*Comfortably Numb*:

How Relationship Reminders and Affective Numbing Influence Consumption Enjoyment

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**CONTRIBUTION STATEMENT**

Our research examines how enjoyment is influenced by reminders of relationships—particularly relationships that one does not have—and the affective numbing that results after such reminders. We investigate how these forces impact consumers’ experiences, in terms of what they feel, taste, hear and ultimately how much enjoyment they derive from actual consumption (i.e., real foods, beverages, products, and experiences). This work adds to the literature on predictors of *consumption enjoyment*. We develop theory and introduce a novel mechanism by which relationship reminders impact consumption enjoyment. We highlight *affective numbing* as a critical shaper of consumers’ perceptions and consumption experiences. Our results depart from more commonly reported findings of emotional and perceptual amplification in the enjoyment literature, whereby pleasant and unpleasant experiences become more extreme (i.e., increasing enjoyment of pleasant but decreasing enjoyment of unpleasant experiences). Whereas prior work has identified conditions when consumers exhibit greater sensitivity, we highlight circumstances where consumers exhibit diminished sensitivity. We find that these relationship reminders diminish emotional and perceptual sensitivity and thus, extremity of reported consumption enjoyment for both positive and negative products and experiences.

**ABSTRACT**

Many situations make consumers painfully aware of a common social expectation of togetherness—people sharing relationships and consumption experiences. Pop songs, romantic comedies, and novels suggest that being without a valued relationship makes everything—whether a tasty meal or a painful shock—worse. Rather than souring emotions and experiences, we suggest that consumers often turn *cold-hearted*, numbing themselves when faced with reminders of relationships out of their reach. Building from research on adaptive coping, we propose that consumers use an emotional shield and *affective numbing* to protect themselves from the anticipated psychological pain of lacking relationships. This numbness, in turn, dulls consumers’ emotional intensity and perceptual sensitivity to consumption experiences—good or bad. We show how reminding consumers of relationships they lack causes them to derive *less* enjoyment from positive experiences and relatively *more* enjoyment from negative experiences. Thus, relationship reminders change not only the extent to which consumers feel but also the extent to which they derive enjoyment from actual consumption (e.g., foods, beverages, products, and experiences). Together six studies (five lab and one field) show how relationship reminders and affective numbing shape actual consumption enjoyment.

## *“Delivering Chinese food all day can be depressing. Like when people yell out ‘Food’s here!’ as if they have a family, but I know they are alone.”*

## *-Unbreakable Kimmy Schmidt (Netflix Original Series)*

Pop songs, romantic comedies, and Jane Austen novels suggest that being without a valued relationship makes everything—whether a tasty meal or a painful shock—worse. Our inquiry, however, finds that intuition is only half right. When faced with reminders of relationships out of their reach, consumers often turn *cold-hearted*, numbing to shield themselves from psychological pain of lacking relationships. Affective numbness, in turn, dulls the emotional intensity of and perceptual sensitivity to consumption experiences—good or bad. Our studies reveal that reminding consumers of relationships they lack causes them to derive *less* enjoyment from positive experiences but relatively *more* enjoyment from negative experiences. Thus, relationship reminders change not only what consumers feel but also the extent to which they derive enjoyment from actual consumption (e.g., foods, beverages, products, and experiences).

Given the importance of enjoyment to marketers and consumers, substantial research has focused on factors that influence consumption enjoyment. Previous efforts have largely focused on aspects of the product or experience itself. Prior work has identified a variety of important characteristics that increase consumption enjoyment(Nicolao, Irwin, and Goodman 2009; Norton, Mochon, and Ariely 2012; Nelson, Meyvis, and Galak 2009; Raghunathan and Corfman 2006; Townsend and Sood 2012; Vosgerau, Wertenbroch, and Carmon 2006), such as when products are perceived as unhealthy (Raghunathan, Naylor, and Hoyer 2006) or experiences are ritualized and shared (Vohs et al. 2013). Additional work has shown that duration knowledge (Zhao and Tsai 2011), overly unique or varied selections (Ariely and Levav 2000; Ratner, Kahn, and Kahneman 1999), repeated evaluation (Larson, Redden, and Elder 2014), and anticipated dislike (Lee, Frederick, and Ariely 2006) reduce consumption enjoyment.

We add to the consumption enjoyment literature by identifying a novel predictor (relationship reminders) and mechanism (affective numbing) that explain when and why actual consumption enjoyment of positive and negative experiences can respectively *decrease* and *increase.* We also add to the literature on relationship reminders (Cavanaugh 2014) by showing how they impact perceptions of sensory experiences and consumption enjoyment.

Building on prior work on pain and consumer coping (Duhachek 2005; Duhachek, Agrawal, and Han 2012; MacDonald and Leary 2005; Pavia and Mason 2004), we theorize that the prospect of psychological pain from relationship reminders may result in self-protective numbing tendencies. We propose that affective numbing helps reduce unwanted thoughts and feelings, but also inadvertently deadens sensory perceptions important to enjoyment. We provide evidence for the paradoxical effect of relationship reminders whereby consumers reminded of relationships they lack derive *less* enjoyment from positive experiences and *more* enjoyment from negative experiences relative to those who have that relationship and not having been reminded of relationships at all. We also show how affective numbing dulls the emotional intensity of and perceptual sensitivity to these experiences helping to explain our findings.

Our predictions and findings run counter to common assumptions that when people are reminded of valued relationships they lack, they will feel more emotional, not less. Prior work has typically focused on how emotion directs attention and enhances sensitivity to experiences owing to greater affective involvement(Nowlis and Shiv 2005; Poor, Duhachek, and Krishnan 2013; Vohs et al. 2013). In contrast, we focus on how affective numbing blunts emotions and diminishes perceptual sensitivity. Additionally, our results depart from amplification findings in the enjoyment literature, whereby enjoyment of positive and negative experiences is magnified or more extreme. Whereas prior work identifies conditions when consumers exhibit greater sensitivity to experience valence (Zhao and Tsai 2011), we highlight circumstances where consumers exhibit diminished sensitivity, with important consequences for enjoyment.

This paper is structured as follows. We first provide an overview of prior work on relationship reminders, affective numbing, and consumption enjoyment. We then present our conceptualization of how relationship reminders influence affective numbing and consumption enjoyment. Six studies (lab and field) test these ideas and show that relationship reminders (e.g., romantic relationships, close friendships) observed in consumption environments (e.g., restaurants, stores) shape enjoyment across a range of actual product experiences. Study 1 (field) and Study 2 (lab) show that relationship reminders can reduce enjoyment of positive consumption experiences*.* Study 3 demonstrates that reminding consumers of romantic relationships they lack propagates affective numbing, as evidenced by blunted emotions and apathy. Studies 4 and 5 offer additional evidence for the affective numbing mechanism, and its role in reducing enjoyment for positive and increasing enjoyment for negative consumption experiences. We also discuss the theoretical and practical implications of these findings.

**RELATIONSHIP REMINDERS, AFFECTIVE NUMBING, AND**

**CONSUMPTION ENJOYMENT**

Whether eating a meal at a restaurant, drinking a beverage at a cafe, or trying new products at the store, consumers regularly find themselves in the presence of or thinking about social others as they sample and consume products. In retail stores, sales associates often inquire about one’s relationships (e.g., are you married? do you have kids?) as a way to build rapport with consumers. During their consumption activities, consumers regularly encounter reminders of valued relationships—those they have but also those they do not have (Cavanaugh 2014).

