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## **Sadness and Consumption**

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### **Abstract**

Sadness influences consumption, leading individuals to pay more to acquire new goods and to eat more unhealthy food than they would otherwise. These undesirable consumption effects of sadness can occur without awareness, thus representing more than just conscious attempts at “retail therapy.” In an experiment with real food consumption, the present paper examines the hypothesis that sadness’ impact on consumption could be attenuated if the choice context counteracted appraisals of helplessness and enhanced a sense of individual control. Results revealed that: (1) sadness elevates self-reports of helplessness in response to the emotion-inducing situation, (2) helplessness mediates the sadness-consumption effect, and (3) inducing a sense of control (via choice) attenuates sadness’ effect.

*Keywords:* Sadness, consumption, choice, decision making, affect, emotion

## Sadness and Consumption

Research on incidental emotion has discovered the pervasive tendency of emotions to carry over from one situation to another, coloring behavior in unrelated tasks (for reviews, see Forgas, 1995; Isen, 1993; Keltner & Lerner, 2010; Loewenstein & Lerner, 2003; Schwarz, 2000). Incidental emotions (i.e., normatively irrelevant, prior emotions) have been found to reliably influence numerous aspects of judgment and decision making, such as risk seeking (Johnson & Tversky, 1983; Lerner & Keltner, 2001), information processing (Isen, 2001; Tiedens & Linton, 2001), choice (Garg, Inman, & Mittal, 2005), and financial transactions (Lerner, Small, & Loewenstein, 2004).

One of the most interesting carryover examples involves sadness and consumption. It is interesting for at least two reasons. First, its effects depart from what one would predict based on emotional valence. The standard prediction of a valence-based model would be that any negative emotion, including sadness, should trigger generalized negative valuation of, say, a new product. That is, a negative state should lead one to perceive the world in negative ways. While disgust, another negative emotion, fits that predicted pattern, sadness in fact does not. Sadness actually triggers *positive valuation* of new products, as measured by willingness to pay (Lerner et al., 2004).

A second novel aspect of sadness and consumption is that the carryover effect drives consumption behavior across diverse domains. In the domain of eating, for example, sadness (relative to happiness) leads to increased consumption of tasty, fattening food products, such as buttered popcorn and M&M candies (Garg, Wansink, & Inman, 2007). In the domain of consumer transactions, sadness (relative to a neutral state) increases the amount people spend

to purchase items (Lerner et al., 2004), a phenomenon that has been labeled the *miserly is not miserly effect* (Cryder, Lerner, Gross, & Dahl, 2008).

Importantly, sadness in these cases is *incidental* to the choice at hand. Decision makers were randomly assigned to a sadness induction (e.g., reflecting on past sad events) or a neutral-mood induction. According to the subjects themselves, the incidental sadness should have had no role in shaping their present choices, yet it did play a role. Moreover, unlike making a conscious choice to engage in “retail therapy,” the sad feelings in all these studies carried over to the choice without decision makers realizing it. In fact, when decision makers were asked about the possibility of carryover, they explicitly denied it (for example, see Cryder et al., 2008). Thus, the carryover represents an unconscious, undesirable effect on spending and eating.

Sadness’ effect on consumption can be understood by examining its core relational theme of loss and helplessness (Lazarus, 1991). Notably, sadness is associated not with simple loss (e.g., loss of a replaceable possession) but rather with a sense of *irrevocable* loss (e.g., loss of a loved one). It is the combination of loss and helplessness associated with sadness that leads to compensatory tendencies rather than simply an experience of a low-control, negative emotion (e.g., fear). Thus, there are two important links that we seek to examine to understand the sadness-consumption relationship: first, the link that ties sadness to loss and helplessness, and second, the link that ties this sadness-related sense of loss and helplessness to increased consumption. Our research contributes to the literature in this domain by examining sadness’ links to appraisals of loss and helplessness and by testing whether these appraisals in turn drive the sadness-consumption relationship. Finally, we also study whether inducing a sense of control (via choice) successfully attenuates sadness’ effect.

## Hypotheses Development

Decision makers do not want to pay more or over-consume when they are sad, yet they do so. Moreover, sadness and over-consumption may create negative, recursive cycles of behavior. Episodes of over-consumption can themselves lead to negative moods, which then perpetuate these self-defeating behaviors (Leith & Baumeister, 1996).

