Hedonic Eating Goals and Emotion: When Sadness Decreases the Desire to Indulge

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This article uses the functionalist perspective of emotion to demonstrate that the influence of sadness on indulgent consumption depends on the presence of a hedonic eating goal. Sadness heightens a person's sensitivity to the potentially harmful consequences of indulgent consumption, which decreases indulgence when a hedonic eating goal is salient. As sadness is often associated with a loss, this protective function is geared toward preventing future losses. The execution of this function is mitigated by feelings of safety, a counterforce to concerns about the harmful consequences of goal pursuit. Alternatively, when a hedonic eating goal is not salient, or a salient goal does not have harmful consequences, sadness results in emotion regulation (i.e., indulging as a means of feeling better). This conceptualization and findings show that the effects of emotions on indulgent consumption can be goal-dependent, and that emotions can aid consumers in the balancing of long-term goals and well-being.

A number of models explain how people pursue goals (goal systems theory, Kruglanski et al. 2002; regulatory focus theory, Higgins, Shah, and Friedman 1997; test-operate-test-exit, Miller, Galanter, and Pribram 1960; goal setting theory, Locke and Latham 1990). These models have been used to gain insight into factors that moderate goal pursuit, including goal accessibility (Kruglanski 1996; Laran and Janiszewski 2009; van Osselaer and Janiszewski 2012), inhibition (Fishbach, Friedman, and Kruglanski 2003), commitment/progress (Fishbach and Dhar 2005), regulatory fit (Crowe and Higgins 1997), and implementation intentions (Gollwitzer and Sheeran 2006). In general, these models assume that moderators of goal pursuit exert a consistent influence across all types of goals (e.g., increasing the accessibility of a goal should always increase the motivation to pursue the goal). That is, the influence of a moderator should not depend on the type of goal.

Research on the influence of emotions challenges the assumption that moderators of goal pursuit should exert a consistent influence across goals. The functionalist perspective of emotion proposes that the influence of an emotion on goal pursuit is a function of the type of goal being pursued. Functionalists argue that certain emotions are informative to the pursuit of certain goals (Campos et al. 2004; Witherington and Crichton 2007). For example, happiness facilitates the pursuit of a self-improvement goal but inhibits the pursuit of a mood management goal, whereas sadness facilitates the pursuit of a mood management goal but inhibits the pursuit of a self-improvement goal (Fishbach and Labroo 2007). Goal-emotion (dis)synergies exist because each emotion consists of a different set of motivational subroutines (DeSteno, Valdesolo, and Bartlett 2006; Griskevicius, Shiotia, and Neufeld 2010; Witherington and Crichton 2007). For example, happiness consists of subroutines that encourage (a) heuristic processing (Tiedens and Linton 2001), (b) an abstract construal (Labroo and Patrick 2009), and (c) an approach orientation (Labroo and Rucker 2009), whereas sadness consists of subroutines that promote (a) systematic processing (Tiedens and Linton 2001), (b) a concrete construal (Labroo and Patrick 2009), and (c) an avoidance orientation (Labroo and Rucker 2009). The implication is that happiness versus sadness should influence goal pur-
suit based on whether the goal is simple versus complex, flexible versus rigid, and based on seeking opportunities versus avoiding risks.

We document an additional influence of sadness on indulgent consumption, which depends on the activation of a hedonic eating goal. A hedonic eating goal typically results in indulgent consumption because a short-term focus on hedonic experiences takes precedence over long-term concerns like weight maintenance, disease prevention, and longevity (Tice and Bratslavsky 2000). Sadness can mitigate this influence of a hedonic eating goal because one function of sadness is to make a person more vigilant about preventing future losses (Lazarus 1991; Lench, Flores, and Bench 2011). Consequently, when a hedonic eating goal is active, an experience of sadness should increase a person’s sensitivity to the potentially harmful consequences of indulgent consumption, which, in turn, should decrease the desire to indulge. In contrast, when sadness is experienced in the absence of an active goal, these harmful consequences of indulgence are less apparent. As a result, sadness should function as a signal to regulate one’s negative emotions and result in increased consumption of indulgent foods as a means of feeling better (Andrade and Cohen 2007; Tice, Bratslavsky, and Baumeister 2001).

In the next section, we draw from the functionalist perspective to better understand how sadness can decrease or increase indulgent consumption. We begin our discussion with an overview of the functionalist perspective, so as to provide a foundation for understanding how emotions can serve as informational sources that can modify or initiate goal-directed behavior (Keltner and Gross 1999; Stein, Liwag, and Wade 1996). We then transition into a discussion of why sadness is uniquely suited to modify hedonic eating goals. We close with a discussion of how people should respond to sadness in the absence of active goals. Four studies test our hypotheses.

FUNCTIONALIST PERSPECTIVE

The functionalist perspective is a framework predicated on the assumption that emotions facilitate adaptive responses to the environment (Campos et al. 1994; Keltner and Gross 1999; Lazarus 1991). The perspective assumes that emotions are an evolutionary adaptation, and it is used to explain how emotions influence different classes of behavior. For example, evolutionary functionalists focus on how emotions are necessary for survival and reproduction (Cosmides and Tooby 2000; Griskevicius, Shioota, and Neufeld 2010; Tooby and Cosmides 1990). Social functionalists focus on how emotions help people engage in efficacious interpersonal, social, and cultural behaviors (Keltner, Haidt, and Shioota 2006). Communicative functionalists focus on how emotional expression alters the behavior of others (Saarni et al. 2006). Constructionists focus on how parental interaction and childhood socialization influence how emotions are experienced and adapted in order to facilitate goal pursuit (Thompson and Lagattuta 2006). The processes that facilitate these adaptive responses vary by class of behavior. Some research streams speak primarily to how emotions initiate goal pursuit (e.g., social functionalism), some to how emotions facilitate or inhibit goal pursuit (e.g., communicative functionalism), and some to how emotions modify goal pursuit (e.g., evolutionary functionalism, constructionism).

The functionalist framework allows for a specific emotion to exert a different type of influence on each type of goal (i.e., an emotion may facilitate the pursuit of goal A but inhibit the pursuit of goal B). Functionalists account for this adaptability through their conceptualization of an emotion. Functionalists assume that each emotion consists of a set of neural programs (Tooby and Cosmides 1990). These neural programs can activate motivational subroutines that facilitate adaptive responses to the environment (DeSteno et al. 2006; Griskevicius, Shioota, and Nowlis 2010). The motivational subroutines are goal- and situation-specific (Tooby and Cosmides 1990). In effect, an emotion increases the accessibility of an array of neural programs, of which the subset that is applicable depends on the specific goal and/or context.

Emotion-Driven Goal Modification

Functionalism conceptualizes goal pursuit as an interaction between a person and an environment. The fact that a person-environment interaction is ongoing (and environments are complex) implies that emotions can modify goal pursuit in multiple ways. First, emotions can be used as feedback during goal pursuit (Louro, Pieters, and Zeelenberg 2007). For example, successful (unsuccessful) goal pursuit can generate satisfaction (frustration) which, in turn, encourages (discourages) continued pursuit of the goal (Ilies and Judge 2005). Second, emotions can be recruited as a means of modifying goal pursuit (Tooby and Cosmides 2008). For example, people can use memories or social interaction to build excitement (indifference) that then encourages (discourages) continued goal pursuit, even though the goal pursuit itself is not responsible for the excitement (indifference). Third, incidental emotion (i.e., emotion unrelated to the goal pursuit itself) can modify goal pursuit (Tooby and Cosmides 1990). For example, incidental pride can discourage the selection of thrifty means when a goal to save money is salient (Wilcox, Kramer, and Sen 2011). Similarly, incidental fear can discourage the pursuit of goals that have immediate consequences for an individual, even if the goal pursuit is not responsible for the experience of fear (Lerner and Keltner 2000).

