection: explicit vs. implicit vs. none) analysis of covariance (ANCOVA), with willingness to pay as the dependent variable and mood and gender as covariates. (The results did not materially differ when the covariates were excluded from the analyses.) The results of this analysis can be seen in the top panel of figure 3. There was a main effect of product connection $F(2, 124) = 7.49$, $p = .001$) and a main effect of threat ($F(1, 124) = 8.54$, $p = .004$); gender was marginally significant ($F(1, 124) = 3.66$, $p = .058$). As expected, threatened participants were willing to pay more for the power-related products than were nonthreatened participants for both explicitly connected ($M_{threat} = 5.05$, SE = .52 vs. $M_{no\ threat} = 3.36$, SE = .49; $F(1, 124) = 5.64$, $p = .02$) and implicitly connected products ($M_{threat} = 6.61$, SE = .52 vs. $M_{no\ threat} = 5.05$, SE = .49; $F(1, 124) = 4.70$, $p = .03$), and these effects did not differ (interaction: $F < 1$). These results replicate the findings of Kim and Gal (2014). In contrast, willingness to pay for nonstatus products did not differ by threat conditions ($M_{threat} = 6.16$, SE = .51 vs. $M_{no\ threat} = 5.75$, SE = .49; $F < 1$).

Although our hypotheses regarding compensation for both explicitly and implicitly connected products was strongly supported, as was our hypothesis that there would be no differences in threat conditions for willingness to pay for unconnected (non-status) products, the threat × product connection interaction was not significant ($p = .37$). This appears to be because even though the difference in willingness to pay for non-status products between threat and no-threat conditions was not close to significance ($F < 1$), it was nevertheless in the same direction as predicted for explicitly and implicitly connected products, and apparently of sufficient magnitude to render the interaction non-significant. There was also an unexpected main effect of product connection: willingness to pay was greater when the connection was implicit than when it was explicit for both threat and no-threat conditions. We interpret this finding as indicating that participants found the product to be less appealing when the slogan was included than when it was not.

Hypothesis Testing: Self-Repair. We expected that threatened participants compensating with explicitly connected products would not experience self-repair, and thus would continue to seek power, reflected by greater preferences for the high-power role and power-related job

FIGURE 3

COMPENSATORY CONSUMPTION AND SELF-REPAIR AS A FUNCTION OF PRODUCT CONNECTION (EXPERIMENT 2)

main effects of threat ($F(1, 124) = 5.91$, $p = .02$) and mood ($F(1, 124) = 12.17$, $p = .001$) were significant, and gender was marginally significant ($F(1, 124) = 3.24$, $p = .074$). More central to our hypotheses, the threat × product connection interaction was marginally significant ($F(2, 124) = 2.42$, $p = .093$). As expected, threatened participants who initially compensated via explicitly connected products again demonstrated compensatory effects by displaying greater power-seeking ($M = 6.73$, SE $= .49$) compared to nonthreatened participants ($M = 4.84$, SE $= .46$; $F(1, 124) = 7.86$, $p = .006$). Thus, those who compensated for the power threat with explicitly connected products continued to seek power after compensatory consumption, indicating no self-repair as a function of the initial compensatory task. In contrast, threatened participants who compensated with implicitly connected products did not differ on power-seeking ($M = 5.57$, SE $= .49$) compared to nonthreatened participants ($M = 5.76$, SE $= .46$; $F < 1$), indicating that compensating with implicitly connected products in the initial compensation task resulted in self-repair.

In addition, as expected, threatened participants who were not initially given a chance to compensate (i.e., received nonstatus products) did show compensation effects on the power-seeking measure, with threatened participants demonstrating marginally more power-seeking ($M = 6.02$, SE $= .49$) than nonthreatened participants ($M = 4.84$, SE $= .46$; $F(1, 124) = 3.01$, $p = .085$). There were no significant effects for the importance ratings of job characteristics unrelated to power (all Fs <1).

The findings of experiment 2 provide support for our hypothesis that threatened participants compensate for self-threats regardless of whether the products are explicitly or implicitly connected to the threatened self-identity domain. Threatened participants were willing to pay more for status-related (but not status-unrelated) products regardless of their connection to the threatened domain. However, this compensation was successful only when the connection between the product and threat domain was implicit. When the connection was made explicit through the marketing slogan, threatened participants continued to seek power on a subsequent compensatory opportunity, indicating that the initial compensatory opportunity did not result in full repair of the damaged self.

We also addressed the possibility that self-threats increase willingness to pay regardless of whether they are status-related. Consistent with previous research (Rucker and Galinsky 2008), threats to power had no effect on willingness to pay for nonstatus products. The general design and pattern of results provides a very strong test of our hypotheses. In particular, the use of the sequential compensation tasks required the following pattern of results for hypothesis support: 1) in the first task, compensatory consumption is observed for both explicitly and implicitly connected products, but not for unconnected products; 2) in

characteristics relative to nonthreatened participants. In contrast, we expected that participants who compensated with implicitly connected products would experience self-repair, would consequently not continue to seek power, and thus would show no preferences for the high-power role and power-related job characteristics compared to nonthreatened participants. In addition, we expected that threatened participants exposed to nonstatus products, and thus who had not previously had an opportunity to compensate with threat-related products, would compensate for the threat and express greater preferences for the power-related items compared to nonthreatened participants.

To test these hypotheses, we conducted a 2 (power threat: yes vs. no) × 3 (product connection: explicit vs. implicit vs. none) ANCOVA with power-seeking as the dependent variable and mood and gender as covariates. The results of this analysis can be seen in the bottom panel of figure 3. (Some results were no longer significant when the covariates were not included in the analyses. The results without covariates are provided in the web appendix.) The

the second task, compensatory consumption is again observed for explicitly connected products, is no longer observed for implicitly connected products, but is now observed for unconnected products. All of these effects were in fact demonstrated.