Social relationships are commonly associated with emotion (i.e., both highs and lows; Leary, Koch, and Hechenbleikner 2001; Raghunathan and Corfman 2006). On one hand, thinking about the relationships and social support one has often generates positive emotions (e.g., happiness, love, pride, and gratitude). On the other hand, social relationships can also be the source of negative emotions (e.g., frustration with a spouse, anger towards a parent, fear for a child’s safety). Similarly, reminders of relationships one does not have or no longer has could also make one feel emotional. Thinking about relationships one lacks presumably may increase the likelihood of feeling sad, angry, or guilty—negative emotions that most individuals would prefer not to experience.

In a world where relationship reminders are frequent, one way in which individuals may cope is by shielding themselves from anticipated emotions. Emotion-focused coping is directed toward changing one’s own emotional reaction to stressful or aversive events (Lazarus and Folkman 1984, Folkman and Lazarus 1985). Prior work has shown that aversive events perceived as losses activate threat appraisals and increase emotion-focused coping (Duhachek et al. 2012). Building on this notion, if lacking a relationship is perceived as a loss or threat to the self (i.e., loss of social standing or threat to one’s sense of worth), then individuals faced with reminders of relationships they lack may be more likely to engage in emotion-focused coping and distancing. Distancing oneself emotionally allows a person to detach from a troubling situation that is presently unalterable (Folkman and Lazarus 1985; Folkman et al. 1986) and avoid difficult situations related to valued goals (Luce 1998), such as having relationships. If reminders of valued relationships one lacks are troubling or induce potentially negative emotions, consumers may cope by detaching or numbing themselves emotionally. In sum,relationship reminders may cause affective numbing.

In this research, we define *affective numbing* as diminished perceptual sensitivity to the emotional components of an experience, which manifests as blunted emotion and apathy. Blunted emotion refers to a dampening of the extent to which a person experiences an emotional reaction (Durso, Luttrell, and Way 2015). Apathy, as we define it, refers to the cognitive-emotional components of apathy, that is, indifference (Leander, Shah, and Sanders 2014; Yoo 2010) and flattening of affect (Marin 1991; Sultzer et al. 2013), but not the behavioral component of apathy clinicians use. We note that while affective numbing may appear similar to overall low emotional arousal, its antecedents and consequences are distinct. We contend that affective numbing occurs in situations that are normatively emotionally arousing rather than generally void of affect.

Prior research suggests that *numbing serves* *a self-protective function*. For instance, numbness and apathy have been reported when feeling unable to live up to expectations or succeed (Ashforth and Humphrey 1993; Raffini 1988) and when recovering from distressing events (DeWall and Baumeister 2006; Twenge et al. 2001; Twenge, Catanese, and Baumeister 2003). Palliative numbing is an evolved response to physical pain and injury. For instance, physical numbness helps individuals cope with physical threats such as trauma, chronic physical pain, or even exposure to extreme temperatures (Edelson and Fitzpatrick 1989; Glover 1992; Leventhal et al. 1979). While this physiological response evolved first as a response to painful physical events, similar physiological responses may be prompted by psychologically painful events (Eisenberger, Lieberman, and Williams 2003; Finkel and Baumeister 2010; Kross et al. 2011; Panksepp 1998). In fact, MacDonald and Leary (2005) have argued that social beings (whose survival is dependent upon inclusion) actually process threats to their social connections as severe threats to safety.

In situations requiring self-protection, affective numbing may be an adaptive reaction to protect individuals from both potentially painful physical (e.g., injury or trauma) and psychological (e.g., failing a test, losing a contest, being socially excluded or rejected) experiences. Numbing may also serve a protective function against anticipated loss (Maciejewski and Prigerson 2013) or social pain associated with lacking a valued relationship. Thus, merely thinking privately about relationships one does not have or no longer has may be sufficient to generate a sense of loss and a need to self-protect through affective numbing. In sum, *individuals may shield themselves from psychological pain associated with reminders of socially valued relationships through affective numbing.*

Affective numbing prompted by personally and socially painful events (psychological pain) may also manifest in physical reactions. Owing to their mutual dependence on a shared physiological system, psychological and physical responses are often inextricably linked (DeWall et al. 2010; Kross et al. 2011; Panksepp 1998). For instance, individuals given doses of acetaminophen (a physical pain suppressant) report reduced social pain (DeWall et al. 2010), and experiences of social pain (i.e., a recent break up) have been shown to cause physical responses, where brain regions associated with physical pain become activated (Kross et al. 2011). Notably, animals that have been socially rejected become insensitive to physical pain (MacDonald and Leary 2005). Most recently, acetaminophen has been shown to blunt feelings of not only pain but also pleasure (Durso et al. 2015). Thus, reminders of relationships one lacks may impact one’s sensory experiences.Building from the work on pain and coping, we propose that *anticipation or experience of psychological pain* may propagate not only *affective numbness* but also cause physical *perceptual numbness*, dulling sensory perceptions. Such dulled perceptions are likely to manifest across sensory modalities owing to a shared, centralized nervous system. Since sensory experiences are critical to pleasure (Elder and Krishna 2010), dulled sensory perceptions may influence consumption enjoyment of both positive and negative experiences.

**THEORY AND HYPOTHESES**

In this paper, we develop theory regarding how relationship reminders influence consumption enjoyment. We propose that consumers numb themselves when faced with reminders of relationships they do not have. Consistent with evidence on emotion-focused coping (Botti, Orfali, and Iyengar 2009; Duhachek 2005; Duhachek et al. 2012; Folkman et al. 1986; Lazarus and Folkman 1984, Folkman and Lazarus 1985; Luce 1998; Pavia and Mason 2004), we propose that those reminded of lacking relationships use affective numbing to protect themselves from psychological pain associated with lacking relationships. This numbness, in turn, dulls the emotional intensity of consumption experiences, whether positive or negative. As a result, reminding consumers of relationships they lack causes them to derive *less* *pleasure* from positive experiences and relatively *less displeasure* from negative experiences. Thus, relationship reminders change not only what consumers feel but also the extent to which they derive enjoyment from actual consumption.

Feelings and sensory sensitivity are important toconsumptionenjoyment. Positive feelings such as excitement (Vosgerau et al. 2006), anticipation (Nowlis et al. 2004), interest (Vohs et al. 2013), and a sense of belonging (Raghunathan and Corfman 2006) or attachment (Norton et al. 2012) *increase* enjoyment, while negative feelings, such as negative mood (Lee and Tsai 2014), disgust (Morales and Fitzsimons 2007), anticipated dislike (Lee et al. 2006), and anticipated regret (Mandel and Nowlis 2008) *decrease* enjoyment. Moreover, disrupting adaptation sensitizes consumers (Nelson et al. 2009; Nicolao et al. 2009), and greater sensory sensitivity and differentiation (Elder and Krishna 2010; Larson, et al. 2014; Poor et al. 2013; Redden 2008) have been linked to heightened enjoyment of positive experiences and displeasure with negative experiences.

Based on the notion that feelings and sensory sensitivity are critical to consumption enjoyment, we introduce relationship reminders as a novel antecedent of consumption enjoyment, showing how relationship reminders can decrease as well as increase enjoyment. We hypothesize that reminding consumers of relationships they lack triggers affective numbing, which reduces perceptual sensitivity and the ability to extract the positive and negative aspects of sensory experiences. Thus, affective numbing may impact enjoyment of foods, beverages, products, and experiences. More formally, we hypothesize:

H1: When consumers are reminded of a valued relationship they do not have, they will derive *less* enjoyment from *positive* consumption experiences relative to those who are reminded of a relationship they do have.