Evidence that people are sensitive to emotions that are incidental to the pursuit of currently active goals implies that people have an implicit understanding of the usefulness of emotions. If this is so, there should be situational factors that determine when an emotion will function as information that can modify goal pursuit. First, emotions should modify goal pursuit when the subroutines that define the emotion are relevant to the goal and/or situation. To understand this proposition, consider a person with a goal of socializing who subsequently experiences anger. One common subrou-
Sadness and a Hedonic Eating Goal

Sadness is an emotion that elicits a sense of loss (Frijda 2005; Lazarus 1991; Lench et al. 2011). This sense of loss can relate to any resource that affects one’s health or overall well-being, such as the death of a loved one, an encounter with a debilitating ailment, or a breakup with a significant other (Keller and Nesse 2006; Nesse 2006; Raghunathan and Pham 1999). A central adaptive function of sadness is to prompt personal reflection in response to the sense of loss, allowing one to assess and potentially revise subsequent goal-directed behavior (Bonanno, Goorin, and Coifman 2008; Welling 2003). How sadness influences indulgent consumption will depend on the functional response to the sense of loss. Based on our description of the functionalist perspective, we propose that there are two functional responses a consumer can adopt: (1) prevent further loss; (2) regulate the emotion.

A “loss-preventing response” occurs when the functional response to sadness is to accept the loss and adopt a higher level of vigilance, in order to prevent further loss. Consistent with this proposition, Nesse (2000, 2006) has argued that a functional adaptation of sadness is to enhance a person’s ability to detect and inhibit potentially harmful behaviors that could lead to further loss. Similarly, Stearns (1993) has proposed that sadness should heighten a person’s sensitivity to harm in the presence of cues that have led to losses in the past. In this way, sadness acts as an associative bridge, drawing from past losses to inform situations in which future losses could occur. However, since not all loss is preventable, sadness leads people to focus on their goal pursuit because goal pursuit is one potential avenue for further loss that is under the person’s control. This adaptive influence of sadness is consistent with previous research discussing the ability of sadness to encourage a review of and/or alter goals owing to a realization of the potential for loss (Power 1999).

The implication is that the loss-preventing response of sadness should occur in the presence of goals that have the potential for harm, as when one pursues a hedonic eating goal (Laran 2010b). Unhealthy eating is a threat to one’s health and is associated with feeling bad about oneself (Tice and Bratslavsky 2000), overeating (Cochran and Tesser 1996), and addiction (Grant et al. 2010). Second, consumers know they are susceptible to the negative consequences of indulgence (Cochran and Tesser 1996; Polivy and Herman 1985). Third, there are instances in which hedonic impulses are overridden by the activation of virtuous goals (Fishbach et al. 2003; Laran 2010a). The implication is that consumers can learn to anticipate the negative consequences of their indulgent behavior, as long as the context enables learning.

The foregoing predictions pertain to situations in which a hedonic eating goal is active. When there is no active goal, or sadness is not informative to an active goal, sadness should initiate an “emotion regulation response” (Gross and Thompson 2007; Williams et al. 2009). Emotion regulation refers to strategies for amplifying, dampening, or sustaining an emotion (Gross and Thompson 2007). People in a negative emotional state often engage in actions that will make them feel better (Magen and Gross 2010), including indulgent consumption (Andrade and Cohen 2010), overeating (Cochran and Tesser 1996), and addiction (Grant et al. 2010). Second, consumers know they are susceptible to the negative consequences of indulgence (Cochran and Tesser 1996; Polivy and Herman 1985).

Summary

The following studies examine the goal-dependent influence of sadness on indulgent eating behavior, the processes
responsible for this influence, and its boundary conditions. We predict that in the presence of a hedonic eating goal, sadness will exert a loss-preventing response, which will increase one’s sensitivity to the potentially harmful consequences of indulgence and reduce indulgent consumption. In the presence of goals that do not have potentially harmful consequences, or when no goals are active, sadness will encourage emotion regulation and indulgent consumption will occur.

STUDY 1

Study 1 investigated the influence of sadness when there was an active hedonic eating goal (henceforth called “hedonic goal,” for brevity). A hedonic goal was primed by having participants create a list of indulgent activities (Fishbach and Labroo 2007). Sadness was induced via a scenario-based writing task. Indulgent consumption was assessed by providing participants an opportunity to consume M&M’s (Garg et al. 2007; McFerran et al. 2010). We predicted that sad people would indulge more when no goal was active because of emotion regulation efforts. We predicted that sad people would indulge less when a hedonic goal was active because a loss-preventing response would encourage an avoidance of behaviors with potentially harmful long-term consequences.

The study included additional experimental conditions intended to increase our confidence that the loss-preventing response was not characteristic of any negative emotion. To test this possibility, anger and fear conditions were included in the study. These emotion conditions are informative because the functionalist perspective predicts that neither of these emotions should discourage indulgent consumption when a hedonic goal is active.

Anger is an emotion that is accompanied by a sense of frustration with the external agents responsible for preventing desirable outcomes (Carver and Harmon-Jones 2009; Stein and Levine 1990). To the extent a hedonic goal is active, the functional response to anger should be to overcome any perceived obstacles to indulgent consumption (Izard 1993). Given an environment where there are no obstacles, as was the case in our procedure, anger should not influence the amount of indulgent consumption when a hedonic goal is active. Fear is an emotion that is accompanied by an increased sensitivity to imminent danger (Griskevicius et al. 2009; Öhman and Mineka 2003). For example, common sources of fear are physical objects or events (e.g., heights, thunder), interpersonal situations (e.g., social exclusion), and animals (e.g., snakes, spiders; Öhman and Mineka 2001). The functional response to fear is to ignore long-term consequences and focus on the present danger. Thus, the myopic focus that accompanies fear should make it non-informative to hedonic goal pursuit (i.e., it should not influence the amount of indulgent consumption). It should be noted that the functionalist prediction differs from that made by appraisal theory, which posits that fear leads to an appraisal of uncertainty and a lack of control (Raghubhathan and Pham 1999). Uncertainty and a lack of control should discourage goal persistence and reduce indulgent consumption.

Method

Participants and Design. Participants were 239 University of Miami students (47% female, \[M_{age} = 19.82\]) who participated in exchange for course credit. The design was a 2 (goal prime: neutral vs. hedonic) \(\times\) 4 (emotion: no emotion, anger, fear, sadness) between-subjects design. All participants were asked to indicate if they were willing to consume food. In this and all other consumption studies, participants were excluded from taking the study if they indicated that they were unwilling to consume food.