As noted, sadness has been associated with the core theme of loss and helplessness (Keltner, Locke, & Audrain, 1993; Lazarus, 1991), and the relationship between sadness-consumption can essentially be understood by examining two questions. First, how is sadness linked to appraisals of loss and helplessness? Second, how do these appraisals of loss and helplessness lead to increased consumption? To answer the first question, we rely on existing literature that has reliably established the link between sadness and appraisals of loss and helplessness. Emotion research (Keltner, Locke, & Audrain, 1993; Lazarus, 1991) suggests that each emotion has a core relational theme that defines it and that sadness has the core theme of loss and helplessness. Accordingly, a heightened sense of situational, rather than individual, control (the extent to which a person believes that a human agent is in control of the situation) characterizes sadness (Lerner & Keltner, 2000; Scherer, 1997; Smith & Ellsworth, 1985; Weiner, 1985). Thus, sadness is distinct from other low-control negative emotions, such as fear and anxiety, which are characterized by distinct relational themes of “immediate, concrete, and overwhelming physical danger” and “facing uncertain, existential threat” (Lazarus, 1991), respectively.

As a result, sadness may evoke implicit goals of changing one's circumstances (Lerner et al., 2004) and acquiring rewarding outcomes (Raghunathan & Pham, 1999) to compensate for the corresponding sense of loss and helplessness. This connection helps us to answer the question of how sadness-related loss and helplessness lead to increased consumption. Specifically, prior research has found sadness to be associated with conscious or unconscious attempts at mood repair (e.g., Raghunathan & Pham, 1999; Schwarz & Clore, 1983; Wegener & Petty, 1994). For example, sad individuals are more likely to choose high-risk/high-reward options as compared to anxious individuals, who implicitly seek uncertainty reduction and are more likely to choose low-risk/low-reward options (Raghunathan & Pham, 1999). More recently, research has revealed a wide range of what might be considered compensatory consumption effects. For example, sad individuals prefer to consume certain "comfort foods" or drinks, such as ice cream or pizza, as opposed to healthier alternatives (Wansink, Cheney & Chan, 2003). And sad individuals are less likely to restrain their consumption of a hedonic, rewarding food than are happy individuals (Garg et al., 2007), unless they believe that eating will not change their mood (Tice, Bratslavsky, & Baumeister, 2001).

Taken together, the foregoing results shed light on the relationship between sadness and consumption. Again, it seems to be the combination of loss and helplessness associated with sadness that seems to give rise to compensatory tendencies rather than a simple lack of control. However, while prior research implies that consumption alleviates feelings of sadness; to our knowledge, no one has collected post-consumption emotion measures to illustrate whether consumption actually alleviates sadness. Thus, it could be that this research merely documents the effect of sadness on consumption-related behaviors rather than the attenuation

of sadness' effect via consumption. Indeed, recent research seems to support the notion that *compensatory consumption does not always attenuate sadness' effects*. Sadness' effect on consumption was found to be resilient even in the face of multiple opportunities to engage in compensatory consumption (Garg & Lerner, 2009). Specifically, the authors hypothesized that the misery-is-not-miserly effect (Cryder et al., 2008) could be attenuated by providing adequate consumption opportunities in other domains (such as hedonic food consumption and positive event recall) prior to eliciting participants' willingness to pay (WTP) for a new product. However, they found that compensatory consumption opportunities failed to attenuate sadness' effect on WTP and concluded that lack of adequate compensation alone does not seem to drive sadness' effect.

These results in particular, raise a question about the mechanics underlying the relationship between sadness and potentially mood-altering consumption. That is, even though the underlying themes of loss and helplessness are associated with sadness (Frijda, Kuipers, & ter Schure, 1989; Keltner & Lerner, 2010; Lazarus, 1991) as well as the pattern of compensatory consumption, increasing the compensation to counter the appraisal of loss does not seem to be enough to attenuate sadness' effect. The question then is whether sadness' effect on consumption can be attenuated by providing individuals with greater individual control and diminished helplessness?

We thus, hypothesize that increasing decision makers' sense of individual control and decreasing their sense of helplessness could attenuate the carryover effects of sadness. Notably, we are not suggesting that helplessness is a unique mediator of sadness' effect; multiple mediators of sadness' effect on consumption behaviors may exist. For example, Cryder

et al. (2008) found self-focus to be a mediator of sadness' effect on willingness to pay. Rather, we focus on helplessness because it connects to the issue of control, which has proven important in guiding emotion effects, based on past investigations using the appraisal tendency framework (Garg et al., 2005; Lerner & Keltner, 2000), and because it is part of sadness' core relational theme (Lazarus, 1991). Further, while different goals may guide sadness' effect on consumption, such as the desire to feel better or to reward or compensate oneself for a sense of loss, we seek to understand the link between sadness' appraisal theme that might be responsible for such goals and consequent increase in consumption. Thus, the current research aims to examine the theoretical drivers underlying sadness' effect rather than its manifestations and to improve our theoretical understanding of sadness because of the negative consequences of unbidden consumption.