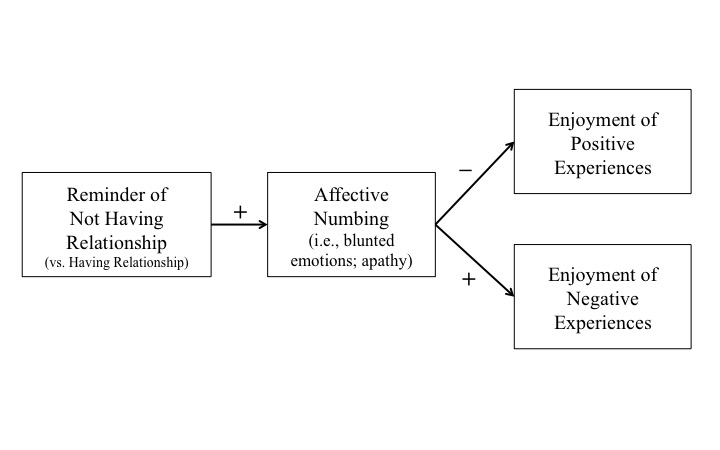
H2: When consumers are reminded of a valued relationship they do not have, they will derive *more* enjoyment from *negative* consumption experiences relative to those who are reminded of a relationship they do have.

H3: Affective numbness mediates the relationship between reminders of valued social relationships and reduced perceptual sensitivity to positive and negative consumption experiences.

These predictions regarding affective numbing run counter to what other theories might predict about how relationship reminders influence feelings and consumption enjoyment.It is commonly assumed that when people are reminded of valued relationships they lack, they will feel *more emotional*, not less. Research showing that consumers experience negative emotions in response to being excluded or being alone (Leary et al. 2001; Richman and Leary 2009) and other psychologically painful events (Skinner and Brewer 2002) supports this alternate notion. By this logic, one could argue that all judgments would be soured, making both pleasant and unpleasant experiences be evaluated more negatively. Alternatively, one may assume that individuals reminded of relationships they lack would be more likely to escape into or immerse themselves in consumption experiences, the logic being that immersion and savoring should increase enjoyment of positive experiences (Hong, Lishner, and Han 2014; Vohs et al. 2013) and decrease enjoyment of negative experiences (Kross and Ayduk 2008).That is, the logic of this alternate notion would predict the opposite pattern of results.

Our theory based on affective numbing, however, suggests a different set of consumer responses. We propose that enjoyment of positive and negative experiences is contingent upon affective numbing. When consumers are reminded of valued relationships they lack, they will shield themselves with affective numbness and subsequently blunt their perceptions such that they derive less enjoyment from positive and more enjoyment from negative experiences (see Figure 1). In contrast, those who have the valued relationship will not numb or compromise their perceptual sensitivities.

**FIGURE 1**



We provide evidence that reminding consumers of relationships they lack causes affective numbing and reduced perceptual sensitivity with paradoxical effects for consumption enjoyment, such that consumers derive *less* enjoyment from positive experiences and relatively *more* enjoyment from negative experiences. Together six experiments support the hypothesis that affective numbing shapes consumption enjoyment and highlight the role relationship reminders play in shaping feelings, perceptions, and consumption enjoyment.We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

**STUDY 1: Field Experiment**

As a test of H1, we conducted a field experiment at a Starbucks café located on campus. We investigated whether encountering a relationship reminder at the café would influence patrons’ actual enjoyment of their beverages. Consistent with H1, we expected those lacking a relationship (e.g., singles) would enjoy their beverages significantly less than coupled individuals after encountering a naturally occurring romantic relationship reminder. The experiment took place over two consecutive weekdays and employed a confederate couple, serving as a natural, human relationship reminder. We collected as many observations as we could on two days when the confederate couple was available during late afternoon hours.

**Method and Procedure**

*Participants and Design.* Study 1 consisted of a two-group design based on relationship status. Sixty-seven participants (32 males, 34 females, and 1 unreported gender) between the ages of 17 and 52 (*M* = 22.8, SD = 6.8) were exposed to a romantic relationship reminder and subsequently completed a drink satisfaction survey as they exited the café.

*Relationship reminder.* Our relationship reminder consisted of an actual romantic couple (i.e., two confederates) that stood on the stairs directly outside of the Starbucks café (see Figure 2). To ensure that the couple was noticed and recognized as romantically involved, the female confederate held a bouquet of flowers and had two heart-shaped balloons tied to her backpack.

**FIGURE 2**

STUDY 1 — CONSUMPTION ENJOYMENT FIELD EXPERIMENT SETUP



In order to make the relationship reminder look natural in the environment and to minimize any possible suspicions about the couple, we used confederates who were a student couple in real-life. Starbucks cups were placed by the couple’s backpacks to appear as if they had just visited the café. Moreover, this particular café location operates solely for “to-go” orders, with no space or seating inside the café for patrons to linger after receiving their beverage. Therefore, patrons often congregate outside the café with their beverages, which made the positioning of our confederates believable. The couple smiled and chatted while rotating between three pre-determined romantic poses (i.e., hand-holding, warm embrace, arm around shoulder) approximately every five minutes so that their interaction appeared more natural. Notably, patrons needed to use the same stairs that the couple was standing on to enter and exit the café, which helped ensure that all patrons were exposed to the relationship reminder. While we did not directly ask patrons if they noticed the couple, research assistants reported that the relationship reminder exposure was successful through patrons’ glances at the couple.

*Satisfaction survey.* Two research assistants, seemingly unrelated to the couple, posed as student government representatives and stood outside of the café. (Because student government is responsible for monitoring student satisfaction with campus food services, their presence proved to be an excellent cover story for data collection.) As individual patrons exited the café with their beverages, they were stopped by a research assistant and asked: “Would you mind taking a *30 second* Starbucks satisfaction survey to help student government? You can enter a raffle to win a $50 Starbucks gift card.” If a patron agreed, the research assistant asked the patron to take a sip of their beverage and handed them a paper survey to complete. To maintain our satisfaction survey cover story and not draw unnatural attention to our confederate couple, no direct measures of affective numbing were taken.

**Measures**

*Consumption enjoyment and Taste perceptions.* Following Redden (2008), survey participants were asked to rate how much they were enjoying their drink on an 11pt scale (1 = not at all, 11 = very much). We also asked participants to rate the overall taste (1 = very poor taste, 9 = very good taste) and the overall quality (1 = very poor quality, 9 = very good quality) of their drink; these two items (α = .84) were averaged to create a taste perception score.

*Drink order and Overall experience*. In keeping with our cover story, participants were then asked to write the name of the drink they ordered and whether they had ordered this drink previously at this café (94% reported they had).They were also asked to rate their overall store experience on an 11pt scale (1 = not at all, 11 = very much).

*Demographics and Partnership status.* Finally, participants responded to demographic measures (i.e., gender and age), and indicated whether they were currently involved in a romantic relationship (“no/yes”). Demographic measures were neither significant predictors nor qualified the results in our studies, and thus, they will not be discussed further.

**Results**

The research assistant noted that three participants completed their survey in the presence of a friend. Because the presence of other valued social relationships could confound the effect of a relationship reminder, these respondents were excluded prior to analysis. (We note, however, that subsequent tests with those participants show that our results are significant both with and without inclusion of these three participants.)