Procedure and Stimuli. Participants entered a behavioral lab and were individually seated at desks in front of personal computers. Participants were then told that there were three studies in the session, supposedly unrelated and pooled together out of convenience. The first study was a goal priming task, adapted from Fishbach and Labroo (2007). Participants were told that the researchers were interested in undergraduate students’ activities. Participants in the neutral goal prime condition listed activities that they performed throughout the course of a normal day. Participants in the hedonic goal prime condition were told that people seek pleasure and that the researchers wanted to learn about the types of activities that they used to indulge themselves. They were then asked to list indulgent activities.

After completing the priming task, all participants moved to a second study that supposedly investigated how well people were able to immerse themselves in hypothetical situations. Unknown to participants, each person received a different emotion manipulation. Participants in the sadness condition read a scenario entitled “Breakup,” in which the person in the passage experiences intense sadness at the end of an extended romantic relationship. Participants in the anger condition read a scenario entitled “Computer Trouble” in which the person in the passage experiences a great deal of difficulty getting technical support. Participants in the fear condition read a scenario entitled “Turbulence” in which the person in the passage is on a turbulent flight that begins a rapid descent. Participants in the no-emotion control group read a scenario entitled “Cleaning Day,” which described an emotionally neutral scenario where the person in the passage spends some time cleaning their home. Participants in all four conditions were asked to read the passage and imagine, as vividly as possible, what it would feel like to be in that situation. To strengthen the manipulation, participants were asked to spend a few minutes writing about how they felt while reading the passage and to describe an experience in which they felt the same way.

In the third study, participants were told that they would be taking part in a taste test that investigated the compatibility of foods with different videos. The instructions explained that participants would have the opportunity to consume M&M’s while watching a YouTube video and that they could consume as many M&M’s as they wanted. Par-
participants were also told that after watching the video, they would be asked a few follow-up questions about how well the food went with the video. In the corner of each participant’s desk sat a bag of M&M’s placed inside a Styrofoam bowl, which was covered by a napkin. Participants were told to remove the napkin from the top of the bowl, open and empty out the entire bag of M&M’s into the bowl, and then proceed with watching the video. Every participant watched a video about how to make origami. The video was approximately 4 minutes long and selected because of its neutral content. Participants were told that they could stop watching the video at any point and to call over the experimenter if they desired to move on to the next part of the task. Bowls were collected when participants called the experimenter or the video ended. Bowls were subsequently weighed to determine consumption.

To maintain the cover story, participants then answered a few questions about the task itself, including how compatible the M&M’s were with the video they watched. Participants were then told that they would also answer a few general questions about M&M’s. Our critical question asked to what extent eating foods like M&M’s have the potential to lead to health problems later in life (1 = “strongly disagree,” 9 = “strongly agree”). This measure of the potential harm from indulgence was expected to mediate the influence of the hedonic goal priming in the sadness condition but not in the other emotion conditions. Participants were then extensively debriefed for suspicion, told about the real purpose of the experiment, thanked for their help, and dismissed. No participant guessed the real purpose of the study or how the goal priming and emotion task could jointly have influenced their food consumption.

Pretest of Emotion Manipulations
A pretest (N = 79) assessed the efficacy of the emotion manipulations (see table 1). Participants were asked to indicate how sad, angry, and afraid they felt at baseline (prior to the hypothetical scenario) and after the emotion manipulation on 9-point scales (1 = “not at all,” 9 = “extremely”). Participants also indicated their overall mood (1 = “negative mood,” 9 = “positive mood”). Participants in the anger, fear, and sadness conditions felt significantly more of their induced emotion after the emotion manipulation. Participants in the anger, fear, and sadness conditions did not differ in negative mood after the emotion manipulation (F < 1), which suggests that any observed differences between angry, fearful, and sad participants is not likely a result of differences in mood.

Results

Consumption. The means indicating the amount of indulgent consumption, in this and all subsequent studies, are presented in table 2. An ANOVA on the amount eaten revealed an interaction between the goal priming and emotion factors (F(3, 231) = 5.51, p < .01; see fig. 1). In the neutral goal prime condition, participants in the anger (M = 23.72; F(1, 231) = 8.40, p < .01), fear (M = 19.43; F(1, 231) = 3.12, p = .08), and sadness conditions (M = 24.66; F(1, 231) = 9.80, p < .01) ate more M&M’s than in the no-emotion condition (M = 13.33). These results suggest that in the absence of an active goal, negative emotions will prompt emotion regulation. In the hedonic goal prime condition, participants made to feel sad consumed fewer M&M’s (M = 12.15) than participants in the no-emotion (M = 22.89; F(1, 231) = 6.94, p = .01), anger (M = 26.01; F(1, 231) = 12.28, p < .01), and fear conditions (M = 23.25; F(1, 231) = 7.63, p < .01). These results are consistent with the loss-preventing response of sadness. In the no-emotion condition, participants consumed more M&M’s in the hedonic goal prime condition (M = 22.89) than in the neutral goal prime condition (M = 13.33; F(1, 231) = 5.84, p = .01). This result verifies the efficacy of the hedonic goal priming manipulation.

Comparisons of priming conditions within each emotion were also consistent with the hypothesized loss-preventing response of sadness. In the sadness condition, participants in the hedonic goal prime condition consumed fewer M&M’s (M = 12.15) than in the neutral goal prime condition (M = 24.66; F(1, 231) = 9.63, p < .01). In the anger condition, participants consumed similar amounts of M&M’s in the neutral goal prime (M = 23.72) and hedonic goal prime conditions (M = 26.01; F < 1). Similarly, in

<table>
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<th>TABLE 1</th>
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<tr>
<td>EMOTION PRETEST RESULTS</td>
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<tr>
<td>Emotion ratings</td>
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<tr>
<td>Anger</td>
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<td></td>
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<td>Fear</td>
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<td></td>
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<td>Sadness</td>
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<td>Overall mood</td>
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Note. — Superscript letters denote differences (p < .05) between means in the same emotion condition. Superscript numbers denote differences (p < .05) between means within the same time measurement column. Standard deviations are in parentheses.
the fear condition, participants consumed similar amounts of M&M’s in the neutral goal prime ($M = 19.43$) and hedonic goal prime conditions ($M = 23.25$; $F < 1$). These results demonstrate that the hedonic goal-based reduction in indulgence was specific to sadness. Not all negative emotions decreased indulgent consumption when a hedonic goal was active.

**Mediation by Potential Harm from Indulgence.** The results of the harm-from-indulgence measure revealed a goal priming by emotion interaction ($F(3, 231) = 2.73$, $p < .05$). The hedonic prime led to expectations of more potential harm from indulgence in the sadness condition ($M_{neutral} = 3.93$, $M_{hedonic} = 5.57$; $F(1, 231) = 5.92$, $p < .01$), but not in the no-emotion condition ($M_{neutral} = 4.63$, $M_{hedonic} = 3.77$; $F(1, 231) = 1.72$, $p > .10$), anger ($M_{neutral} = 3.38$, $M_{hedonic} = 3.43$; $F(1, 231) = .01$, $p > .10$), or fear condition ($M_{neutral} = 4.07$, $M_{hedonic} = 3.55$; $F(1, 231) = .60$, $p > .10$).