An opportunity to choose a gift, rather than merely being endowed with one, may provide individuals with a needed sense of individual control. A long line of research on perceived control and choice suggests that individuals prefer choice (versus no choice) because of its link to self-determination and sense of control (Averill, 1973; Langer, 1975) even when choices are trivial (Langer & Rodin, 1976) and when having more choices degrades decision quality (see Iyengar & Lepper, 2000). It has also been demonstrated that individuals are more satisfied by "free choice" (choice lacking any external influence or motive) rather than "imposed choice" (choice involving an external motive, such as a monetary reward) outcomes (Brehm, 1966; Deci & Ryan, 1987). Thus, because choice might give individuals some semblance of control and therefore alleviate the helplessness that is typically concomitant with sadness, we expect that choice will have a significant attenuating effect on sadness' carryover. It is



noteworthy that while both sadness groups (choice and endowment) end up with a gift and thus, are equally compensated for the feelings of loss; we predict attenuation of sadness' effect only for the choice condition.

We test this idea across a study that focuses on the established relationship between sadness and food consumption (e.g., Garg et al., 2007; Tice et al., 2001). Specifically, our study examines the effect of sadness (versus a neutral state) on consumption of a hedonic food product (M&M candies<sup>1</sup>) and whether this effect is attenuated in the context of choice. In the study, participants in a "high-control" condition are given a choice between a hedonic and a non-hedonic gift after the emotion induction; almost all participants are expected to choose the hedonic gift. Participants in the "baseline" condition are simply endowed (no choice) with the hedonic gift before the emotion induction. (This no-choice condition resembles the standard procedure of giving participants a commodity in studies of the endowment effect.)

The amount of hedonic food participants consume (measured in grams) serves as the dependent variable, and we examine the effect of the choice of gift (high control) versus simple endowment (baseline) on consumption for sad and neutral individuals. Further, we collect measures of helplessness to examine whether helplessness plays a role in explaining the hypothesized sadness-consumption relationship.

A comparison between sad and neutral participants in the baseline condition allows us to test the basic hypothesis (from prior literature) that sadness leads to increased hedonic consumption relative to the neutral condition. This is because the baseline condition closely

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<sup>1</sup> We used M&Ms because, in prior research on emotion and consumption (Garg et al., 2007), they were reliably perceived as a hedonic food product by the sample population in the study.

resembles the procedure adopted in other sadness-consumption studies (e.g., Garg et al., 2007) but with a gift (endowing the Godiva chocolate box) added at the beginning of the experiment.

Thus, we predict (a replication) that:

**H1:** An incidental sadness prime will increase consumption of a hedonic food product relative to a neutral prime.

However, our main interest lies in comparing participants in baseline versus high-control conditions. As discussed earlier, we believe that having a choice will offer participants a sense of empowerment and control that will compensate for the helplessness associated with sadness. Hence, we predict that:

**H2:** Having a choice of gift versus simply receiving the same gift will influence consumption for the sadness condition, such that (a) consumption will be lower for the high-control condition than for the baseline condition, and (b) consumption for the sadness condition and neutral condition in the high-control condition will be statistically equivalent.

## Methods

### Participants and Experimental Design

Participants (N = 104) were recruited from the undergraduate population of a large university in the southern United States for participation in exchange for extra course credit.<sup>2</sup> A

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<sup>2</sup> In line with prior research (Garg et al., 2007), dieters were eliminated.

2 (emotion: sad, neutral) x 2 (choice of gift: baseline [simple endowment], high control) between-subjects design was implemented to test the hypotheses.

### **Procedure<sup>3</sup>**

Each participant was seated in a private cubicle with no visual access to other participants. A brown bag sat on each participant's desk. An experimenter told all the participants that they would be participating in two short studies that had been combined for efficiency reasons. Before they began, a written note instructed *half* the participants to open the brown bag on their desks (baseline condition), which was said to contain a token of appreciation for their participation, a two-piece golden box of Godiva chocolates. The study consisted of two parts: the emotion induction and a story reading task. The procedure closely follows that used in prior research on consumption (Garg et al., 2007) with the exception of the choice of gift manipulation. Importantly, the procedure, in terms of the timing of the tasks, is the same for the choice conditions – baseline and high-control – with the exception of the presence or absence of a choice of a gift.