Analyses revealed that singles (*M* = 8.76) reported significantly less consumption enjoyment than coupled individuals (*M* = 10.04; *F*(1, 62) = 6.62, *p* < .02), regardless of what drink they ordered. (Note: Results for consumption enjoyment are similarly significant (*F*(1, 65) = 5.94, *p* < .02) when including the three excluded participants mentioned above.) The taste perception scores were also significant. Singles (*M =* 7.10) reported that their drinks tasted significantly worse than coupled individuals (*M =* 8.07; *F*(1, 62) = 7.08, *p <*.01). There was no significant difference between singles (*M =* 7.76) and coupled participants (*M =* 8.52) in ratings of overall store experience (*F*(1, 62) = 1.80, *p* = 0.18), suggesting that relationship reminders did not impact all judgments universally.

**Discussion**

Study 1 demonstrates that when singles encounter a romantic couple (i.e., a relationship reminder) in a real consumption setting, they enjoy their self-chosen drinks significantly less than coupled individuals who have that type of relationship. To better govern uncontrollable factors inherent in a field study, we ran a conceptually similar study (N=89) in the lab where participants were randomly assigned to view either advertisements featuring romantic couples or control advertisements (products only) and found additional evidence for reduced enjoyment. Specifically, singles reminded of a romantic relationship they do not have (*M =* 7.06) derive significantly less enjoyment from eating a chocolate truffle than coupled individuals (*M =* 8.87; *F*(1, 85) = 4.97, *p <*.03) and singles in a control condition (*F*(1, 85) = 7.40, *p <*.008). No differences in enjoyment were found between single (*M =* 9.27) and coupled (*M =* 8.33; *F*<1, *NS*) individuals in the control condition nor for coupled individuals across conditions (*F*<1). These field and lab study results are consistent with our predictions (H1) for pleasant consumption experiences and provide important evidence for both the external and internal validity of our findings.

**STUDY 2: Reminders of No Longer Having a Relationship Reduce Enjoyment of**

**Hedonic and Utilitarian Products**

Provided our theory that affective numbing generally dampens sensory experience, Study 2 was designed to determine whether reminders of not having a relationship would similarly reduce enjoyment of hedonic and utilitarian products. Since hedonic products tend to be more closely associated with enjoyment, we had anticipated that the effect of relationship reminders might be stronger for hedonic products. If, however, relationship reminders prompt affective numbing and influence sensory perceptions universally, enjoyment of hedonic and utilitarian products might be impacted similarly. We test this using a different sensory modality (touch) and a product category marketed both in terms of hedonic and utilitarian benefits. By holding the actual product constant, we are able to provide a better test of whether relationship reminders similarly impact enjoyment of hedonic and utilitarian goods.

**Method and Procedure**

*Participants and Design.* Sixty-eight lab participants (64% male, 36% female) between the ages of 18 and 26 (*M =* 20.6, SD = 1.3) completed a study for course credit; all observations available during that week’s subject pool session were collected. Participants were told that they would be completing a visualization task and evaluating a product. Participants were randomly assigned to one of only four conditions in a 2 relationship reminder (manipulated: have/ no longer have) x 2 product type (manipulated: hedonic/ utilitarian) between subjects design.

*Relationship reminder manipulation*. Participants were asked to read a scenario, based on prior work (Cavanaugh 2014). Specifically, they read:

“Think of a close friendship that you currently have [no longer have] that you really valued and still have [wished you still had] as a result. Specifically, please bring to mind a close friendship that you currently have [no longer have] because of your own [own lack of] continued investment of time and energy to nurture and keep that close relationship. Please take a moment to bring that specific relationship to mind.”

*Product type manipulation.* After the relationship manipulation, participants were told that we would like them to evaluate a product—hand lotion. All participants received samples of the same product described in one of two different ways. The description accompanying the product sample characterized the lotion as either hedonic (“Bathe your hands in pure silkiness”) or utilitarian (“Protect your hands from harsh weather”) with the corresponding description:

[Hedonic]: “Our lotion is made from a beautifully rich blend of moisturizing ingredients. This luxurious hydrating combination is designed to encourage a state of pleasure. Fashioned from ingredients known to inspire your skin, this decadent lotion provides a pampering experience.”

[Utilitarian]: “Our lotion is made from a skin-supportive blend of moisturizing ingredients. This useful hydrating combination is designed to encourage a state of health. Manufactured from ingredients known to deliver clinically-proven moisture, this basic lotion provides a protective benefit.”

A separate pilot study (N = 99) using items from the Voss, Spangenberg, and Grohmann (2003) Hedonic/Utilitarian Scale confirmed that the hedonic lotion description was viewed as more hedonic (α = .86; *M*hedonic = 5.53 vs. *M*utilitarian = 4.37; *t*(97) = 4.59, *p <*.001) and the utilitarian lotion description was viewed as more utilitarian (α = .77; *M*utilitarian = 5.29 vs. *M*hedonic = 4.65; *t*(97) = 2.43, *p <*.05).

*Consumption enjoyment.* Participants were instructed to locate the product sample and apply the hand lotion and then respond to the questions that followed. Consumption enjoyment (“How much are you enjoying this lotion?”) was measured on the same 11pt scale as Study 1.

*Purchase likelihood and Willingness to pay.* As supplemental measures, participants also indicated their purchase likelihood and willingness to pay for the product. Purchase likelihood (How likely would you be to purchase this lotion?) was assessed on an 11pt scale (1 = not at all likely, 11 = very much likely) and willingness to pay was assessed by the dollar amount entered (How much would you pay for an 8oz bottle of the lotion sampled?).

*Additional measures.* Consistent with prior research that used this manipulation (Cavanaugh 2014), participants also completed single-item measures for happiness (“how happy did you feel?”) and deservingness (“how deserving did you feel?”) on 7pt scales (1 = not at all, 7 = very much). Finally, participants indicated their gender, age, and ethnicity.

**Results**

*Consumption enjoyment.*A model predicting consumption enjoyment was estimated with the relationship reminder manipulation, product type, and their interaction as predictors. The analysis revealed a significant main effect of relationship reminder on consumption enjoyment (see Figure 3); those reminded of not having a friendship (*M =* 6.05) experienced significantly less enjoyment than those reminded of having a friendship (*M =* 8.16; *F*(1, 64) = 15.17, *p <*.0003). Accordingly, pairwise comparisons revealed that reminders of not having a friendship significantly reduced enjoyment relative to reminders of having a friendship similarly for both the hedonic (*M*not = 5.60 vs. *M*have = 7.80; *F*(1, 64) = 8.37, *p <*.006) and utilitarian (*M*not = 6.50 vs. *M*have = 8.53; *F*(1, 64) = 6.85, *p <*.02) products. Together, these results support H1. Neither the product type (*F*(1, 64) = 2.25, *p* = 0.14) nor the product type by relationship reminder interaction (*F*<1) were significant. Results for purchase likelihood and willingness to pay were substantively the same.

**FIGURE 3**

STUDY 2 — CONSUMPTION ENJOYMENT SAMPLING LOTION

*Additional measures.* Consistent with prior work (Cavanaugh 2014), individuals reminded of no longer having a relationship reported less deservingness (*M*not = 3.59 vs. *M*have = 4.66; *F*(1, 64) = 8.91, *p <*.005) and less happiness (*M*not = 2.88 vs. *M*have = 5.26; *F*(1, 64) = 60.26, *p <*.0001). No other effects were significant (all *p* > .56). We note that neither happiness nor deservingness mediated the enjoyment result.

**Discussion**

Study 2 shows that regardless of whether a product is hedonic or utilitarian, reminders of not having a relationship significantly reduce consumption enjoyment relative to reminders of having a relationship. Using sensory touch stimuli, Study 2 provides evidence that consumers reminded of relationships they do not have experience less enjoyment. Studies 1 and 2 demonstrate reduced enjoyment across two different sensory modalities (gustatory and tactile), but why do these reductions in enjoyment occur in response to relationship reminders? Provided that mood does not seem to explain these findings, Study 3 is designed to directly test whether reminding consumers of valued relationships they lack induces affective numbing as hypothesized.