We predicted that expectations of more potential harm from indulgence would mediate the influence of the goal prime on the amount of M&M’s consumed in the sadness condition, but not in the other emotion conditions. To test this prediction, we used Mplus to perform a multi-group analysis for moderated mediation. A benefit of Mplus, over a macro such as PROCESS (Hayes 2013), is its ability to perform the simultaneous estimation, and comparison, of the indirect effects of a mediator (potential harm from indulgence) at the various levels of a multicategorical moderator (emotion). Supporting our predictions, the pathway from goal prime to consumption through potential harm was significant and did not include zero in the sadness condition (indirect effect = $-3.93$; 95% confidence interval [CI]: $-9.81$ to $-5.25$), but was not significant in the anger (indirect effect = .05; 95% CI: $-1.64$ to $1.60$), fear (indirect effect = .26; 95% CI: $-1.13$ to 2.21), or no-emotion (indirect effect = .50; 95% CI: $-1.73$ to 2.50) conditions. Additionally, a test comparing the indirect effect in the sadness condition to the indirect effect in the no-emotion condition was significant (difference in indirect effects $= -4.43$; 95% CI: $-10.47$ to $11.60$).

### Table 2: Study Summary Statistics

<table>
<thead>
<tr>
<th>Study 1</th>
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<th>(Anger)</th>
<th>(Fear)</th>
<th>(Sadness)</th>
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<tr>
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<td><strong>Hedonic prime</strong></td>
<td><strong>Neutral prime</strong></td>
<td><strong>Hedonic prime</strong></td>
<td><strong>Neutral prime</strong></td>
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<tr>
<td>Consumption</td>
<td>13.33*</td>
<td>22.89*</td>
<td>23.72*</td>
<td>26.01*</td>
</tr>
<tr>
<td>Potential harm</td>
<td>(11.34)</td>
<td>(16.68)</td>
<td>(16.27)</td>
<td>(15.77)</td>
</tr>
<tr>
<td>Felt safety</td>
<td>(2.74)</td>
<td>(2.80)</td>
<td>(2.47)</td>
<td>(2.60)</td>
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</table>

<table>
<thead>
<tr>
<th>Study 2</th>
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<th>(Sadness)</th>
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<tbody>
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<td><strong>Neutral prime</strong></td>
<td><strong>Hedonic prime</strong></td>
<td><strong>Neutral prime</strong></td>
</tr>
<tr>
<td>Consumption</td>
<td>5.73*</td>
<td>5.90*</td>
</tr>
<tr>
<td>Potential harm</td>
<td>(3.29)</td>
<td>(3.04)</td>
</tr>
<tr>
<td>Felt safety</td>
<td>(2.29)</td>
<td>(2.60)</td>
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<tr>
<th>Study 3</th>
<th>(No emotion)</th>
<th>(Sadness)</th>
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<tbody>
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<td><strong>Neutral prime</strong></td>
<td><strong>Hedonic prime</strong></td>
<td><strong>Neutral prime</strong></td>
</tr>
<tr>
<td>Choice share</td>
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<td>61.8*</td>
</tr>
<tr>
<td>Potential harm</td>
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<td>(2.95)</td>
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<tr>
<th>Study 4</th>
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<th>(Sadness)</th>
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<td><strong>Neutral prime</strong></td>
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<td><strong>Neutral prime</strong></td>
</tr>
<tr>
<td>Choice share</td>
<td>46.4*</td>
<td>64.4*</td>
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</table>

**NOTE.**—In study 1, different superscripts denote differences ($p < .05$) between means in the same prime and emotion condition. In study 2, different superscripts denote differences ($p < .05$) between means in the same emotion and prime condition. In study 3, different superscripts denote differences ($p < .05$) between means in the same prime and emotion condition. Standard deviations are in parentheses.
ANCILLARY STUDY

A common strategy for bolstering evidence about a proposed mediating process is to measure an individual difference variable that correlates with the mediator (e.g., Hong and Sun 2012; Ramanathan and Menon 2006; Winterich and Haws 2011). Given our claim that sadness increases a person’s sensitivity to the potential negative consequence of indulgent consumption (a mediator), we sought to isolate an individual difference variable that would increase the impact of this variable, thus, providing additional support for its relevance. Nenkov, Inman, and Hulland (2008) show that people become better at self-control when they focus on potentially negative outcomes. People that are able to recognize the link between their short-term behaviors and the long-term consequences of their behaviors are less impulsive. We expect that people with this trait would be most sensitive to the combined effects of hedonic goal pursuit and sadness on indulgent consumption. Therefore, we measured people’s tendency to focus on the potential for negative outcomes using the negative-outcome-focus subscale from the elaboration on potential outcomes (EPO) scale (Nenkov et al. 2008). We hypothesized that people who were most sensitive to negative outcomes should show the greatest decrease in indulgent consumption owing to sadness, provided a hedonic goal was active.

Procedure. The experiment was a two-cell design consisting of the neutral and hedonic goal prime conditions in the sadness condition of study 1. The procedure was identical to study 1 except for the following changes. First, participants began the session by answering questions that were purported to help researchers better understand the characteristics of the student body. Participants were asked their age, gender, and 10 personality questions, including four items from the negative-outcome-focus subscale of the EPO scale (1 = “strongly disagree,” 7 = “strongly agree”; Nenkov et al. 2008). The items were “I tend to think about the negative outcomes that might occur as a result of my actions,” “When thinking about my decisions I focus more on their negative end result,” “I often worry about what could go wrong as a result of my decisions,” and “I am often afraid that things might turn out badly.” Second, goal priming was accomplished using print ads. Participants in the neutral (hedonic) goal prime condition rated the effectiveness of six neutral (hedonic) print ads on a scale ranging from 1 (“not at all effective”) to 9 (“very effective”). Neutral ads were for a refrigerator, washing machine, short film festival, jeans, electric car, and trading company. Hedonic ads were for chocolate cake, pizza, French fries, chips, a hamburger, and cinnamon rolls. The emotion manipulation and M&M’s eating task were the same as study 1, except that the video was about how to fix a showerhead.

Participants and Results. Participants were 128 University of Miami students (52% female, $M_{age} = 20.22$) who participated in exchange for course credit. Sad participants in the hedonic goal prime condition consumed fewer M&M’s ($M = 14.59$) than in the neutral goal prime condition ($M = 19.97$; $t(126) = 2.34, p < .05$), which replicates the results of study 1. Moreover, the interaction between the negative outcome focus ($\alpha = .89$) and goal prime manipulation was significant ($\beta = -2.98, p < .05$). To explore the nature of this interaction, we performed a spotlight analysis (see fig. 2; Fitzsimons 2008). At 1 standard deviation (SD) below the mean of negative outcome focus (i.e., low focus on potential negative outcomes), participants in the neutral and hedonic goal prime conditions did not differ in the amount of M&M’s eaten ($\beta = -.51, p > .40$). At 1 SD above the mean of negative outcome focus (i.e., high focus on potential negative outcomes), participants ate fewer of the M&M’s in the hedonic goal prime condition than in the neutral goal prime condition ($\beta = -9.30, p < .01$).

Discussion

Study 1 provides support for the claim that sadness encourages emotion regulation when no goal is active but a loss-preventing response when a hedonic goal is active. Emotion regulation was evident in the neutral goal prime condition, where sadness increased indulgent consumption relative to the no-emotion control group. The loss-preventing response was evident in the hedonic goal prime condition, where sadness reduced indulgent consumption relative to the no-emotion control group. The reduced consumption in the hedonic goal prime condition of the sadness condition depended on participants’ concerns about future harm (study 1). Moreover,
participants with a negative outcome focus were most susceptible to the combined influence of the goal prime and sadness (ancillary study). Finally, similar results were not obtained for anger and fear, suggesting that these emotions were not informative with respect to the pursuit of the hedonic goal. Instead, emotion regulation dictated the response in the anger and fear conditions.