**Emotion inductions.** Emotions were induced using a well-established methodology in the affect domain (see, for example, Lerner & Keltner, 2001). Specifically, we manipulated discrete, specific emotion states of sadness (rather than generalized negative affect) and neutral by asking participants to respond to two questions. The first question asked participants in the sadness condition to describe three or four things that make them feel sad. The second question then asked them to describe in detail the one thing that makes (or made) them feel

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<sup>3</sup> All procedures for this study were reviewed and approved by the institutional review board at the university where the study was conducted.

most sad. They were encouraged to describe the incident in such a way “that another person reading the description might experience the same feeling.” Participants in the neutral condition were asked to first describe three-to-four activities they did that day and then to describe their typical day in detail, as well as the activities they undertake on a routine day (e.g., Garg et al., 2005).

To estimate the sense of loss associated with the life-event described by each participant, the frequency of ‘loss’ references as evinced by words or phrases representing losing, dispossessing, lacking, wanting, and missing something; were counted and summed. This procedure is similar to that used by Cryder et al. (2008).

**Control manipulation.** Following the emotion induction, participants in the baseline condition, who had already received the Godiva chocolate box prior to the emotion induction, were instructed to continue with “Study 2.” A note instructed the *other half* of participants, those in the *high-control condition*, to open the brown bag and *choose one of the two gifts* in the bag (a box of Godiva chocolates or a Bic ballpoint pen) as a token of appreciation for their participation. This procedure is based on that used by Higgins et al. (2003), who controlled for choice by offering participants a choice between an inexpensive pen and a more desirable coffee mug from participants’ own school, knowing that the vast majority would choose the mug. Thus, the procedure offers participants a real choice but diminishes variance in the choice outcome. In the present study, almost all the participants were expected to prefer the Godiva chocolate to the alternative, the inexpensive pen. While it is true that some participants might find the Godiva box more hedonic as compared to an inexpensive pen, if our prediction of invariance in consumption for participants in the baseline, neutral condition versus the high-

control, neutral condition is supported, it will confirm our premise that this difference in perceived hedonicity is not sufficient to bias the results systematically. Notably, the focus here was not on gift-giving or its effects but rather on the varying levels of control afforded to participants in this context, in keeping with established procedures (e.g., Higgins et al., 2003).

**Filler task.** At this point, all participants were asked to continue with “Study 2.” The procedure for this filler task was adopted *in toto* from Garg et al. (2007). Participants across all conditions were asked to read a two-page event narrative and to rate a series of statements on 7-point scales (1=strongly disagree; 7=strongly agree). The purpose of the task was to give participants time to consume the M&Ms. The narratives (adapted from Garg et al., 2007) have been pre-tested for their affective tone and were designed to help maintain each participant’s existing affective state.<sup>4</sup> The sad event narrative, presented to participants in the sadness condition, described the tragic loss of seven children in a fire and included the emotional responses of eyewitnesses. The neutral event narrative, presented to participants in the neutral condition, described a day in the life of a typical undergraduate and focused on daily activities such as getting ready for class, attending classes, and watching TV.

The statements assessed how well participants could relate to the story, how sad/happy they thought the story was, and how interesting they found the narrative to be. This procedure is similar to that used by Garg et al. (2007). At the same time, each participant was given a pre-weighed bowl of M&M candies as refreshments, along with a bottle of water.

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<sup>4</sup> A filler task that is not geared toward maintaining the emotional tone induced might disrupt emotions’ effects. Prior research has also established that such mood maintenance narratives do not differentially influence participants in different emotion conditions (Garg et al., 2007).

**Additional measures.** Next, participants were given a questionnaire that asked questions regarding the time elapsed since their last meal, the extent to which they felt hungry or full before and after the studies, their dieting status, and whether they tried to restrict or monitor their food consumption during the study. They were also asked whether they were allergic to chocolate, about their average frequency of chocolate consumption (less than once a week, one-to-three times a week, or more than three times a week), whether they intended to keep the “token gift” for themselves or give it to someone else, and whether they considered Godiva to be a brand of luxury chocolates.