**STUDY 3: The Role of Affective Numbing**

Affective numbing may serve as a strategy for self-protection to cope with situations that are distressing or threaten the self, such as lacking a valued social relationship. Building from this logic, we predicted that when individuals are reminded of a relationship they lack, affective numbing results. Study 3 tested this hypothesis directly using romantic relationship reminders and two measures of affective numbing (i.e., blunted emotion and apathy). Participants were asked to rate their current level of apathy using items from the Apathy Evaluation Scale (AES; Marin, Biedrzycki, and Firinciogullari 1991). They also completed a comprehensive emotion evaluation procedure (Twenge et al. 2001); we expected blunted emotion to manifest as lower levels of emotion across valence (i.e., less positive and less negative emotion concurrently).

**Method and Procedure**

*Participants and Design.* Ninety two participants (48% male; 52% female) between the ages of 18 and 67 (*M =* 35.2, SD = 12.9) completed the study online for pay. Participants were randomly assigned to one of only four conditions in a 2 relationship reminder (manipulated: control/ romantic) x 2 partnership status (measured: single/ coupled) between subjects design.

*Relationship reminder manipulation.* We used magazine advertisements to remind participants of romantic relationships that they either have or do not have (see also Study 1 discussion). Using an established manipulation (Cavanaugh 2014), each participant viewed twelve advertisements (2 nontarget advertisements and 10 advertisements the featured the focal relationship type). Across conditions, the advertisement layout and tagline were held constant; only the image featured in the advertisement varied. In the romantic relationship reminder condition, the images featured romantic couples. In the control condition, the images featured the product or product environment but no people. For sample advertisements, see Figure 4.

**FIGURE 4**

STUDY 3—SAMPLE RELATIONSHIP REMINDER MAGAZINE ADVERTISEMENTS

|  |  |
| --- | --- |
| **Romantic Relationship Reminder Advertisement** | **Control**  **Advertisement** |
|  |  |

*Apathy scale*. Immediately following the relationship reminder manipulation, participants were asked to report their current feelings. Specifically, participants rated their momentary agreement (i.e., “I currently feel like…”) with three items from the AES (“I am interested in things”, “approaching life with intensity” , “getting things started on my own is important to me”) reflecting the relevant emotion and cognition component of the AES on a 4pt scale (1 = Not at all, 2 = Slightly, 3 = Somewhat, 4 = A lot; Marin et al. 1991). Items were reverse coded prior to analysis so that higher ratings corresponded with greater apathy.

*Emotion evaluation items*. Participants were then asked to think back to the magazine advertisements they had viewed earlier and indicate the extent to which they experienced 20 specific emotion terms (10 positive: accomplished, amused, content, excited, grateful, happy, interested, joyful, love, proud and 10 negative: angry, anxious, ashamed, disappointed, disgusted, embarrassed, fearful, frustrated, guilty, sad) while viewing the ads; 7pt scale (1 = did not experience at all, 7 = experienced very intensely).

*Partnership status.* Finally,participants indicated whether they were currently involved in a romantic relationship (“no/yes”) along with basic demographic questions.

**Results**

*Apathy.* A model predicting apathy (AES 3-items: α = .70) was estimated with the relationship reminder manipulation, partnership status, and their interaction as predictors. The analysis revealed a marginal effect for the relationship reminder and partnership status interaction (*F*(1, 88) = 3.01, *p <*.09). At baseline (control condition), no differences in apathy were found between single (*M =*1.79) and coupled individuals (*M =*1.81; *F*<1). However, when reminded of romantic relationships, singles (*M =* 2.17) reported significantly more apathy than coupled participants (*M =* 1.78; *F*(1, 88) = 5.96, *p <*.02) and more apathy than singles in the control condition (*M =*1.79; *F*(1, 88) = 4.71, *p <*.04). No difference was found for coupled individuals across romantic and control conditions (*M =*1.81; *F*<1).

*Emotion evaluation items.* Following the procedure outlined in Twenge et al. (2001), we used total positive and total negative emotion scores to evaluate blunted emotion (See Table 1). Because all emotions were evaluated on a *unipolar* scale (ranging from no emotion to intense emotion), low scores in *both* positive and negative emotion are needed to substantiate the absence of emotion (i.e., evidence for affective numbing). For each individual, we calculated a total positive emotion score by taking the sum of the ten positive emotions measured; the total positive emotion score could range from 10 (absence of positive emotion) – 70 (intense positive emotion). In the same manner, we calculated a total negative emotion score by taking the sum of the ten negative emotions measured; the total negative emotion score could also range from 10 (absence of negative emotion) – 70 (intense negative emotion).

In the control condition, single (*M =* 38.58) and coupled (*M =* 33.75; *F*(1, 88) = 1.38, p = .24) participants experienced similar levels of positive emotions while viewing the advertisements. However, in the romantic reminder condition, singles (*M =* 28.14) reported significantly lower levels of total positive emotion than coupled participants (*M =* 42.89; *F*(1, 88) = 14.69, *p <*.0000) and singles in the control condition (*F*(1, 88) = 6.19, *p <*.02). Coupled individuals in the romantic condition also experienced more positive emotion than coupled individuals in control condition (*F*(1, 88) = 5.91, *p <*.02). No other comparisons were significant for total positive emotion scores.

Notably, participants in all four conditions reported similarly low total negative emotion scores. Analyses of total negative emotion experienced revealed no significant differences among singles in the romantic condition (*M =* 14.91), coupled participants in the romantic condition (*M =* 12.96), singles in the control condition (*M =* 15.37), or couples in the control condition (*M =* 12.25; all *F*<1). Thus, while those in the other conditions experienced emotion (i.e., positive emotion), singles reminded of romantic relationships experienced concurrently low levels of both positive and negative emotion, further supporting the idea of affective numbing.