STUDY 2

Study 2 was designed with two objectives in mind. The first objective was to provide additional evidence for the loss-preventing response of sadness. We have argued that the loss-preventing response makes people more sensitive to the potentially harmful consequences of engaging in indulgent consumption. If this is so, the influence of a loss-preventing response should be mitigated when people are made to feel safe and secure. This hypothesis is consistent with the tendency to seek attachment and security following a loss (Bonanno et al. 2008; Bowlby 1969). One way in which people can be made to feel safe is through imagery visualization (Gershoff and Koehler 2011). To the extent that one is able to create a sense of safety, there should be less sensitivity to the potential for long-term harm and indulgent consumption should occur more freely.

The second objective was to show that the loss-preventing response of sadness only exerts an influence in the presence of goals that have potentially harmful consequences associated with their pursuit. If a previously activated goal is not inherently harmful, then sadness should not impact pursuit. To test this prediction, we included a condition in which a creativity goal was primed. We predicted that sadness would not be informative for a creativity goal because the pursuit of the goal has minimal potential for harmful consequences. As a result, we predicted that the presence of this goal would not stop consumers from indulging as a way to feel better (i.e., emotion regulation would take precedence).

These hypotheses were investigated using a consumption context similar to study 1, except that participants were allowed to eat chocolate chip cookies instead of M&M’s. When an emotion regulation response was active (i.e., a creativity goal was active or participants felt safe), participants should have an increased desire for the indulgent food. The desire to engage in emotion regulation should make the food more attractive. When a loss-preventing response was active (i.e., when a hedonic goal was active and participants were sad), participants should have a reduced desire for the indulgent food. This should occur because the loss-preventing response focuses on behaviors that have long-term instrumental value. When participants were made to feel safe, the loss-preventing response should be mitigated, and emotion regulation should occur.

Method

Participants and Design. Participants were 331 University of Florida students (51% female, $M_{age} = 20.07$) who participated in exchange for course credit. The design was a 2 (goal prime: hedonic vs. creativity) × 2 (emotion: no emotion vs. sadness) × 2 (safety: control vs. felt) between-subjects design.

Procedure and Stimuli. Participants entered a behavioral lab and were individually seated in front of personal computers. Participants were then told that there were three studies in the session, supposedly unrelated. The first study was a goal priming task. As in study 1, participants in the hedonic goal priming condition were told that people seek pleasure and that the researchers wanted to learn about these activities. They were then asked to list their favorite indulgent activities. Participants in the creativity goal priming condition were told that people seek to exhibit their creativity in a variety of ways and that the researchers wanted to learn about these activities. They were then asked to list their favorite indulgent activities. Participants in the creativity goal priming condition were told that people seek to exhibit their creativity in a variety of ways and that the researchers wanted to learn about these activities. They were then asked to list their favorite creative activities.

All participants then moved to a second study that administered the emotion manipulation. The sadness and no-emotion manipulations were identical to those used in study 1. Participants in the sadness (no-emotion) condition read the “Breakup” (“Cleaning Day”) scenario, imagined what it would feel like to be in that situation, and then spent a few minutes writing about how they felt while reading the passage and describing a similar personal experience. After the emotion manipulations, participants in the felt safety and control conditions were told, “Before you continue on with the next study, it is important that you take a moment to clear your mind using an imagination task.” Participants in the felt safety condition were asked to “close your eyes and think about how family provides us with lasting security and protection” and to “take the next minute to close your
eyes and imagine how family helps us to know that everything will be okay.” Participants in the control condition were asked to “close your eyes and think about a blank, white wall in front of you” and “take the next minute to close your eyes and imagine what this wall would look like.”

In the third study, participants were told that they would be taking part in a taste test that investigated the compatibility of foods with different videos. The instructions explained that participants would have the opportunity to consume cookies while watching a YouTube video. As in study 1, participants were told that they could consume as much or as little as they wanted and that they would be asked follow-up questions after the video. Participants were asked to open a 2-ounce bag of Famous Amos Chocolate Chip Cookies that had been placed and covered with a napkin in the corner of their carrel. Participants then watched a 4-minute video about how to make origami. After watching the entire video, participants were instructed to stop eating and to record the number of uneaten cookies. This number was subtracted from 10 to calculate the total number of cookies consumed. Afterward, participants indicated how compatible the cookies were with the video, as well as some general questions about cookies. Our critical question asked to what extent eating foods like cookies have the potential to lead to health problems later in life (1 = “strongly disagree,” 9 = “strongly agree”). This measure of the potential harm from indulgence was expected to mediate the influence of the hedonic goal priming in the sadness condition but not in the no-emotion condition. Participants were then extensively debriefed for suspicion, told about the real purpose of the experiment, thanked for their help, and dismissed. No participant guessed the real purpose of the study or how the goal priming and emotion task could jointly have influenced their food consumption.

Results

Consumption. An ANOVA revealed a three-way interaction of emotion, goal prime, and the safety induction ($F(1, 323) = 4.22, p < .05$; see fig. 3). The analysis of this interaction was conducted in two parts. The first part confirmed that there was (1) an emotion regulation effect and (2) a hedonic goal priming effect. Participants primed with the creativity goal were used to test for the emotion regulation effect. Consistent with emotion regulation, sad participants ($M = 6.94$) ate more cookies than no-emotion participants ($M = 5.82; F(1, 323) = 5.40, p < .05$). The no-emotion participants were used to test for hedonic goal priming. Consistent with hedonic goal priming, participants in the hedonic goal prime condition ($M = 6.93$) ate more cookies than participants in the creativity goal prime condition ($M = 5.82; F(1, 323) = 5.53, p < .05$).

The second part of the analysis focused on (1) the loss-preventing response that should emerge from a combination of the hedonic goal prime and sadness and (2) the mitigation of the loss-preventing response when a participant was made to feel safe. Both effects were investigated in the hedonic goal prime condition, where there was an interaction of emotion and the safety induction ($F(1, 323) = 6.59, p < .01$). Participants in the control condition were used to test for the loss-preventing response. Consistent with the hypothesis of a loss-preventing response, sad participants ate fewer cookies ($M = 5.45$) than no-emotion participants ($M = 7.16; F(1, 323) = 7.22, p < .01$). Participants in the sad condition were used to assess if felt safety mitigated the influence of the sadness. Consistent with the hypothesis of a mitigating influence of safety, participants in the felt safety condition ate more cookies ($M = 7.33$) than those in the control condition ($M = 5.45; F(1, 323) = 7.31, p < .01$).