Importantly, the questionnaire also collected measures designed to ascertain whether differences in perceived helplessness exist between individuals in the sadness and neutral conditions, as predicted by the theory. Notably, the measures of helplessness are related to the original emotion-inducing situation that participants wrote about for the emotion-induction task rather than their current state with the objective of establishing difference between helplessness appraisals for those in sadness versus neutral states. We further discuss this issue in the general discussion section. Perceived helplessness was measured via three items ( $\alpha = .79$ ), adapted from Hartline & Ferrell (1996), each beginning, “Looking back on it [the autobiographical situation] now, I feel...” (1) “I was well prepared for the situation(s) I faced,” (2) “I had the resources to handle the situation(s),” and (3) “I was helpless to change the situation(s)” (reverse-coded). These items were then averaged to form a composite score for helplessness.

Finally, to collect our emotion manipulation measures, we asked participants to report the feelings they experienced when writing about the autobiographical event pertaining to a

specific emotional state (sadness or neutral). To avoid revealing our interest in specific emotions, the form asked about 18 affective states; only nine were of interest to us (Lerner et al., 2004; Cryder et al., 2008). “Gloomy,” “upset,” “downhearted,” “depressed,” and “sad” comprised a sadness factor ( $\alpha = .95$ ). “Unemotional,” “indifferent,” “neutral,” and “unaroused” comprised a neutral factor ( $\alpha = .80$ ). Response scales ranged from zero (“did not experience the emotion at all”) to eight (“experienced the emotion more strongly than ever before”).

Demographic measures concerning participants’ gender, age, and race/ethnicity were also collected. After completing the study, participants were partially debriefed and dismissed. Each bowl of M&Ms was then individually re-weighed to obtain the amount of food product consumed (in grams).

## Results and Discussion

### Preliminary Analyses: Emotion Manipulation Checks

A 2 (emotion: sad, neutral) x 2 (choice of gift: baseline, high control) individual ANOVA was run with both self-reported feelings of sadness and neutral state. As expected, only the main effect of emotion was significant, revealing strong emotion-induction effects ( $p < .0001$ ) for both sad ( $F(1, 99) = 227.46$ ) and neutral ( $F(1,100) = 47.90$ ) conditions. Further, participants felt significantly more sad than neutral in the sadness conditions ( $t(52) = 11.89, p < .0001$ ) and significantly more neutral than sad in the neutral conditions ( $t(49) = -8.60, p < .0001$ ). A 2 (emotion: sad, neutral) x 2 (choice of gift: baseline, high control) individual ANOVA was also run for the frequency count for the ‘loss’ appraisal coded from the open-ended emotion event

description. Again, only the main effect of emotion was significant ( $F(1, 100) = 105.04, p < .0001$ ), indicating greater sense of loss associated with sadness.

### Helplessness Manipulation Checks

Also as predicted by appraisal theories, individuals in the sadness conditions associated higher levels (indicated by lower scores) of helplessness with the emotion-inducing situation than did individuals in the neutral conditions ( $M_{sad} = 3.01$  vs.  $M_{neutral} = 5.22, F(1,97) = 68.20, p < .0001$ ).

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Insert Figure 1 about here

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### Inferential Analyses

A 2 (emotion: sad, neutral) x 2 (choice of gift: baseline, high control) ANOVA with amount of M&Ms (in grams) consumed as the dependent variable and a “self-other” measure (whether participants intended to keep the Godiva chocolate for themselves or give it to someone else) as a covariate was conducted to test the hypotheses.

Examining the simple effects across different conditions, several important results emerge. The low-control conditions are the closest to the *emotion conditions* used in prior studies and thus the most conducive for examining whether Hypothesis 1 is supported in this study. This is true because participants were endowed with the gift before the emotion induction in the low-control conditions. To test Hypothesis 1, the simple effect between the sad and neutral low-control conditions was compared. The results show that sad participants ate significantly more M&Ms than did neutral participants in these conditions ( $M_{sad} = 20.62$  grams vs.  $M_{neutral} = 9.98$  grams), ( $t = 2.53, p < .05$ ). Thus, Hypothesis 1 is supported.



Hypothesis 2a is also supported. Specifically, the interaction between emotion and the choice condition was significant ( $F(1, 99) = 5.53, p < .05$ ), such that sad individuals consumed significantly more in the low-control condition ( $M = 20.62$  grams) than in the high-control condition ( $M = 7.25$  grams,  $p < .01$ ). On the other hand, neutral individuals consumed about the same amount across the low- versus high-control conditions ( $M_{low-control} = 9.98$  grams vs.  $M_{high-control} = 10.45$  grams,  $ns$ ), as expected. The effect of the covariate was not significant ( $F(1, 99) = .64, ns$ )<sup>5</sup>. Further, our results support the notion that when examining the general population (rather than special groups, such as dieters), the effect of emotion on consumption does not vary by gender.<sup>6</sup>

Hypothesis 2b is also supported; the average amount of M&Ms consumed by sad and neutral ( $M = 10.46$  grams) participants was statistically indistinguishable in the high-control conditions ( $t = .78, ns$ ).