**TABLE 1**

STUDY 3 — MEANS OF EMOTIONS EXPERIENCED VIEWING MAGAZINE ADVERTISEMENTS

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Ad Condition | | | | | | | | | | | | | | | | | | | | | | |
| Romantic | | | | | | | |  | | | | Control | | | | | | | | | | |
|  |  | Single | | | Coupled | | | | | | |  | | | Single | | | | | | Coupled | | | |
| Positive Emotions |  |  | | | |  | | |  | | | | | | | | | | | | |  | | |
| Accomplished | 2.00a | | 3.52b | | | |  | | | 3.47b | | | | | | | 2.13a | | | | | |
| Amused | 2.91a | | 4.56b | | | |  | | | | | | | | 3.90a,b | | | | 4.25b | | | |
| Content | 4.00 | 4.85 | | | |  | | | | | | | | | 4.16 | 4.25 | | | | | |
| Excited | 2.36a | | 3.41b | | | |  | | | | | | | | 3.63b | | 3.08a,b | | | | | | |
| Grateful | 2.09a | | 3.56b | | | | 3.26b | | 2.54a,b | | | | | | |
| Happy | 3.27a | | 5.11c | | | | 4.37b,c | | | | 3.92a,b | | | | |
| Interested | 3.96a | | 5.33b | | | | 4.95b | | 5.17b | | | | |
| Joyful | 2.86a | | 4.48c | | | | 4.00b,c | | | | 3.13a,b | | | | |
| Love | 2.46a | | 4.67c | | | | 3.58b | | 2.75a,b | | | | | | |
| Proud | 2.23a | | 3.41b | | | | 3.26a,b | | | | 2.54a,b | | | | |
| Total Positive Score | 28.14a | | 42.89c | | | | 38.58b,c | | | | 33.75a,b | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
| Negative Emotions | Angry | 1.59 | 1.37 | | | |  | | | | | | | | | 1.47 | 1.04 | | | | | |
| Anxious | 1.64 | 1.74 | | | | 1.53 | 1.50 | | | | | |
| Ashamed | 1.14 | 1.22 | | | | 1.32 | 1.00 | | | | | |
| Disappointed | 1.96 | 1.48 | | | | 2.11 | 1.50 | | | | | |
| Disgusted | 1.46 | 1.15 | | | | 1.58 | 1.04 | | | | | |
| Embarrassed | 1.27 | 1.11 | | | | 1.16 | 1.13 | | | | | |
| Fearful | 1.41 | 1.30 | | | | 1.47 | 1.08 | | | | | |
| Frustrated | 1.68a | | 1.11b | | | |  | | | | | | | | 1.68a,b | | | 1.38a,b | | | | | |
| Guilty | 1.05a | | 1.22a,b | | | | |  | | | | | | | 1.58b | | 1.25a,b | | | | | | |
| Sad | 1.73 | 1.26 | | | |  | | | | | | | | | 1.47 | 1.33 | | | | | |
| Total Negative Score | 14.91 | 12.96 | | | | 15.37 | 12.25 | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Total Emotion Score | 43.05a | | 55.85c | | | | |  | | | | 53.95b,c | | | | | | 46.00a,b | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | |

NOTE.—Significant contrasts are identified with different letters in superscript notation. No letters indicate no significant difference among all conditions.

**Discussion**

The results from Study 3 demonstrate that reminding consumers of relationships they lack propagates affective numbing. Study 3 directly measured affective numbing through assessments of blunted emotion and apathy. While intuition may suggest that reminders of having a relationship should elicit strong positive emotion and reminders of lacking a relationship should elicit strong negative emotion, we find some direct evidence to the contrary. We find that individuals reminded of a relationship they lack indicate that they experience less emotionality across valence than those reminded of a relationship they have and those not reminded of any relationship.

Consistent with Study 3, additional exploratory studies (not reported in the manuscript) demonstrated affective numbing immediately following relationship reminders; however, when consumption and evaluation of enjoyment intervened between relationship reminders and measurement of affective numbing, accurate retrospective measurement of affective numbing (using Study 3’s detailed measures) was suppressed. This suppression finding is consistent with previously documented bi-directional associations whereby consumption evaluation influences emotions (Macht and Mueller 2007) and emotions influence consumption evaluations (Macht, Roth, and Ellgring 2002).Therefore, in order to provide process evidence, we use a moderation approach (Study 4) and later employ an alternate measure of affective numbing to document measured mediation (Study 5). In Study 4 we provide evidence for the proposed affective numbing mechanism by varying the valence of the consumption experience and demonstrating both reduced enjoyment of positive and increased enjoyment of negative product experiences, as hypothesized (H1 and H2).

**STUDY 4: Relationship Reminders Influence Enjoyment of Positive and Negative Product Experiences**

Study 4 is designed to show that affective numbing dulls sensory perceptions, reducing pleasure in positive experiences and displeasure in negative experiences. While Studies 1 and 2 provided evidence of reduced pleasure, they only examined enjoyment of generally positive product experiences. If affective numbing is present and sensory experiences are dulled, we anticipate finding the opposite effect for negative product experiences. That is, affective numbing should universally dull sensory experiences and thus make a negative experience less unpleasant as well.

**Method and Procedure**

*Participants and Design.* Two hundred and ten participants completed a lab study in exchange for course credit over the course of two weeks of subject pool sessions. Nine participants indicated consuming something (e.g., gum) during the study that skewed their taste perceptions and thus were excluded from the analysis, resulting in a sample of 201 participants (55% male; 45% female) between the ages of 18 and 29 (*M =* 20.4, SD = 1.7). The study used a 2 relationship reminder (manipulated: have/ no longer have) x 2 product valence (manipulated: positive/ negative) between subjects design. Participants were randomly assigned to one of only four conditions. The relationship reminder manipulation and product evaluation procedures were consistent with Study 2.

*Product type manipulation*. After the relationship reminder manipulation, participants were asked to participate in an orange juice tasting. The research assistant handed each participant a small cup of orange juice, which had been doctored before the start of the lab session to taste either good or bad. Following Lee and Tsai’s (2014) paradigm, we used the same “base” orange juice across all conditions and added in a small amount of either honey (positive) or vinegar (negative) to vary product valence. Participants were instructed to take one sip of the orange juice and then answer the questions that followed.

*Consumption enjoyment and Purchase likelihood.* We employed the same measure used in our previous studies to gather participants’ ratings of enjoyment and purchase likelihood.

*Taste perceptions.* As an additional measure, we used Elder and Krishna’s (2010) taste scale to evaluate the orange juice on three dimensions: overall taste (1 = very poor taste, 9 = very good taste), quality (1 = very poor quality, 9 = very good quality), and deliciousness (1= not at all delicious, 9 = very delicious). These three items (α = .96) were averaged into a taste perception score.

**Results**

*Consumption enjoyment.* A model predicting consumption enjoyment was run using relationship reminder condition, product valence, and their interaction as predictors. The analyses revealed a significant effect for product valence (*M*pos= 7.59 vs. *M*neg= 4.24; *F*(1, 197) = 90.99, *p <*.0001), which was qualified by a significant interaction of relationship reminder and product valence (*F*(1, 197) = 13.69, *p <*.0003), as shown in Figure 5. Within the positive condition, those reminded of lacking a friendship (*M =* 6.98) reported significantly lower enjoyment of good orange juice than those reminded of having a friendship (*M =* 8.21; *F*(1, 197) = 5.95, *p <*.02), consistent with our previous results (Studies 1 and 2) and H1. However, we found the reverse effect within the negative product condition. Those reminded of not having a friendship (*M =* 4.93) actually enjoyed their bad orange juice significantly more than those reminded of having a friendship (*M =* 3.55; *F*(1, 197) = 7.82, *p <*.006), consistent with H2. (We note that our results are similarly significant when including the nine participants mentioned above.)

**FIGURE 5**

STUDY 4 —ENJOYMENT OF DRINKING ORANGE JUICE

*Taste perceptions.* The model predicting the taste perceptions score also revealed a significant interaction (*F*(1, 197) = 9.88, *p <*.003) and pattern of means consistent with consumption enjoyment. In the positive product condition, participants reminded of not having a friendship (*M =* 5.87) reported lower taste perception scores relative to those reminded of having a friendship (*M =* 6.49; *F*(1, 197) = 2.54, *p <*.11). In the negative condition, participants reminded of not having a friendship (*M =* 4.14) reported significantly higher taste perception scores than those reminded of having a friendship (*M =* 3.05; *F*(1, 197) = 8.22, *p <*.005).

*Purchase likelihood.* Similarly, the model predicting purchase likelihood also revealed a significant interaction (*F*(1, 197) = 12.23, *p <*.001). When consuming good orange juice, participants reminded of lacking a friendship reported significantly lower purchase likelihoods (*M =* 5.46) than those reminded of having a friendship (*M =* 6.50; *F*(1, 197) = 3.59, *p <*.05). However, when consuming bad orange juice, those reminded of lacking a relationship (*M =* 3.89) reported significantly higher purchase likelihoods than those reminded of having a relationship (*M =* 2.25; *F*(1, 197) = 9.40, *p <*.003).