Mediation by Potential Harm from Indulgence. An ANOVA on the potential-harm-from-indulgence measure did not reveal a significant three-way interaction of emotion, goal prime, and the safety induction ($F < 1$). Our main focus, however, was on the prediction that the perceived potential for harm from indulgence should only be responsible for the reduced consumption for hedonically primed sad par-
participants when safety was not felt. Therefore, the effect of emotion on consumption should be moderated by the goal prime and safety induction and mediated by the potential harm from indulgence in the hedonic goal prime, control condition but not in the hedonic goal prime, felt safety condition. We tested this prediction by conducting a moderated mediation analysis using model 10 in the PROCESS macro (Hayes 2013), which allows for the analysis of two moderators (goal prime and safety induction) and their respective interactions with the predictor variable (emotion). Supporting this prediction, in the hedonic goal prime, control condition, the pathway from the emotion manipulation to consumption through potential harm (indirect effect) was significant and did not include zero (indirect effect = -.21; 95% CI: -.52 to -.01), which supports mediation (Zhao, Lynch, and Chen 2010). In the hedonic goal prime, felt safety condition, the indirect effect was not significant and included zero (indirect effect = .09; 95% CI: -.10 to .39). There was also no evidence for mediation in the creativity goal prime, control condition (indirect effect = -.15; 95% CI: -.45 to .04) or the creativity goal prime, felt safety condition (indirect effect = .15; 95% CI: -.03 to .46). Finally, we note that a moderated mediation analysis (model 8) within the control condition—with goal prime as the predictor variable and emotion as the moderating variable—revealed a marginally significant indirect effect of potential harm on consumption in the sadness condition (indirect effect = .59; 94% CI: -1.17 to -0.1). This replicates the indirect effect of potential harm observed in the sadness condition of study 1, under the assumption that the creativity (study 2) and neutral (study 1) goal prime conditions are equivalent in terms of their potential for harm when pursued.

Discussion

Study 2 provides evidence that increased sensitivity to the potentially harmful consequences of indulgence is responsible for the loss-preventing response of sadness. When a sense of safety was induced, however, people were less sensitive to the potential harm, which led to indulgent consumption. In addition, sadness did not result in a loss-preventing response when the active goal (e.g., creativity) was not potentially harmful. This implies that goal states are informative with respect to the response (e.g., emotion regulation, loss-preventing) an emotion (e.g., sadness) will induce.

STUDY 3

As discussed earlier, when sadness is experienced in the absence of a previously activated goal, the default program associated with the emotion should be initiated, and people should engage in emotion regulation. It is only when a hedonic goal is active prior to a person becoming sad that sadness signals the potential for harm, as demonstrated in studies 1 and 2. Therefore, when hedonic goal activation follows the experience of sadness, we expect that the drive to regulate emotion has already taken hold. The addition of cues suggesting indulgence might even amplify the effect of emotion regulation, resulting in overindulgence.

Method

Participants and Design. Participants were 250 members of an online panel (Amazon Mechanical Turk, 53% female, M<sub>age</sub> = 33.60). The design was a 2 (timing of hedonic goal activation: before emotion vs. after emotion) × 2 (emotion: no emotion vs. sadness) between-subjects design. All participants were primed with a hedonic goal. Twenty-three participants failed to fully read the instructions and were excluded (Oppenheimer, Meyvis, and Davidenko 2009), leaving a final sample of 227 used in subsequent analyses.

Procedure and Stimuli. Participants were told that they would participate in three unrelated studies. The first study purportedly investigated cognitive processes associated with unscrambling sentences. In truth, the study was a hedonic goal priming task. Participants were presented with 10 sets of five words and asked to form sentences by unscrambling those words. Each sentence contained a hedonically themed word consistent with the prime (flavor, food, taste, enjoyable, pleasure, delicious, delightful, indulge, diner, and savor). For example, participants unscrambled sets of words with hedonic content, such as “has she taste good very.”

The second study was the emotion induction task. It used the same no-emotion and sadness scenarios from studies 1 and 2. In accordance with the experimental design, the order in which the hedonic goal priming and the emotion induction studies were presented was counterbalanced.

In the third study, participants were told that the researchers were recruiting people to take part in taste tests that would involve eating food. Each participant was asked to choose between taking part in a “raisin-eating study” or “M&M’s-eating study.” Participants were also told that each taste test were equivalent in time and difficulty, and that this was a real choice. A pretest (N = 32) confirmed that participants considered the M&M’s study (M = 5.31) to be more indulgent (1 = “not indulgent at all,” 7 = “very indulgent”) than the raisin study (M = 2.25; t(31) = 10.79; p < .01), and that the M&M’s study (M = 5.75) had greater potential for harmful consequences of overindulgence to occur (1 = “very little potential,” 7 = “a great deal of potential”) than the raisin study (M = 2.47; t(31) = 11.11; p < .01).

After making their choice, participants were asked to indicate the extent to which they were “thinking about how indulgent foods can be harmful when consumed in excess” (1 = “not at all,” 9 = “a great deal”). To provide additional evidence for the sensitivity to the potential harm from indulgence, we then asked participants to think about the M&M’s-eating study (the indulgent study) and provide reasons for why they would or would not want to take part in the study. We were interested in how many participants would provide reasons against the study related to the harmful consequences of indulgence.
Results

**Choices.** A binary logistic regression revealed an interaction between the timing of hedonic goal activation and emotion on the choice of a taste test ($\chi^2(1) = 10.28, p < .01$; see fig. 4). When the hedonic goal was activated before the emotion task, participants in the no-emotion condition were more likely to select the M&M’s-eating study (66.7%) than participants in the sadness condition (42.4%; $\chi^2(1) = 7.08, p < .01$). When the hedonic goal was activated after the emotion task, participants in the no-emotion condition were less likely to select the M&M’s-eating study (61.8%) than participants in the sadness condition (79.2%; $\chi^2(1) = 3.93, p < .05$).

**Mediation by Potential Harm from Indulgence.** An ANOVA on the perceived potential harm from indulgence revealed an interaction between the timing of hedonic goal activation and emotion ($F(1, 223) = 4.24, p < .05$). When the hedonic goal was activated before the emotion task, there was a greater potential harm in the sadness ($M = 5.63$) than in the no-emotion condition ($M = 4.30$; $F(1, 223) = 6.60, p = .01$). When the hedonic goal was activated after the emotion task, the potential harm was similar in the sadness ($M = 4.58$) and the no-emotion conditions ($M = 4.80$; $F < 1$).

We used PROCESS model 8 (Hayes 2013) and predicted that the effect of emotion on food choice would be moderated by the timing of the hedonic goal activation and mediated by potential harm in the sadness condition, but not in the no-emotion condition. Supporting our predictions, when the hedonic goal was activated before the emotion task, the pathway from emotion condition to study choice through potential harm (indirect effect) was significant and did not include zero (indirect effect = -.42; 95% CI: -.82 to -.10), which supports mediation. When the hedonic goal was activated after the emotion task, the indirect effect was not significant and included zero (indirect effect = .07; 95% CI: -.29 to .42), which does not support mediation. These results show that when a person was feeling sad, the potential harm from indulgence did not influence food choice unless the hedonic goal was active prior to the emotion regulation response.

**Reasons Related to Harmful Consequences of Indulgence.** To analyze the qualitative data, we created a variable that was coded as 0 if the participant did not list any reasons related to harm from indulgence and 1 if the participant did. Examples of reasons related to harm from indulgence included “candy is harmful to everyone,” “I tend to over consume on sweet foods,” “M&M’s are dangerous,” and “M&M’s are a risk to our health.” We then compared the number of harm-from-indulgence-themed responses across conditions. A binary logistic regression showed an interaction between the timing of hedonic goal activation and emotion on reasons ($\chi^2(1) = 4.39, p < .05$). When the hedonic goal was activated before the emotion task, participants in the sadness condition were more likely to list reasons related to the harm from indulgence (71.2%) than participants in the no-emotion condition (51.7%; $\chi^2(1) = 4.78, p < .05$). When the hedonic goal was activated after the emotion task, participants in the sadness condition were as likely to list reasons related to the harm from indulgence (39.6%) as participants in the no-emotion condition (47.3%; $\chi^2(1) = .64, p > .40$).