In the next three experiments, we examine the processes underlying the effects observed in experiments 1 and 2. Experiments 3a, 3b, and 4 use an experimental causal chain design to test our hypotheses (Spencer, Zanna, and Fong 2005). The proposed causal chain is that compensating with explicitly (but not implicitly) connected products triggers rumination, and this rumination in turn impedes self-repair. Experiment 3a tests the first link in the causal chain (compensating with explicitly connected products causes rumination about the self-threat, but compensating with implicitly connected products does not). Experiment 3b conceptually replicates experiment 3a, and also varies the level of explicitness of the product connections to test the hypothesis that less explicit connections will result in less rumination about the self-threat than will more explicit connections. Experiment 4 tests the second link in the causal chain (rumination about self-threats impedes self-repair). In addition, we also include manipulation checks for the product connection manipulations (experiments 3a, 3b).

EXPERIMENT 3A: COMPENSATING WITH EXPLICITLY CONNECTED PRODUCTS CAUSES THREAT RUMINATION

Experiment 3a tested whether the type of connections (implicit vs. explicit) between the compensatory product and the threatened identity-domain impacts rumination about the self-threat. We expected that threatened participants who compensate with explicitly connected products would ruminate more about the self-threat than would non-threatened participants, whereas compensating with implicitly connected products would not increase rumination compared to nonthreatened participants.

Method

Participants, Design, and Procedure. Participants were 108 Indian business school student volunteers ($M_{\text{age}} = 22.5$ years; 37 women). They were randomly assigned to a 2 (intelligence threat: yes vs. no) × 2 (product connection: explicit vs. implicit) between-subjects design. First, participants were threatened or not on the domain of intelligence with the same threat manipulation used in experiment 1. Next, we manipulated product connection and compensatory consumption with the same choice task used in experiment 1 (forced compensation) but with a different associated slogan for the products in the explicitly connected condition. As in experiment 1, in the explicitly

connected product condition, each of the products was presented along with a slogan that made the products' connection with intelligence explicit (e.g., *National Geographic* magazine had the slogan "Magazine for the intelligent reader"), whereas in the implicitly connected product condition the products were presented without slogans. Participants were then asked to select one of the products as their choice for the most suitable prize.

Following that, we measured rumination with the same scale used by Lisjak et al. (2015), which is a three-item scale adapted from Brunstein and Gollwitzer (1996). Participants were asked to report the extent to which the process of considering the three products and making their choices reminded them of the experience they had recalled in the writing study (the threat manipulation), gave them unwanted thoughts about that experience, and made them think about their weaknesses (1 = not at all, 9 = very much; $\alpha = .81$). Next, we measured mood related to the self-threat task by asking participants to indicate how they felt (uncomfortable, bothered, etc.) when writing about their past episode (intelligence threat or control) with eight items along a nine-point scale (1 = not at all, 9 = very much; $\alpha = .90$). Finally, participants provided demographic information and were asked about their perceptions of the purpose of the study.

Manipulation Checks. We conducted a manipulation-check study for the explicit and implicit connection manipulations separate from the main study to avoid possible contamination with the threat manipulations (Perdue and Summers 1986). One hundred members of an online panel (MTurk) participated in return for a small fee and were randomly assigned to conditions in a one-factor (product connection: explicit vs. implicit) between-subjects design. Participants were presented with the ad for the intelligence-related product (*National Geographic* magazine) that either included the slogan that specifically referenced the self-threat domain of intelligence (explicit connection) or did not have the slogan (implicit condition; see web appendix). Participants were then asked to rate the extent to which the ad made the connection to intelligence explicit along a nine-point scale (1 = not at all explicit, 9 = completely explicit). As expected, participants in the explicit-connection condition perceived the product to be more explicitly connected to intelligence ($M = 6.30$) than the product in the implicit condition ($M = 4.72$; $t(98) = 3.40$, $p = .001$), indicating that the manipulation was successful.

Results and Discussion

Exclusion Criteria. Data from five participants (5%) who did not write anything in the writing task were excluded, leaving 103 participants for analysis.

Hypothesis Testing. We expected that for threatened participants, compensating with explicitly connected products would result in greater rumination about the self-threat compared to nonthreatened participants, whereas compensating with implicitly connected products would not increase rumination compared to nonthreatened participants.

To test this hypothesis, we conducted a 2 (threat: yes vs. no) $\times$ 2 (product connection: explicit vs. implicit) ANCOVA with rumination as the dependent variable and mood as the covariate. (The results did not materially change when the covariate was excluded from the analyses.) The results of this analysis are shown in figure 4. The main effect of threat was significant ($F(1, 98) = 5.82$, $p = .02$). More central to our hypotheses, the threat $\times$ product connection interaction was significant ($F(1, 98) = 3.95$, $p = .05$). As expected, threatened participants who compensated with explicitly connected products ruminated more ($M = 5.46$, $SE = .38$) than did nonthreatened participants ($M = 3.72$, $SE = .40$; $F(1, 98) = 9.24$, $p = .003$) and more than did those who compensated with implicitly connected products ($M = 4.31$, $SE = .37$; $F(1, 98) = 4.86$, $p = .03$). The latter two conditions did not differ ($F(1, 98) = 1.12$, $p = .29$). In addition, nonthreatened participants reported equally low levels of rumination regardless of whether they chose products for future studies that were explicitly connected ($M = 3.72$, $SE = .40$) or implicitly connected ($M = 4.06$, $SE = .38$; $F < 1$) to intelligence.

The results of experiment 3a indicate that compensating with explicitly connected products causes rumination about the threat, but compensating with implicitly connected products does not. The findings support the first part of the causal chain. In experiment 3b, we conceptually replicate these findings using a different self-threat domain (power) and different levels of explicitness of the product connections with the self-threat domain.