**Discussion**

Study 4 provides evidence indicating that reminders of not having a relationship do not simply decrease but rather dull the enjoyment of consumption, adding additional support to our proposed affective numbing hypothesis (H3). For positive experiences, dulling leads to a decrease in consumption enjoyment compared to those reminded of having a relationship. For negative experiences, dulling leads to an increase in consumption enjoyment compared to those reminded of having a relationship. Study 5 provides additional process evidence using a direct measure of affective numbing.

**STUDY 5: AFFECTIVE NUMBING EXPLAINS ENJOYMENT**

Study 5 is designed to conceptually replicate the findings in Study 4 using another sensory modality (auditory). Study 5 also provides mediation evidence whereby affective numbing shapes enjoyment of both positive and negative experiences.

**Method and Procedure**

*Participants and Design.* After excluding twenty-one participants who experienced technical difficulties and failed to hear the sounds, our sample consisted of317 participants (53% male; 47% female) between the ages of 18 and 70 (*M =* 31.6, SD = 10.6) who completed the study online for pay. Participants were randomly assigned to one of only eight conditions in a 2 relationship reminder (manipulated: have/ no longer have) x 2 audio clip valence (manipulated: positive/ negative) x 2 (order of measures) between subjects design. The relationship reminder manipulation was consistent with Study 2.

*Product type manipulation*. After the relationship reminder manipulation, participants were told that they would complete an audio clip evaluation. Participants listened to a 24 second audio clip comprised of four, matched, six second sounds one might hear in a consumption setting (i.e., while dining at a restaurant). The sounds were taken from the International Affective Digitized Sounds (IADS-2) database, which provides normative ratings of valence for a set of acoustic stimuli (Bradley and Lang 2007). In the positive audio clip condition, participants heard four positively rated IADS-2 sounds (IADS-2 Positive Sound Name/Number: Baby/110, Cork Pour/226, Laughing/226, Robin/151). Participants in the negative audio clip condition heard four negatively rated IADS-2 sounds (IADS-2 Negative Sound Name/Number: Babies Cry/260, Glass Break/730, Male Cough/241, Car Horns/420).

*Sound evaluation measures.* We employed the same measure used in the previous studies to gather participants’ ratings of enjoyment of the sounds. We also asked participants how unenjoyable it was to listen to the sounds. Both sound evaluation measures (*enjoyable* and *unenjoyable*) were taken on 11pt scales (1 = not at all, 11 = very much).

*Affective numbing.* Provided the paradigmatic measurement difficulties noted previously (see Study 3 discussion), we used a more parsimonious and recently validated measure better suited for testing mediation by affective numbing. Participants reported affective numbness using a measure for emotional blunting (Durso et al. 2015). We asked participants “To what extent do these sounds make you feel an emotional reaction?” on an 11pt scale (0 *=* I feel little to no emotion, 10 = I feel an extreme amount of emotion). This item was counterbalanced with the sound evaluation measures.

**Results**

The counterbalanced order of sound evaluation and affective numbing measures did not significantly impact the results (*F*<1) in Study 5. Therefore, order was not included as a factor, and we collapsed across the order factor prior to analysis.

*Affective numbing.* A model predicting enjoyment of listening to the sounds was run using relationship reminder condition, audio clip valence, and their interaction as predictors. Consistent with negativity bias (Baumeister et al. 2001), there was a main effect of audio clip valence, such that the negative clip (*M =* 6.65) elicited a stronger emotional reaction than the positive clip (*M =* 5.66; *F*(1, 313) = 12.25, *p <*.0006). As predicted, there was also a main effect of relationship reminder such that those reminded of no longer having a friendship (*M =* 5.88) reported significantly lower emotional reactions (i.e., greater affective numbing) to their sensory experience than those reminded of having a friendship (*M =* 6.42; *F*(1, 313) = 3.67, *p <*.05). Consistent with our expectation that affective numbing occurs across valence, the interaction effect was not significant (*F*<1).

*Enjoyment.* A model predicting the extent to which listening to the sounds was *enjoyable* revealed a significant effect for valence (*M*pos= 6.24 vs. *M*neg= 1.98; *F*(1, 313) = 263.19, *p <*.0001), which was qualified by a significant interaction of relationship reminder and valence (*F*(1, 313) = 4.12, *p <*.05), as shown in Figure 6. Within the *positive sound* condition, those reminded of no longer having a friendship (*M =* 5.90) reported less enjoyment than those reminded of having a friendship (*M =* 6.54; *F*(1, 313) = 3.28, *p <*.08), consistent with our previous studies. In the *negative sound* condition, enjoyableness did not differ between the have (*M =* 2.18) and no longer have (*M =* 1.77) conditions *(F*(1, 313) = 1.18, *p* = .28) due to an apparent floor effect with the aversive sounds.

**FIGURE 6**

STUDY 5 —ENJOYABLE AND UNENJOYABLE RATINGS OF AUDIO CLIP

Because of this floor effect for enjoyment of aversive sounds, we also analyzed our measure of how *unenjoyable* the sounds were perceived to be. Again, we found a significant interaction of relationship reminder and valence (*F*(1, 313) = 5.40, *p <*.03), as seen in Figure 6. For the *positive sound* condition**,** those reminded of no longer having a friendship (*M =* 4.91) found the sounds more unenjoyable than those reminded of having a friendship (*M =* 4.27; *F*(1, 313) = 2.58, *p <*.11). In the *negative sound*condition, those reminded of no longer having a friendship (*M =* 8.67) found the sounds to be marginally less unenjoyable than those reminded of having a friendship (*M =* 9.40; *F*(1, 313) = 2.82, *p <*.10), consistent with Study 4 and H2. Thus, although not significant, means indicate that those reminded of not having a relationship experienced less pleasure from positive experiences and less displeasure from negative experiences.

*Mediation.*  Using Hayes’ PROCESS (2013) macro Model 15 with 5,000 bootstrapped samples, we ran two models to determine whether emotional blunting mediated the differences found in how 1) enjoyable and 2) unenjoyable both the positive and negative sounds were perceived to be by relationship reminder condition.

First, we tested the indirect effect of relationship reminder on*enjoyableness*through emotional blunting (i.e., less of an emotional reaction). We found that the conditional indirect effect of the relationship reminder was significant for the positive sound but not the negative sound. The indirect effect for the positive sounds was B = .3253 (SE = .1536), with a 95% bias-corrected bootstrapped confidence interval that excluded 0 (95%CI = .0540, .6667); the indirect effect for the negative sounds did not (B = .0046 (SE = .0346); 95%CI = -.0568, .0869). Thus, emotional blunting explains the effect of relationship reminders on enjoyment when listening to positive sounds.

Second, we tested the indirect effect of relationship reminder on how *unenjoyable* the sounds were perceived to be. We found that both the indirect effect for the negative sounds (B = .1346 (SE = .0908); 95%CI (.0154, .3966) and the indirect effect for the positive sounds (B = -.1045 (SE = .0765); 95%CI (-.3254, -.0037) excluded zero, indicating that emotional blunting explains the effect of relationship reminders on how unenjoyable the sounds are perceived to be. That is, greater emotional blunting made both positive sounds more unenjoyable and negative sounds less unenjoyable, providing process evidence in the form of measured mediation and supporting H3.

**Discussion**

Studies 4 and 5 consistently demonstrate that reminders of no longer having a relationship decrease enjoyment of positive and increase enjoyment of negative sensory experiences relative to reminders of having a relationship. Study 5 also offers important process evidence by providing evidence of mediation by emotional blunting.