Discussion

The results shed additional light on when the emotion regulation versus the loss-preventing response of sadness will influence indulgent consumption. When the hedonic goal preceded the experience of sadness, the loss-preventing response took hold. People focused on the potentially harmful consequences of indulgence and indicated a reduced desire for indulgent consumption. When the hedonic goal did not precede the experience of sadness, emotion regulation took hold. People focused on emotion regulation and indicated an increased desire for indulgent consumption. The results are consistent with our conceptualization that the experience of sadness is informative only when a previously activated goal has potentially harmful consequences associated with its pursuit.

**STUDY 4**

If decreasing indulgent consumption is a protective response to the potentially negative consequences of indulgence, then increasing the amount of hedonic goal activation should increase the salience of these consequences and influence indulgent consumption. One way to encourage a stronger hedonic goal is to expose people to additional environmental cues associated with this goal. Thus, study 4 used a procedure that included both a scrambled sentence task and exposure to pictures of tempting food, a task that has been used by Geyskens et al. (2008) to increase indul-
gent consumption. In the absence of sadness, this stronger hedonic goal should result in an increased desire for indulgent goods. In the presence of sadness, a stronger hedonic goal should encourage even less indulgent consumption. Increased activation of the hedonic goal should result in increased vigilance and an increased desire to avoid indulgent consumption.

Method

Participants and Design. Participants were 342 University of Miami students (47% female, $M_{age} = 19.97$) who participated in exchange for course credit. The design was a $3$ (goal prime: neutral, hedonic, strong hedonic) $\times 2$ (emotion: no emotion vs. sadness) between-subjects design.

Procedure and Stimuli. Participants were told that they would participate in three unrelated studies. The first study was purportedly investigating cognitive processes associated with unscrambling sentences. In truth, the study was a goal priming task. Participants were presented with 10 sets of five words and asked to form sentences by unscrambling those words. The materials for the hedonic goal prime condition were the same as in study 3. In the neutral goal prime condition, participants unscrambled sets of words with neutral content, such as “a had trip they great.” Participants in the strong hedonic goal prime condition completed one additional task after unscrambling the hedonically themed sentences. These participants were told that we were pretesting stimuli to be used at a later date. They were told that they would receive two pictures drawn from a larger set and they should click on the parts of the picture that they liked most. In truth, everyone in this condition received the same two pictures containing a variety of tempting foods (Geyskens et al. 2008). One picture contained a number of bakery treats and delectable meats, while the other picture contained slices of cake, pies, and éclairs.

Study two was the emotion induction task. It used the same no-emotion and sadness scenarios as the prior studies. The third study pertained to gifts. Participants were told that they would receive a gift card for participation in the session and that they could choose between a gift card to “a grocery store” or “a trendy restaurant.” Consistent with previous research (Okada 2005), a pretest ($N = 32$) confirmed that participants considered the gift card for the trendy restaurant ($M = 5.25$) to be more indulgent than the one for groceries ($M = 2.94$); 1 = “not indulgent at all,” 7 = “very indulgent”; $t(31) = 6.45$; $p < .01$). Participants also indicated that the trendy restaurant ($M = 5.53$) had greater potential for harmful consequences of overindulgence to occur (1 = “very little potential,” 7 = “a great deal of potential”) than the grocery store ($M = 4.41$; $t(31) = 2.60$; $p = .01$). Participants were told that both gift cards were worth the same amount of money. After participants made their choice, they were extensively debriefed for suspicion.

Results

A binary logistic regression shows an interaction between the goal prime and emotion on gift card choice ($\chi^2(1) = 28.43$, $p < .01$; see fig. 5). Within the no-emotion conditions, participants in the hedonic goal prime condition were more likely to select the trendy restaurant gift card (65.5%) than participants in the neutral goal prime condition (46.4%; $\chi^2(1) = 4.22$, $p < .05$), and participants in the strong hedonic goal prime condition were more likely to select the trendy restaurant gift card (82.5%) than participants in the hedonic condition (65.5%; $\chi^2(1) = 4.28$, $p < .05$). These results confirm that the hedonic and strong hedonic goal prime manipulations worked as intended. Within the sadness conditions, however, participants in the hedonic goal prime condition were less likely to select the trendy restaurant gift card (47.3%) than participants in the neutral goal prime condition (64.4%; $\chi^2(1) = 3.39$, $p < .05$), and participants in the strong hedonic goal condition were less likely to select the trendy restaurant gift card (29.8%) than participants in the hedonic goal prime condition (47.3%; $\chi^2(1) = 3.60$, $p < .05$). Supporting the strength of the effect, the interaction between the hedonic and strong hedonic goal prime conditions and emotion on gift card choice remained significant even after removing the neutral goal prime condition from the analysis ($\chi^2(1) = 7.70$, $p < .01$). Finally, sadness increased the choice of the trendy restaurant in the neutral goal prime condition, as would be predicted by emotion regulation ($\chi^2(1) = 3.76$, $p = .05$).

Discussion

The results provide further support for the claim that sadness can have goal-dependent influences on indulgent con-
sensation. When no emotion was present, people became more indulgent as the hedonic goal became stronger (i.e., a stronger goal prime led to increased indulgence). When sadness was present, people became less indulgent as the hedonic goal became stronger (i.e., loss-preventing led to decreased indulgence). The results again support the idea that sadness can exert a protective function. This loss-preventing response increased in intensity as the drive to engage in the pursuit of a potentially harmful goal increased.

**GENERAL DISCUSSION**

This research demonstrates that emotions can generate distinct functional responses depending on the presence or absence of certain consumer goals. Study 1 compared sadness to other negative emotions (anger and fear) and found that only sadness reduced indulgent consumption in the presence of an active hedonic eating goal. The effect of sadness on decreasing indulgent consumption was driven by an increased sensitivity to the potential harm from indulgence. Study 2 found that (1) sadness only attenuated the pursuit of goals that had potentially harmful consequences and (2) inducing a sense of safety attenuated a consumer’s sensitivity to these consequences. These findings suggest that the loss-preventing response of sadness only becomes germane in certain contexts. Study 3 showed that sadness only reduced indulgent consumption when it was experienced after, but not prior to, the activation of a hedonic eating goal. This is further evidence that contextual factors determine the functional response to emotions. Finally, study 4 showed that as the drive to indulge increased, sadness became even more effective at limiting indulgence. This suggests that the effectiveness of emotion, as a regulatory agent, is proportional to the strength of the drive it counteracts.