EXPERIMENT 3B: RUMINATION AND EXPLICITNESS OF PRODUCT CONNECTIONS

The objectives of experiment 3b were to replicate the findings of experiment 3a with a different self-threat domain (power) and to contrast the effects of different levels of explicit connections (rather than explicit vs. implicit) on rumination. To do so, we varied the extent to which the explicit connection directly referenced the power domain (power connection) or was semantically related to it (status connection). Although research suggests that power and status are linked (Rucker and Galinsky 2008, 2009), other research suggests that they are also different constructs (Blader and Chen 2012). We have argued that it is the explicit connection between the compensatory product and the self-threat domain that induces rumination, because the explicit connection reactivates the self-threat in memory.

RUMINATION AS A FUNCTION OF THREAT AND PRODUCT CONNECTION (EXPERIMENT 3A)
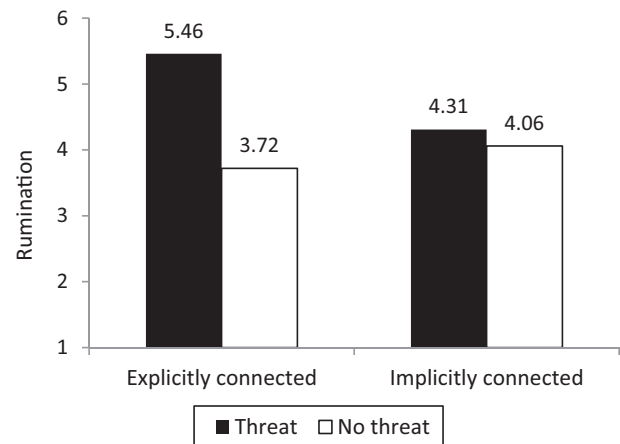
Thus, to the extent that the connection is less explicit, it should result in less rumination. Consequently, we expected that the more explicit connection (power-explicit) would result in more rumination than would the less explicit (status-explicit) connection. In addition, to the extent that the status-explicit connection is sufficient to activate rumination, we expected that threatened participants in both the power-explicit and status-explicit connection conditions would ruminate more than would those who were not threatened, implying no self-repair.

Method

Participants, Design, and Procedure. Three hundred twenty-three members of the MTurk online panel ($M_{age} = 38$ years; 199 women) participated in return for a nominal fee and were randomly assigned to conditions in a 2 (power threat: yes vs. no) $\times$ 2 (product connection: status-explicit vs. power-explicit) between-subjects design. Participants were told that they would be participating in several short studies. In the first study, which used the same manipulation as in experiment 2, participants were either threatened or not threatened on power.

Next, we manipulated product connection with the same choice task design used in experiment 1. Participants in the status-explicit and power-explicit product conditions were presented with three products that naturally symbolize status: a luxury pen, a luxury watch, and either a silk tie (for male participants) or a leather handbag (for female participants). In the status-explicit condition, each of the products was presented along with a slogan and a brief description that made the product's connection with status explicit

(e.g., the luxury pen had the slogan "The Wave Pen: Designed to Impress," adapted from Rucker, Dubois, and Galinsky 2011), whereas in the power-explicit condition, these same products were presented with slogans and product descriptions that made the product's connection to the domain of power explicit (e.g., the luxury pen had the slogan "The Wave Pen: Designed for Power and Command"). In each condition, participants were asked to select the product they preferred the most, followed by a selection of their second most preferred choice. Following that, we measured rumination with the same three-item scale used in experiment 3a ($\alpha = .81$) and measured mood with the same three-item scale used in experiment 1 ($\alpha = .83$). Finally, participants provided demographic information and were asked about their perceptions of the purpose of the study.

Manipulation Checks. We conducted a manipulation-check study for the power-connected and status-connected manipulations separate from the main study. One hundred forty-eight members of an online panel (MTurk) participated in return for a small fee and were randomly assigned to conditions in a one-factor (product connection: power explicit vs. status-explicit vs. implicit) between-subjects design. Participants were presented with the ad for the power-related product (Wave Pen) that either included the slogan and brief description that specifically referenced power (power-explicit connection) or the slogan and brief description that referenced status (status-explicit condition). In addition, although we did not have an implicit-connection condition for experiment 3b, we included an ad that did not include the slogan but included a brief description unrelated to power or status to facilitate comparisons across studies (see web appendix). Participants were then asked to rate the extent to which the ad made the connection to power explicit along a nine-point scale (1 = not at all explicit, 9 = completely explicit). The one-way ANOVA was significant ($F(2, 145) = 46.14, p < .001$). The product in the power-explicit condition was perceived to be more explicitly connected to power ($M = 7.74$) than was the product in the status-explicit condition ($M = 5.67$; $t(145) = 4.88, p < .001$), which was perceived to be more explicitly connected to power than was the product in the implicit-connection condition ($M = 3.67$; $t(145) = 4.70$, $p < .001$). The difference between the power-explicit and implicit conditions was also significant ($t(145) = 9.61$, $p < .001$). These results indicate that the manipulation was successful.

Results and Discussion

Exclusion Criteria. Data from 19 participants (6%) were excluded from analyses: 10 who did not write anything or wrote non-relevant content in the self-threat task,

and 9 who guessed the purpose of the study. The data were analyzed for the remaining 304 participants.

Hypothesis Testing. We expected that participants who compensated with explicitly connected products would ruminate more about the power threat than would those who were not threatened regardless of whether the explicit connection referred to power or status. However, we expected that threatened participants who compensated with power-explicit connections would ruminate more than would those who compensated with status-explicit connections. To test these hypotheses, we conducted a 2 (power threat: yes vs. no) × 2 (product connection: power-explicit vs. status-explicit) ANCOVA, with rumination as the dependent variable and mood and gender as covariates. (The results did not materially differ when the covariates were excluded from the analyses.)