**GENERAL DISCUSSION**

This research demonstrates that relationship reminders influence the extent to which consumers derive enjoyment from positive and negative consumption experiences. We show that reminders of not having a relationship cause affective numbing, which blunts sensory perceptions and consumption enjoyment. Thus, when consumers are reminded of relationships they lack, they derive significantly less enjoyment from positive but more enjoyment from negative experiences.

Six studies (five lab and one field experiment) document this phenomenon across multiple social relationship types (reminders of romantic and platonic relationships) and sensory modalities (gustatory, haptic, and auditory). The direct evidence for affective numbing (Study 3) as well as process evidence via moderation (Study 4) and mediation (Study 5) suggests that affective numbing shapes consumption enjoyment. The experiments used validated relationship reminders, measured multiple types of consumption experiences (foods, beverages, and products), and tested the hypotheses in a real-world setting (Study 1). Together, they support the notion that commonly encountered relationship reminders may influence consumption enjoyment in ways unintended by marketers.

**Theoretical Contributions**

Our research shows that reminders of not having a relationship propagate affective numbing, which shapes consumer perceptions by blunting perceptual sensitivity, that is, reducing one’s sensory sensitivity to the pleasant and unpleasant aspects of an experience. By doing so, we offer several important contributions to the consumption enjoyment, emotion, and relationship literatures. First, we extend previous work on *relationship reminders* by showing that relationship reminders not only influence consumers’ decisions (Cavanaugh 2014), but also how much enjoyment they derive from consumption. We identify *affective numbing* as a novel mechanism that helps explain how and why relationship reminders influence consumption enjoyment. Notably, the antecedents and consequences of affective numbness have been understudied in consumer behavior.Our research highlights relationship reminders as a relatively common situation that may lead to affective numbing.

We further contribute by expanding on the consequences of relationship reminders. Consumption is influenced by affective and cognitive processes. Affective pathways regularly dominate consumption enjoyment (Lee and Tsai 2014), however, affective numbing may disrupt that reliance. Prior work shows that reminding consumers of relationships they lack reduces their spending on higher-end products (clothing, accessories, personal care products) because they do not view themselves as deserving (i.e., worthy of reward; Cavanaugh 2014). We believe deservingness and affective numbing are parallel mechanisms that co-occur; deservingness informs choices (Cavanaugh 2014) and affective numbing shapes enjoyment of experiences.

We also contribute to the literature on *predictors* of *consumption enjoyment*. We highlight the role of relationship reminders and affective numbing in shaping enjoyment. Generally, previous work has shown that emotions amplify consumption experiences in a valence-congruent way (i.e., making positive experiences more pleasant and negative experiences more unpleasant). Instead, we show the opposite. Our findings suggest that consumers may respond to potentially painful situations with neither heightened affect nor immersion in the consumption experience but rather with affective numbing.

**Implications**

Our findings also offer some substantive implications for marketers. Many consumption activities (shopping at the mall or eating at a restaurant) occur in the presence of others. Our findings highlight circumstances in which social others can have adverse effects. We identify conditions in which consumption situations and environments, where consumers are reminded of relationships they lack, may hamper consumer perceptions of products and change experiences in unforeseen ways. Beyond enjoyment, our findings further suggest that reminders of not having a relationship can impact purchase intentions and willingness to spend (Studies 2 and 4).

Prior work suggests that shared consumption experiences can increase the amount consumed (Luo 2005), and trade publications encourage marketers to connect with millennials by emphasizing brands as facilitators of relationships and happiness (Monllos 2015). Thus, it may seem sensible to promote products and experiences with social relationships and depictions of shared consumption. However, our research demonstrates that promoting relationship-based happiness may inadvertently blunt consumers’ emotions and experiences of sensory-rich products when consumers lack those valued relationships. Our current findings bolster Cavanaugh’s (2014) assertion that depicting relationships in advertising and marketing may have unintended effects when promoting brands.

Marketers and retailers regularly promote products and experiences that they hope will be perceived positively (e.g., meals, personal care products, movies, vacations). Provided affective numbing’s role in *decreasing pleasure* associated with pleasant experiences, brands and stores may benefit from considering whether aspects of their sales process (e.g., conversations, promotions) or in-store elements (human or decorative surroundings) may create psychological pain, promoting emotional distance and reducing perceptions of intended enjoyment. Provided affective numbing’s role in *reducing displeasure*, there may be instances where affective numbness would be beneficial to consumers. For instance, some consumer products and services are beneficial or necessary but unpleasant (e.g., pungent health tonics, waxing, dental cleanings). Such unpleasant consumption experiences may also be perceived as relatively more enjoyable when affectively numb. To the extent that perceptual dulling may make these experiences more palatable, propagating affective numbing may be useful to consumers and marketers alike. In addition, affective numbing may also make consumers less sensitive to differences between products or variations in product quality.

**Limitations and Future Research**

We acknowledge that our studies have potential limitations. First, while we have suggested that affective numbing is likely to numb sensory perceptions broadly, our tests have focused on three senses: gustatory, tactile, and auditory. To the extent that these senses are important to both food and non-food product evaluations, we believe the perceptions are representative and the effect is generalizable. Second, the majority of our studies were conducted in lab settings in which participants were given products to consume, in an effort to create a more controlled and standardized environment; however, these procedures pose some limitations on external validity. To the extent that we replicate the effect in the field with self-chosen products at a campus café (Study 1), we believe that the effect is robust and holds outside the lab. Third, unpleasant experiences can range from somewhat unpleasant (i.e., drinking orange juice containing vinegar) to highly unpleasant (i.e., tooth pain). To the extent that our *unpleasant consumption experiences are more moderate*, the question of whether affective numbing would similarly impact highly unpleasant consumption experiences remains an empirical question.

The findings support our conceptualization of how relationship reminders influence enjoyment through affective numbing, which we replicated across different relationships (platonic and romantic), different types of reminders (confederates, ads, scenarios), and different consumption experiences (foods, beverages, non-food products). Future research examining additional consequences of affective numbing beyond perceptions of enjoyment may prove fruitful. In particular, to the extent that perceptual numbing persists, it may not only influence evaluations of enjoyment but also change how much product consumers feel they need to consume or use before satiation. In the realm of food, this notion has profound implications for calories consumed and thus, weight management, and obesity. In the realm of products or experiences, perceptual numbing may also play an important role in understanding repetitive consumption and other binge behaviors.

In addition to relationship reminders, there are numerous contexts where consumers may want to distance themselves from other painful situations (e.g., being unable to fit into a certain size of clothing; seeing another customer receive preferential treatment from a store associate). Additional work is needed to determine whether other types of psychologically painful consumption situations result in affective numbing versus other types of coping or mood management. Our findings have highlighted both negative (less pleasantness) and positive consequences (less unpleasantness) of affective numbing; however, we know relatively little about when affective numbing may be useful versus detrimental to consumers. In particular, more research is needed to understand how affective numbing will operate in less sensory rich consumption contexts or domains requiring greater cognitive effort. Future work is needed to understand how affective numbing influences consumers when handling multiple types of psychological pain in situations that are both emotionally and cognitively demanding (e.g., information overload for a high stakes decision). For instance, efforts exploring how affective numbing influences consumers in medical decision-making and retirement decision-making contexts may be particularly useful for consumers, marketers, and policy makers alike. Given how closely linked relationships are with consumption and how inextricably linked emotion is with sensory perceptions, future research in these areas could prove particularly beneficial.

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