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Insert Figure 2 about here

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Our analyses next addressed the question of mediation. Does helplessness mediate the sadness-to-consumption connection? As discussed, sad individuals reported significantly higher levels of helplessness (indicated by lower scores) associated with the emotion situation than did those in the neutral condition ( $M_{sad} = 3.01$  vs.  $M_{neutral} = 5.22, F(1,97) = 68.20, p < .0001$ ).

Our argument is that this innate helplessness is associated with sadness' effect on consumption

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<sup>5</sup> The analyses were also run without the covariate and all results were replicated including the interaction and simple effect tests.

<sup>6</sup> We examined the effect of gender on consumption. In keeping with prior research in the emotion and consumption domain (see Garg et al., 2007), the effect of gender was found to be insignificant ( $F(1,99) = .01, ns$ ).

and that offering a choice attenuates the effect. That is, we expect helplessness to mediate sadness' effect on consumption in the baseline condition, where participants were not offered a choice, but not in the high-control condition, where choice is expected to decouple the link between sadness and helplessness. To test this, we ran a three-step mediation analysis (Baron & Kenny, 1986) separately for the baseline and high-control conditions, similar to a procedure conducted by Lerner, Goldberg, and Tetlock (1998). Specifically, we ran two sets of one-factor (emotion: sad, neutral) analyses, one for the baseline conditions and the other for the high-control conditions.

As hypothesized, for the baseline conditions, emotion condition predicted helplessness ( $F(1,47) = 21.64; p < .0001$ ); helplessness predicted amount consumed in grams ( $F(1,47) = 5.64; p < .05$ ); and the once-significant path from emotion to amount consumed for the low-control conditions ( $F(1,49) = 4.41; p < .05$ ) became insignificant ( $F(1,46) = 2.38; p = .13, ns$ ) when helplessness was introduced in the same equation, indicating mediation (*Sobel test* = 2.12,  $p < .05$ ). In contrast, for the high-control conditions, helplessness had no effect on the amount consumed ( $F(1,50) = .12; p = .73, ns$ ).

We also tested whether the appraisal of loss mediated the emotion-consumption relationship. However, although emotion condition predicted sense of loss ( $F(1,49) = 37.81; p < .0001$ ), the path from loss to consumption failed to reach significance ( $F(1,49) = .98; ns$ ). Thus, the data establish that helplessness (and not loss) mediates the sadness-consumption relationship and that when choice is offered to sad individuals, the sadness-helplessness-consumption links are decoupled (see Figure 3). This is noteworthy because it suggests that attenuating a particular appraisal (helplessness) for a specific emotion can influence the

outcome variable (consumption in our case), while attenuating a different appraisal (loss) might have no effect. This is insightful and we discuss this further in the following section.

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Insert Figure 3 about here

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Overall, the results of this study reveal that sadness increases consumption unless individuals have a salient sense of high control. To our knowledge, these are the first results to find a theoretically grounded means of attenuating sadness' effects on actual consumption behavior.

### **General Discussion**

Although it has been well established that incidental emotion influences many dimensions of consumer behavior (e.g., Isen, 2001; Isen, Shalke, Clark, & Karp, 1978; Mayer et al., 1992; Schwarz & Clore, 1983), there has been limited evidence of specific emotional states influencing actual consumption behaviors, such as eating. The present research replicated existing findings in a new context, showing the carryover effect of sadness on consumption of a hedonic food product. More importantly, the present research extended prior work by clarifying the role of two appraisals linked to sadness (loss and helplessness) and discovering a key moderator and a key mediator. Importantly, while sadness was associated with an enhanced sense of loss, simply compensating for it (with the chocolate bar) does not help in attenuating sadness' effect on consumption, in line with prior research (Garg & Lerner, 2009). Having a choice is what determined whether sadness' effect was attenuated. We suspect that

this occurs because choice confers a sense of individual control that counteracts the sense of situational control/helplessness associated with sadness.

The results thus establish a conceptual connection with a long line of psychological work on the effects of control (e.g., Averill, 1973; Iyengar & Lepper, 2000; Langer, 1975). And in establishing this connection, a host of implications for attenuating the sadness effect can now be explored. Now that we better understand the sadness-consumption relationship, such undesirable effects as spending too much or eating too much when one is incidentally sad can hopefully be reduced with strategic interventions.