The results of this analysis can be seen in figure 5. The main effect of threat was significant ($F(1, 298) = 24.17$, $p < .001$), and the threat × product interaction was marginally significant ($F(1, 298) = 2.73, p = .099$). Gender was not significant ($F < 1$). Threatened participants who compensated with products explicitly connected to power ($M = 3.20$, SE = .19) ruminated more than did non-threatened participants ($M = 1.95$, SE = .18; $F(1, 298) = 21.91, p < .001$). Similarly, threatened participants who compensated with products explicitly connected to status ruminated more ($M = 2.58$, SE = .20) than did non-threatened participants ($M = 1.95$, SE = .18; $F(1, 298) = 5.42, p = .02$). More important, as expected, threatened participants who compensated with products explicitly connected to power ruminated more ($M = 3.20$, SE = .19) than did those who compensated with products explicitly connected to status ($M = 2.58$, SE = .20; $F(1, 298) = 5.25, p = .02$), which indicates that highly explicit connections induce greater threat rumination than do moderately explicit connections.

The results of experiment 3b indicate that both explicitly connecting a product to power and explicitly connecting it to status impede self-repair. These findings suggest that the concept of status is sufficiently closely linked in memory to the concept of power that it induces rumination about the power threat. However, the finding that rumination is greater when power is explicitly referenced than when status is explicitly referenced suggests that the links in memory are greater in the former condition than in the latter. Further, although we did not include an implicit-connection condition in this experiment, the findings from experiment 3a showing that rumination did not differ between threat and no-threat conditions for implicit connections suggests that status-explicit connections induce more rumination than implicit connections. We interpret this pattern of results as indicating that the less explicit (status) connection may facilitate some self-repair, but not enough to fully restore to prethreat levels.

FIGURE 5

RUMINATION AS A FUNCTION OF EXPLICIT PRODUCT
CONNECTION (EXPERIMENT 3B).
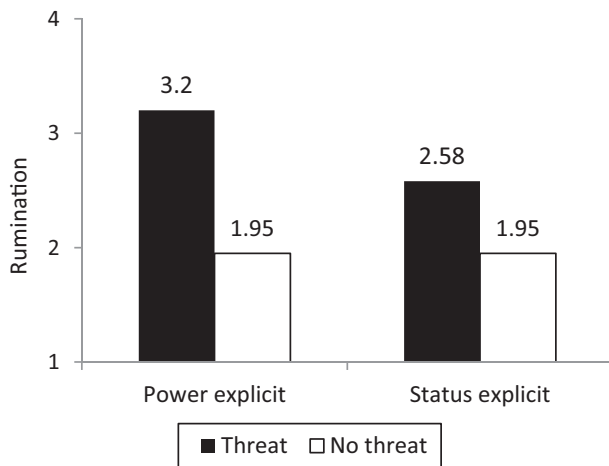
These findings provide stronger and more nuanced support for our reasoning that explicit connections reactivate the previous self-threat by varying the degree to which the connections are explicit: as explicitness decreases (power vs. status), so too does rumination about the previous self-threat. The results of experiment 3b also conceptually replicate experiment 3a, again supporting the first part of the causal chain. In experiment 4, we test the second part of the causal chain.

EXPERIMENT 4: RUMINATION IMPEDES SELF-REPAIR

Experiment 4 tested the second part of the casual chain, which posits that threat rumination impedes self-repair. To enhance generalizability, we used a different self-threat domain (sociability; Lisjak et al. 2015), a different sample composition (French students), and a different method of assessing self-repair. To assess self-repair, we used a repeated-measures design, with the added benefit of conserving power, given that our study was constrained by class size. We expected that inducing participants to ruminate about the prior sociability threat would impede self-repair, whereas preventing rumination would facilitate self-repair.

Method

Participants, Design, and Procedure. Seventy-one French business school student volunteers ($M_{age} = 24.1$ years; 48 women) were randomly assigned to conditions in a 2 (time: time 1 vs. time 2) × 2 (condition: rumination vs.

distraction) repeated-measures mixed design, with time as a within-subjects factor and condition as a between-subjects factor. The data were collected at the beginning of two different classes at roughly the same time (within the same week), and participants received extra course credit for their participation. The study was conducted in two phases separated by a week in order to reduce the possibility of demand effects related to repeated measures (Greenwald 1976). In the first phase (time 1), in a study ostensibly about characteristics of the self, all participants filled out a short self-evaluation survey in which they rated themselves on their sociability with one item along a nine-point scale (1 = not at all, 9 = very much), along with other decoy measures. This item served as the participants' baseline measure of sociability.

A week later (time 2), the same students participated in another ostensibly unrelated study. First, using the same cover story as experiment 1, we threatened all participants on sociability by having them write about a time when they were not as sociable or friendly toward another person as they would have liked to be (Lisjak et al. 2015). Next, we manipulated rumination by inducing some participants to ruminate about the threat, whereas others were distracted and thus prevented from ruminating (Bushman et al. 2005; Lisjak et al. 2015). Participants in the rumination condition were told to write about what they had done from the start of the study until the present time and the thoughts and feelings they had experienced. Participants in the distraction condition wrote about the physical layout of a building they knew well (e.g., college campus, supermarket). Participants then rated themselves on certain personality characteristics, including sociability, measured with two items (cordial with others, friendly) along a nine-point scale (1 = not at all, 9 = very much). We averaged the two sociability items to form a composite measure ($r = .59$).

Finally, we measured mood with the same three-item measure ($\alpha = .85$) used in experiment 1. To serve as a manipulation check for rumination, we asked participants to report the extent to which they ruminated about the experience they had written about along the same three-item scale ($\alpha = .84$) used in experiments 3a and 3b. Participants provided demographic information and were asked whether they had heard about the study before and what they thought was the purpose of the study.

Results and Discussion

Exclusion Criteria. Data from two participants (3%) who reported having heard about the experiment before their participation were excluded from analyses. The data were analyzed for the remaining 69 participants.

Manipulation Checks. A one-way ANOVA comparing the effects of condition on the self-reported rumination index revealed that participants in the rumination condition

ruminated more about the threat ($M = 5.54$, SD $= 1.88$) than did those in the distraction condition ($M = 2.16$, SD $= 1.84$; $F(1, 67) = 56.99$, $p < .001$), indicating that the rumination manipulation was successful.