This article contributes to research showing that sadness is an evolutionarily adaptive emotion (Andrews and Thompson 2009; Keller and Nesse 2006). Research has shown that one function of sadness is to encourage an increased responsiveness to the environment (Nesse 1990, 2000). Consistent with this idea, our findings show that, in certain contexts, sadness encourages people to identify behaviors that are potentially harmful to their long-term fitness. This may occur because sadness induces consumers to link past harmful experiences to current predicaments in order to prevent similar losses from occurring in the future (Andrews and Thomson 2009). In our research, we demonstrate a specific instance in which sadness encourages vigilance and decreases indulgent consumption, as this is a behavior that can lead to further loss and harm. This sensitivity to the potentially harmful consequences of specific types of goal pursuit should become more important as a person ages, as experience should help a person learn how to prevent repeated losses. Related to this idea, Kunzmann and Grün (2005) find that the sense of loss that accompanies sadness becomes progressively more intense as people grow older. Thus, it is possible that the loss-preventing response of sadness becomes stronger as people age.

**Individual Differences and Goal/Emotion Combinations**

We found that the tendency to focus on negative outcomes increases the loss-preventing response of sadness. There may be other individual difference factors that have similar influences. For example, impulsivity might be an individual difference factor that has an impact on the loss-preventing response of sadness in the presence of a hedonic goal. Impulsive consumers struggle with resisting indulgent temptations (Mukhopadhyay, Sengupta, and Ramanathan 2008; Ramanathan and Williams 2007); consequently, the potentially harmful consequences of indulgent consumption may be more accessible in impulsive consumers’ memories. Alternatively, it may be the case that impulsive consumers have chronically active hedonic goals, which could also lead to the loss-preventing response of sadness.

How consumers respond to self-control lapses may also prove to be an important individual difference factor to consider (Laran and Janiszewski 2011; Zemack-Rugar, Corus, and Brinberg 2012). Consumers who tend to regroup following a self-control lapse could exhibit a stronger loss-preventing response because they are more in touch with the benefits of avoiding indulgent consumption. In contrast, consumers who tend to further undermine themselves following a lapse in self-control might display a weaker loss-preventing response because they fail to account for the negative aspects of indulgent consumption.

In addition to the consideration of individual difference factors that may influence indulgent consumption, research examining how goals and emotions shape other aspects of behavior remains largely uncharted. Most research on goals and emotions has focused on how behaviors resulting in goal attainment (nonattainment) can lead to the experience of positive (negative) emotions (Carver and Scheier 1998; Soman and Cheema 2004). Only recently have researchers started to examine how emotions can be informative to goal-directed behaviors (Louro et al. 2007). In this regard, the functionalist perspective is an ideal theoretical framework for investigating this issue (Keltner and Gross 1999). For instance, pride is an emotion that is typically associated with resisting temptations (Mukhopadhyay and Johan 2007). However, in the presence of a goal to be healthy, the experience of pride can result in a sense of accomplishment and redirect behavior toward indulgence (Wilcox et al. 2011). Happiness is an emotion that typically facilitates behavior geared toward self-improvement by increasing one’s receptiveness to feedback (Raghunathan and Trope 2002). However, when a goal to manage one’s mood is active, happiness can redirect behavior away from self-improvement (Fishbach and Labroo 2007). Envy, an emotion elicited from making unfavorable social comparisons with superior others, can increase impulsive behavior (Crusius and Mussweiler 2012). Yet, when a goal to perform is salient, envy can increase pursuit of the goal by improving task perseverance (van de Ven, Zeelenberg, and Pieters 2011). In each of these instances, discrete emotions are shown to have cer-
tain action tendencies that can become modified when paired with an active goal.

Limitations and Future Directions

Our studies were not without limitations. In studies 1–3, the mediator was assessed after the measure of indulgent consumption. The issue of when the mediator should be measured is a challenge for many researchers. To illustrate this point, Iacobucci, Saldanha, and Deng (2007) examined two articles that reviewed the topic (Holland 1986; James, Mulaik, and Brett 1982) and found that 71.1% of the articles that measured an independent variable, mediator, and dependent variable took these measures simultaneously or out of order (e.g., mediator measured after the dependent measure). The primary concern for researchers, which was also the case for our research, is the potential for contamination effects resulting from the measurement of the mediator before the dependent variable. The mere measurement of the potential for harm of indulgence could have had an influence on indulgent consumption and overridden our prior manipulations. Future research could possibly circumvent this issue by measuring the mediator at an implicit level, thereby capturing the process in its intended temporal sequence while maintaining the integrity of the goal and emotion manipulations.

Our research could also be used as a starting point for further exploring other aspects of the interaction between goals and emotions. For instance, in our studies, it is possible that the hedonic goal priming manipulations encouraged an affective experience. Related to this possibility, research has shown that priming emotions can influence people’s behavior. For instance, Goldsmith, Cho, and Dhar (2012) showed that the semantic priming of guilt led to increased pleasure. While it is uncertain whether this increased pleasure was a result of the actual experience of guilt or the semantic association people have with guilt, it speaks to the possibility of certain emotion primes being affectively relevant.

In addition, the current research focused primarily on hedonic goal pursuit, which, in the context of indulgent food consumption, always has a mix of both beneficial (i.e., it is tasty) and harmful (i.e., it is unhealthy) consequences. One possible extension of this research would be to explore whether the loss-preventing response of sadness would occur for the pursuit of goals that only have beneficial (harmful) consequences depending on the success (failure) of the goal. For instance, when one has an active impression management goal in a social interaction, there are beneficial (i.e., being well received by others) and harmful (i.e., being disliked by others) consequences of goal pursuit. It is hard to know if sadness would still create a loss-preventing response, and result in avoidance of the social interaction.

Finally, while our research shows that the temporal sequence of the hedonic goal and sadness interaction is critical to determining when sadness initiates versus modifies goal pursuit, the examination of the temporal interplay between other goals and emotions is largely unexamined. Through the investigation of how temporal dynamics influence other goals and emotions, our understanding of how these factors link together would improve and lead to a more systematic framework for understanding goal and emotion interactions. Future research could investigate these possibilities more closely.

Conclusion

To conclude, we replicate prior findings that hedonic environmental cues can promote indulgence (Wadhwa, Shiv, and Nowlis 2008) and that sadness can create the need to regulate emotion through indulgent consumption (Garg and Lerner 2013; Tice et al. 2001). However, we extend these findings by showing that hedonic environmental cues and sadness may not always encourage indulgent consumption. Rather, sadness can discourage the pursuit of a hedonic eating goal. By decreasing indulgent consumption, one adaptive consequence of sadness is to help consumers become healthier, which is consistent with functionalism and the idea that all emotions, regardless of valence, are useful (Keltner and Gross 1999). It would be naive to suggest that consumers should actively seek out ways to persistently feel sad. Sadness is only relevant to a subset of goals, and it has other negative consequences. However, we do believe that negative emotions are too often stigmatized as something that should not be experienced. Research has shown that both positive and negative emotions encourage adaptive responses, wherein each emotion serves a functional purpose in our day-to-day lives (Andrews and Thomson 2009; Tooby and Cosmides 2008). Thus, it is worth exploring conditions under which negative emotional experiences are beneficial.

DATA COLLECTION INFORMATION

The first author supervised the collection of data by research assistants using participants from the University of Miami (study 1, ancillary study, and study 4), University of Florida (study 2), and the Amazon Mechanical Turk (study 3) between autumn 2011 and spring 2013. The first author was primarily responsible for the data analysis with supervision and input from the second and third authors. Data were discussed throughout the entire research agenda by all authors.

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SALERNO, LARAN, AND JANISZEWSKI