It is important to distinguish between conscious and non-conscious behavior in this context. As we discussed earlier, the effects studied here are different from a more conscious choice to manage negative emotion, such as engaging in “retail therapy.” Our interest lies in the non-conscious effect of sadness on consumption, where participants are unaware of the nature of the effect on their behavior (e.g., the misery-is-not-miserly effect). In this phenomenon, although decision makers do choose to over-consume a food product, it is not a true choice, as they do not consciously realize they are over-consuming and do not attribute consumption to their sadness.

To recap, the study established three key points, namely that: (1) sadness elevates self-reports of loss and helplessness in response to the emotion-inducing situation; (2) while this increased helplessness mediates the sadness-consumption effect, loss does not; and (3) inducing a sense of control (via the provision of choice) attenuates sadness’ effect on consumption. Now that a theoretically grounded moderator and another mediator of sadness’ effects have been identified, multiple strategies for attenuating the effect can be explored.

## Limitations and Future Research

While we explored some of the potential attenuating factors for the relationship between sadness and consumption behaviors, prior research (Garg et al., 2007; Schwarz & Clore, 1983) suggests that other moderators, such as providing information or making the source of the emotion salient, may also be effective attenuating factors. Thus, another direction for future research would be to examine whether such “non-consumption”-oriented moderators (e.g., source salience) are also effective in attenuating the effect of sadness on consumption. In a similar vein, due to space constraints, we were only able to examine one context to establish the theoretical drivers of sadness’ effect. Future research should replicate these results in different contexts, such as those involving complex, difficult decisions, to not only establish the robustness of the results but also generalize the findings beyond the realm of food consumption.

We have argued that sadness’ effect on consumption is driven by its core theme of loss and helplessness (Lazarus, 1991). Although other negative emotions, such as fear and anxiety, share sadness’ low-individual-control appraisal, they are characterized by distinct appraisal themes (Lazarus, 1991). Thus, anxiety and fear lead to an implicit goal of uncertainty reduction, as seen in Raghunathan and Pham (1999), where anxiety led to low-risk/low-reward options, whereas sadness led to high-risk/high-reward options. That is, even though sadness, fear, and surprise (pleasant or unpleasant) are high in uncertainty and low in individual control (Smith & Ellsworth, 1985), they might not generate the same results because of the differences in their core themes. However, given our finding that one appraisal of an emotion might drive an outcome while the other might not, it is important to examine how other low-control negative

emotions (fear, anxiety) might influence consumption, and what their underlying mechanism might be. This is an important area for future research and could help to clarify our conclusions about negative emotions and consumption in general.

While we established that the helplessness associated with sadness mediates the sadness-consumption relationship, we were not able to ascertain the effect of high control on consequent feelings of sadness and helplessness, as inserting measures for those dimensions could have disrupted the process we sought to study. Thus, collecting explicit measures to examine the effect of individual control on one's current state of experienced helplessness and sadness should be a fruitful avenue for future research. It could also shed light on an important theoretical question: Does feeling less helpless correspond with feeling less sad?

The appraisal perspective suggests that every emotion consists of more than one key appraisal (Lerner & Keltner, 2000; 2001). Thus, it will be instructive to examine whether attenuating a single appraisal attenuates an individual's overall felt emotion or merely the effect of the emotion on related outcome variables (as in our research) while not significantly diminishing the overall felt emotion. Taken together, the present results can lead to fruitful avenues for future research aimed at understanding the link between the appraisal structure of an emotion and emotion effects on consumption.