Hypothesis Testing. We expected that rumination would decrease sociability ratings relative to baseline ratings, but expected no such lowering of sociability ratings for those who were distracted from ruminating. To test these hypotheses, we conducted a 2 (time: time 1 vs. time 2) × 2 (condition: rumination vs. distraction) repeated-measures ANCOVA with time as a within-subjects factor, condition as a between-subjects factor, mood as a covariate, and sociability rating as the dependent variable. (The results did not materially differ when the covariate was excluded from the analyses.) The expected time × condition interaction was significant ($F(1, 66) = 4.63$, $p = .04$). The results of this analysis can be seen in figure 6. Participants who were induced to ruminate about the prior self-threat rated themselves lower on sociability at time 2 ($M = 6.97$, SE $= .18$) compared to their baseline self-rating at time 1 ($M = 7.31$, SE $= .21$; diff. $= .34$; $F(1, 66) = 4.88$, $p = .03$). In contrast, participants who were prevented (distracted) from ruminating about the same self-threat did not differ on their sociability ratings between time 1 ($M = 7.10$, SE $= .20$) and time 2 ($M = 7.22$, SE $= .17$; diff. $= -.12$; $F < 1$), and the difference between time 1 and time 2 ratings was greater in rumination conditions ($M_{\text{diff}} = .34$) than in distraction conditions ($M_{\text{diff}} = -.12$), as evidenced by the significant interaction.

Experiment 4 supports our hypothesis that ruminating about a threat undermines self-repair. After experiencing a self-threat in the sociability domain, participants who were induced to ruminate about the self-threat rated themselves as less sociable compared to their baseline measure of sociability obtained one week earlier. In contrast, sociability ratings of those who did not ruminate (distraction condition) did not differ from their baseline measure. These findings provide evidence that rumination impedes self-repair, supporting the second part of the causal chain. Together, the results from experiments 3a, 3b, and 4 indicate that compensating with explicitly connected products increases rumination about the self-threat, and this rumination in turn impedes self-repair. In contrast, compensating with implicitly connected products does not cause rumination, and consequently, self-repair is successful.

Thus far, we have provided evidence that compensating with explicitly connected products in response to self-threats impedes self-repair, but compensating with implicitly connected products facilitates self-repair. In experiment 5, we explore a boundary condition to these effects by demonstrating conditions under which explicitly connected products can also facilitate self-repair.

SOCIABILITY AS A FUNCTION OF RUMINATION CONDITION (EXPERIMENT 4).
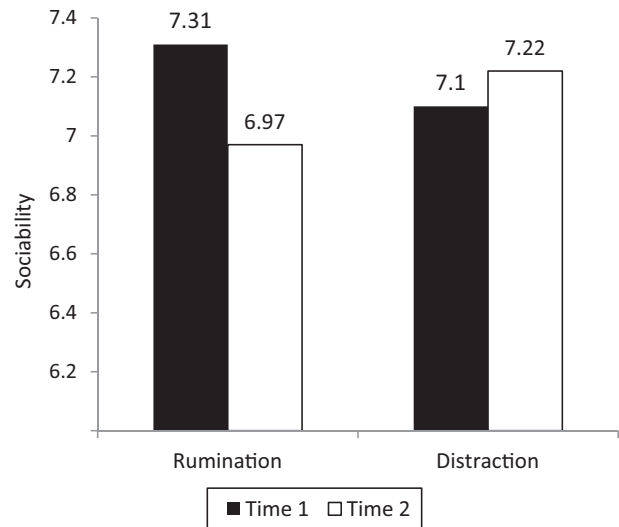
EXPERIMENT 5: EXPLICIT PRODUCT CONNECTIONS CAN FACILITATE REPAIR IF THE SELF-THREAT IS IMPLICIT

Experiment 5 tested conditions under which even explicitly connected products may facilitate self-repair to shed additional light on the underlying mechanisms. More specifically, we tested the proposition that when the self-threat itself is implicit, self-repair will occur for both explicitly and implicitly connected products.

Method

Participants, Design, and Procedure. Seventy-nine Indian undergraduates ($M_{\text{age}} = 19.1$ years; 43 women) participated in return for the possibility of winning a lottery for an Amazon gift voucher of Rs. 500–1500 (approximately US$8–$24). Participants were told that they would be participating in several short studies and were randomly assigned to conditions in a one-factor (intelligence threat: explicit vs. implicit vs. none) between-subjects design.

First, participants were either threatened on the domain of intelligence with explicit or implicit manipulations, or were not threatened. Those in the explicit threat condition were threatened on the domain of intelligence with the same manipulation used in experiment 1. Participants in the implicit threat condition were threatened on intelligence using a writing task adapted from Gao et. al (2009, study 3). Unlike those in the recall task in the explicit

threat condition, the writing themes in the implicit threat condition have no overt connection to failures on the domain of intelligence. Specifically, participants were asked to share two experiences each on two different themes presented in sequence. In step 1, participants were asked to list two life experiences in which they felt a great deal of doubt or uncertainty. In the next step, they were asked to list two experiences that made them feel intellectually smart and bright. Based on past research (Gao et al. 2009; Petty, Briñol, and Tormala 2002), we expected that participants would attribute their general self-doubt induced by sharing the first two experiences in step 1 to having doubts on the domain of intelligence about which they wrote subsequently. Participants in the no-threat condition also wrote two experiences each on two different themes. However, for the first theme, instead of listing experiences in which they had doubt about their intelligence, they began by listing two experiences in which they felt confident and certain about themselves and then shared two experiences that made them feel intellectually smart and bright.