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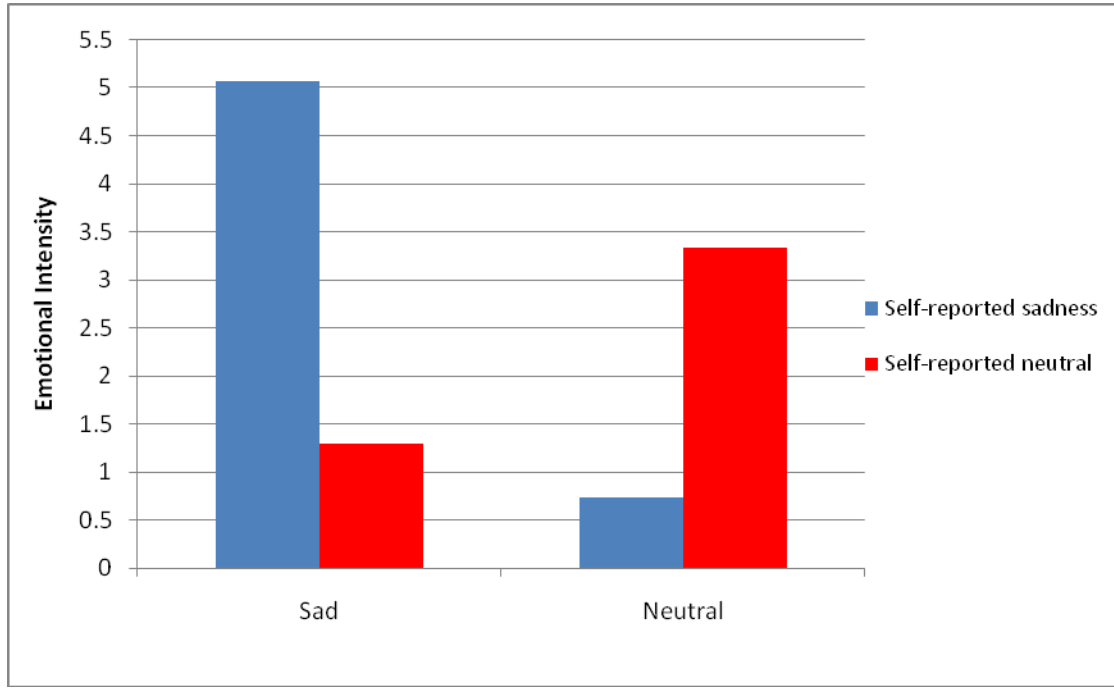
### Figure Captions

*Figure 1.* Manipulation check data show that the inductions had the intended effects.

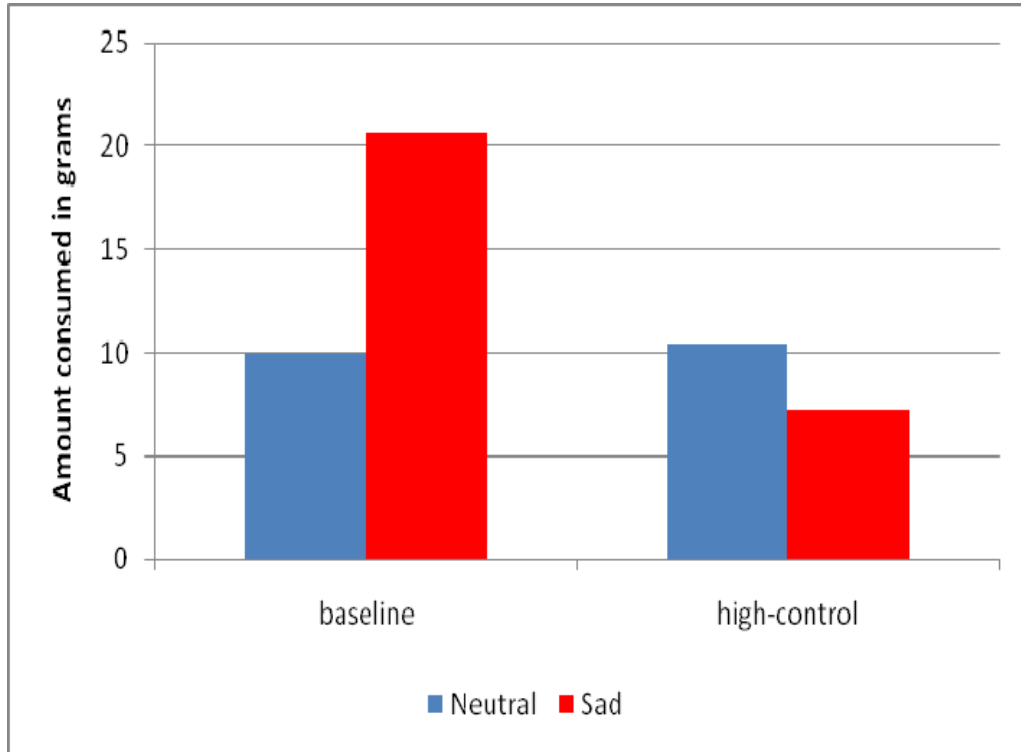
*Figure 2.* Participants in the sad condition only consumed more M&Ms (as measured in grams) when they were in the *baseline* condition.

*Figure 3.* Self-reported helplessness mediates the effect of emotion on M&Ms consumed (in grams) in the *baseline* conditions (presented in the figure) only and not in the *high-control* conditions.

**FIGURE 1**



**FIGURE 2**



**FIGURE 3**