Next, we provided all participants an opportunity to compensate with products explicitly connected to the domain of intelligence using the same compensation task and products used in experiment 1. After completing a filler task that asked them about their lifestyle preferences, participants completed an ostensibly new study that assessed how long they were willing to wait in line under two different scenarios (adapted from Inesi et al. 2011). In the first, threat-related scenario, participants were asked to imagine that a "Knowledge Exhibition" was being held to showcase the work and contributions of leading scientists, artists, and writers, but there was a long line at the venue to gain entry to the exhibition. At the end of the scenario, participants were asked to indicate along a nine-point scale (1 = less than 5 minutes, 9 = more than 40 minutes) how long they would be willing to wait in line in order to attend the exhibition. In the second, threat-unrelated scenario, participants were asked to imagine that a new convenience store had recently opened near their home and that they had reached the store at its opening hour just to try it out. However, the store had not yet opened. They were asked to indicate along a nine-point scale (1 = less than 2 minutes, 9 = more than 16 minutes) how long they were willing to wait for the store to open. Finally, mood was measured with the three-item scale used in study 1 ($\alpha = .83$), and participants provided demographic information and were asked about their perceptions of the purpose of the study.

Web Appendix Experiment 1. To ensure that the implicit manipulation produced the expected effects, we conducted a separate experiment. Although the implicit threat manipulation we employed has been used successfully in previous studies (Gao et al. 2009; Petty et al. 2002), participant characteristics and experimental methods in our study differed from previous ones, and demonstration of

spontaneous compensatory consumption following the implicit threat is critical to the interpretation of experiment 5. In this experiment, we used the same implicit threat manipulation (intelligence threat) and participants drawn from the same general participant pool as experiment 5, and also included an explicit threat manipulation that was used in experiment 1 (full details can be found in the web appendix). The results showed that the implicit and explicit threat manipulations were successful. Both participants who were explicitly threatened and who were implicitly threatened on intelligence expressed a greater preference for an intelligence-related product than did those who were not threatened, and product preference did not differ between implicit and explicit threat conditions.

Results and Discussion

Exclusion Criteria. Data from three participants (4%) who did not write anything in the writing tasks were excluded from analyses, leaving 76 participants for the analyses.

Hypothesis Testing. We expected that participants in the explicit threat condition would continue to compensate for the intelligence threat, and thus would be willing to wait longer in the line for attending the intelligence symbolic knowledge exhibition than would those in the no-threat conditions, indicating no self-repair. In contrast, we expected that those in the implicit threat condition would not continue to compensate, and thus would show no differences in willingness to wait between the implicit threat and no-threat conditions, indicating self-repair. In addition, we did not expect willingness to wait for the intelligence-unrelated convenience store to differ across the threat conditions.

To test these hypotheses, we conducted a one-way ANCOVA with threat condition as the independent variable, mood as a covariate, and willingness to wait as the dependent variable. (The results did not materially change when the covariate was excluded from the analyses.) The results of this analysis can be seen in figure 7. For the threat-related scenario (Knowledge Exhibition), the main effect of threat condition was significant ($F(2, 72) = 3.54$, $p = .034$). Participants in the explicit threat condition were willing to wait longer ($M = 5.24$, $SE = .43$) than were participants in the implicit threat condition ($M = 3.69$, $SE = .43$; $p = .014$) and the no-threat condition ($M = 4.03$, $SE = .43$; $p = .05$), indicating no self-repair for the explicit threat condition, consistent with previous experiments. In contrast, there was no difference in willingness to wait between the implicit threat and no-threat conditions ($p = .58$), indicating self-repair. Further, as expected, there was no effect of threat condition on willingness to wait in the threat-unrelated scenario (convenience store; $F < 1$).

FIGURE 7

WILLINGNESS TO WAIT AS A FUNCTION OF THREAT TYPE (EXPERIMENT 5).
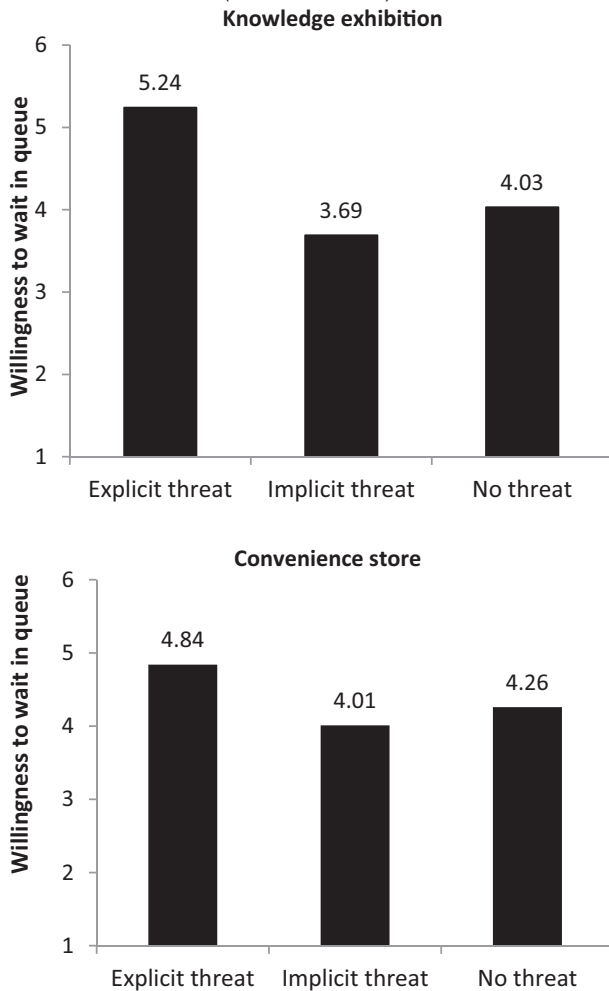
The results of experiment 5 provide an important boundary condition for the findings of our previous experiments by showing that an explicit connection between the compensatory product and the self-threat domain can result in self-repair, under certain conditions. Specifically, when self-concept deficits arise from implicit self-threats—ones in which there is no specific self-threat, but instead a more generalized reduction in self-confidence—explicitly connected products can also lead to self-repair. However, as in previous experiments, compensating with explicitly connected products impedes self-repair when the self-threat is explicit. These results suggest that, consistent with the findings of experiment 3a and 3b, and web appendix experiment 1, when a threat has explicit linkages to a failure on the self-concept domain, explicit product connections reactivate the previous self-threat, which induces rumination and thwarts self-repair. However, this process occurs only

when the self-threat is explicitly stored in memory. When the self-threat is implicit, there is no explicit self-threat to reactivate, and thus a compensatory product's explicit connection to a self-threat domain should not cause rumination, and thus not impede self-repair.

GENERAL DISCUSSION

People generally want to feel good about themselves. However, occasionally, or maybe even often, people encounter threats to important aspects of their self-concept. Numerous studies demonstrated that one way that people try to repair their damaged self-concept is through symbolic consumption (Rucker and Galinsky 2013): when an aspect of their self-concept is threatened, people seek out products that signal success on the threatened self-domain (within-domain compensatory consumption). Although this within-domain compensatory effect has been observed across many self-relevant domains, surprisingly little research has addressed the efficacy of compensatory consumption, and the few studies that have done so have produced mixed results.

In the present research, we attempted to reconcile these disparate findings. Across seven experiments with diverse participants using multiple measures and manipulations, we showed that within-domain compensatory consumption can restore the damaged self, but only under certain conditions. When the association between the symbolic product and the self-threat domain is not made explicit, symbolic consumption can successfully restore the damaged self-concept. However, in many cases, the connection between the product and a particular self-concept domain may be made explicit through a product name, marketing slogan, or advertising tagline. Such explicit connections are generally viewed as good marketing: brands want to convey their positioning on particular attributes or provide clear information about what a product can offer.

Our research shows that such explicit connections can actually have a detrimental effect on restoring a damaged self-concept. We show that when inherent (implicit) connections between the product and the damaged self-concept that would otherwise result in a successful self-concept repair are made explicit, self-repair is thwarted. The explicit connection serves to reactivate the threat in memory, which causes individuals to ruminate about their insecurities and shortcomings in that domain (Lisjak et al. 2015), and this rumination impedes self-repair. However, implicit connections do not trigger such ruminative thoughts, allowing self-repair to occur. Thus, compensating with explicitly connected products has the insidious effect of actually prolonging rather than repairing the damaged self-concept. Unfortunately for consumers, our research also shows that they are apparently unaware of these differences in the efficacy of compensatory

consumption via implicitly versus explicitly connected products, as they show equal levels of compensatory consumption regardless of the explicitness of the product connection to the damaged self-concept domain.

Contributions

Our research makes several contributions. First, it potentially reconciles seemingly conflicting findings in previous research. Some research has demonstrated that within-domain compensatory consumption can successfully repair a damaged self-identity (Gao et al. 2009), whereas other research has shown that within-domain compensation actually impedes self-repair (Lisjak et al. 2015). Our research can account for these different findings. When the symbolic connections between the self-threat domain and the compensatory product are made explicit, as was the case in the studies reported by Lisjak et al., the explicit connections induce rumination about the self-threat, which impairs self-control and impedes self-repair. However, when the connections between the self-threat and compensatory product are implicit (inherently symbolic of the self-threat domain), and no explicit connections are made, as was the case in the research reported by Gao et al. (2009), compensatory consumption can successfully repair the damaged self-concept.

Although our research fully replicates the findings of Lisjak et al. (2015) that self-repair is impeded when the connections between the compensatory product and the self-threat domain are made explicit, our research also suggests a slightly different interpretation of their findings. They proposed that within-domain compensatory consumption caused rumination about the self-threat, and thereby reduced self-control. However, our research suggests that it is not within-domain compensation per se that triggers rumination, but rather the explicit connections between the products and the threatened self-domain.

A second contribution pertains to the processes underlying compensatory consumption more generally, and how the self-repair process does (or does not) work. We have argued that the explicit connections reactivate the self-threat, which induces rumination, and the extent to which this reactivation occurs is related to the explicitness of the connection and the strength of the association in memory between the explicit connection and the self-threat domain. Consequently, as we showed in experiment 3b, less explicit connections (status connection following a power threat) result in less rumination than do more explicit connections (power connection following a power threat), but both result in more rumination than implicit connections.

Thus, the fundamental issue is not about explicit or implicit connections per se, but rather the extent to which aspects of the product reactivate the self-threat and induce rumination. One implication is that there may be instances in which even implicit connections induce rumination and

impede self-repair. For some individuals, the inherent symbolic (implicit) associations may be so strongly linked to a self-concept domain that the product itself—sans any explicit connection—may reactivate the self-threat. For example, highly materialistic consumers tend to be overly concerned with status and believe that possessions are indicators of success, and they also tend to have chronic self-deficits in the identity domain of power (Richins and Dawson 1992). Similarly, intelligence is likely one of the more central self-concept domains for academics. Thus, products that are inherently symbolic of these self-concept domains (luxury cars, prestigious journal publications) may automatically activate a self-concept domain for those who have chronically strong links between the self-identity symbolism of the product and chronic deficits on the self-concept domain. For such individuals, compensating with implicitly connected products may also impede self-repair.

Our research also has implications for consumer well-being. We show that although compensating for self-threats via implicitly connected products is more effective in restoring the self-concept than compensating with explicitly connected products, consumers are not well calibrated in terms of the relative effectiveness of the two compensatory modes. Thus, threatened consumers may end up wastefully and impulsively spending on explicitly connected products even when it does not provide any self-repair benefits.

Finally, our research has implications for materialism research. Although materialism is typically operationalized as stable traits and values (Belk 1985; Richins and Dawson 1992), to the extent that products are used to bolster aspects of self-identity, their consumption arguably represents materialistic behaviors (Rustagi and Shrum 2018; Shrum et al. 2013). Most research on materialism has focused on the negative relation between materialism and well-being (Dittmar et al. 2014). However, our research suggests that materialistic behavior, at least in the form of compensatory consumption, can have positive utility under some conditions.

Alternative Explanations and Future Research

We have argued that contextual features such as explicit slogans or product names can reactivate and cue thoughts about a previous self-threat, which causes consumers to continue to try to bolster or repair their damaged self-concept. A slightly different explanation is that the explicit cues actually increase the magnitude of the threat (make it stronger), which induces rumination and impedes self-repair. Although this explanation is plausible, our data suggest that this is not the case. In particular, if the explicit connections in effect increase the magnitude of the manipulation, then we would expect that the initial compensatory consumption effects would be greater for explicitly connected products than for implicitly connected products.

However, as the findings of experiment 2 indicate, the initial compensatory effects did not differ as a function of connection conditions.

Another alternative explanation for the effects of explicit connections is that the explicit cues may induce worry about what others will think about their motives for the purchase and thus how it may potentially reflect on themselves, and this worry drives the rumination effects. This explanation is also plausible, and consistent with findings showing that receiving social validation in a self-domain that has been threatened provides a sense of goal fulfillment, which can facilitate self-repair (Brunstein and Gollwitzer 1996; Lisjak et al. 2015, experiment 4). However, this alternative has a difficult time explaining the pattern of results we observed. First, if the explicit cue induces consumers to worry that others may think poorly of them because of their choice, then it is unclear why consumers would show a greater preference or would be willing to pay more for these explicitly connected products in the first place. Second, this alternative explanation also has difficulty accounting for the differences noted between power-connected and status-connected cues (experiment 3b). More specifically, we have argued that the differences are the result of different levels of explicitness, which result in less likelihood or less strength of reactivation of the self-threat because the connection between the cue and the self-threat domain is less explicit. However, the more explicit (power-connected) and less explicit (status-connected) connections should not produce different levels of worry about what others think of the choice.

Although we have argued that our research provides a compelling reconciliation of previous research on compensatory consumption and self-repair, there is at least one unpublished study that has reported successful self-repair with compensatory products that are explicitly connected to the self-threat domain. Rucker et al. (2011) (reported in Rucker, Galinsky, and Dubois 2012) found that compensating for a power threat with a pen advertised as a status pen restored participants' feelings of power, results that are clearly contrary to our findings and theoretical reasoning. Although our research cannot directly resolve the apparent discrepancy, there are important differences between that study and ours that may explain the discrepancies, and thus potentially represent avenues for future research. One difference pertains to the compensatory process. In our studies, participants were asked to choose products that were connected to the self-threat domain, whereas participants in Rucker et al. (2011) were given a product (status pen) to evaluate and were allowed to keep the product as a gift. Thus, it may be that physical (as opposed to mental) consumption has a greater restorative effect. A second difference also pertains to the compensatory process. In our studies, participants made choices among alternatives (three explicitly connected products), whereas no choice process occurred in the Rucker et al. study. The process of deciding which compensatory product to choose or how much to pay for it requires a certain amount of consideration and even self-reflection, which may facilitate or increase the probability that the prior self-threat may be reactivated, thus spurring rumination. In contrast, receiving a product as a gift requires no such mental processes, and thus reactivation and rumination may be avoided.

Although we have shown that compensatory consumption can successfully restore a damaged self-concept, and thus may be useful for consumers in some contexts, there are important limitations that we believe are worth noting. First, for obvious ethical reasons, the laboratory manipulations of self-threats (e.g., recalling a time when an aspect of the self was threatened) are relatively benign, and most research shows that such manipulations are not particularly upsetting and dissipate quickly. However, in daily life, these threats may be remarkably traumatizing for some, and also may occur frequently. For example, a person may not merely receive a demotion or have his or her job responsibilities curtailed, but may actually be fired. In such cases, it is unlikely that a single instance of compensatory consumption will successfully repair the damaged self-concept. Clearly, researchers should not subject participants to traumatic self-threats, but other methods (e.g., experience sampling) may be useful in documenting compensatory consumption processes and whether they are successful over time.

A related concern pertains to the scope of compensatory effects in everyday life, and the extent to which self-threats are mostly implicit or explicit. That is, our research shows that compensating for implicit threats restores the self-concept regardless of the explicitness of the product connection, and thus if most threats are implicit, little harm may result from compensatory consumption. However, as we noted, many self-threats are clear: failing an exam, being denied membership in a club, losing an election. Moreover, individuals who are chronically lacking in self-worth may perceive even seemingly small slights to be highly threatening. In such cases, we argue that the self-threat is explicit and likely to be highly accessible, perhaps for a lengthy amount of time.

Similarly, in many instances, the form of compensatory consumption can be relatively benign. One particularly interesting aspect of research on compensatory consumption is that the "consumption" part need not involve purchase or use. Merely choosing threat-related products for researchers to use in future studies (Gao et al. 2009, this study), being entered into a lottery for threat-related products (Gao et al. 2009), receiving a free gift that was advertised as threat-related (Rucker et al. 2011), or expressing willingness to pay for threat-related products (this study) is sufficient to repair the damaged self. Moreover, in most instances, the threat-related products were not at all expensive. Thus, there are likely few adverse consequences of imagining owning an Aston Martin, buying a magazine

such as the *Economist*, or going to a museum, to compensate for self-threats. However, not all modes of compensatory consumption may be so benign. Spending on products to remedy a self-threat can just as easily involve expensive products (e.g., luxury goods) that may stretch or break budgets, potentially increasing debt and directing resources away from needed goods.

DATA COLLECTION INFORMATION

The data for experiment 1 were collected by the first author from Amazon's MTurk online panel on August 2 and 3, 2016. Data for experiment 2 were collected by the first author from Amazon's MTurk online panel from July 21 to August 3, 2015. Data collection for experiment 3a was coordinated by the first author with staff members of Fortune Institute of International Business, New Delhi, India, who supervised the data collection through an on-campus paper-and-pencil-based study conducted with MBA students from October 21 to 23, 2015. Data for experiment 3b were collected by the first author from Amazon's MTurk online panel in April 2017. Data for experiment 4 were jointly collected by both authors through a paper-and-pencil on-campus study conducted at HEC Paris. The participants were graduate students of HEC Paris. The data were collected in two phases from October 12 to 21, 2015. Data for experiment 5 were collected by the first author through an on-campus paper-and-pencil-based study conducted with Indian undergraduate students in April 2017. The first author analyzed all data under the supervision of the second author.

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