

THE IRONIC INTERPLAY OF CHOICE AND SADNESS

by

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DEDICATION

To my husband, Otávio, whose support and company made this journey possible. I could not have found a better person to share life with.

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ABSTRACT

The experience of emotions in decision-making processes involves a recursive cycle: emotions not only influence the decisions people make, but the decision-making process also changes people's emotional state. In this dissertation, I focus on the interplay of choice and sadness, given that sadness is a very pervasive emotion. First, I examine whether and why shopping can reduce residual sadness (i.e., whether retail therapy works). Sadness is strongly associated with a sense that situational forces control the outcomes in one's life, and thus I theorize that the choices inherent in shopping may restore a sense of personal control over one's environment, thereby reducing residual sadness. I find that making either real or hypothetical shopping choices helped to alleviate sadness. In addition, I find support for my hypothesis that the underlying mechanism of this effect is personal control restoration. Yet, for consumers to take advantage of the benefits of retail therapy, they must be willing and able to make purchase decisions. However, the experience of sadness tends to increase a person's sense of uncertainty, which can in turn influence a consumer's ability to make decisions. I find that sadness reduced decisiveness, even when being indecisive is financially costly. Supporting the uncertainty process explanation, I also find that anger (a negative emotion that is not associated with a sense of uncertainty) did not reduce decisiveness. The interplay of choice and sadness, then, is something of a viciously paradoxical problem - one's ability to alleviate his or her sadness by making decisions is actually impaired by being sad in the first place.

CHAPTER I

Introduction

In my dissertation, I examine the interplay between choice and sadness. Although there has been extensive work on the effects of emotions on behavior, very little decision-making research has analyzed the effects of behavior on emotions. In Chapter II, I begin to address this gap in the literature by examining the potential healing effects of making choices on experienced sadness. Previous research has documented that people engage in retail therapy when feeling distress, but no previous work has established whether this strategy helps in alleviating sadness. In Chapter III, I address another gap in the literature on the interplay of sadness and decision-making. Previous work in this area has raised the possibility that sadness impairs rational decision-making, but this work always used research paradigms that forced participants to choose between options (e.g., a small immediate reward vs. a large delayed reward). However, it is unclear how sadness influences decision-making when people are not forced to make binary (yes-or-no) choices. In Chapter III, I examine whether sadness reduces decisiveness using a variety of methodologies. In Chapter IV, I conclude by addressing what I deem as a paradox linking sadness and decision-making, and suggest several areas for future research. Before discussing the details of my research, Chapter I begins by reviewing relevant work on emotion and decision-making, which informed my subsequent theorizing and empirical studies in the following chapters.

The Influences of Emotions on Behavior and Decision-Making

The experience of emotions has ample effects on decision-making. Although economic models of decision-making have not traditionally incorporated the influence of emotions, it is clear that judgment and choice processes do not occur in an emotional vacuum (Bodenhausen, Gabriel & Lineberger, 2000). Emotions influence the decisions we make, and the outcome of decisions subsequently influence our experience of emotions (Schwarz, 2000). Even affective states unrelated to the decision at hand can influence decision-making (Loewenstein & Lerner, 2003). Such incidental emotions or moods are unrelated to the object of judgment or decision, as opposed to integral emotional responses, which directly relate to the decision at hand (Pham, 2007).

Early work on affect and decision-making focused primarily on general mood, defined solely in terms of positive or negative valence (e.g., Isen, 1987, Schwarz & Clore, 1983), rather than discrete emotions. One important finding of such work is that people are motivated to maintain positive moods and to repair negative ones (Clark & Isen, 1982). Negative moods predispose people to engage in mood-repairing behaviors, such as or engaging in self-gratifying actions (e.g., taking larger financial rewards from a collective pool of money) or helping other people (Cialdini, Darby & Vincent, 1973; Rosenhan, Underwood & Moore, 1974; Underwood, Moore & Rosenhan, 1973). Importantly, these behaviors were found only when participants believed they could change their negative affect (Manucia, Baumann & Cialdini, 1984), or when people did not have to incur substantial costs to help others (Cialdini, Baumann & Kenrick, 1981; Moore, Underwood & Rosenhan, 1972; Weyant, 1978).

Although much is now understood about the effects of general moods on behavior, it is important to highlight that moods are only one expression of affect. Emotions, which have a clearer target, shorter duration, and more intensive display, also influence behavior in crucial ways above and beyond the broad influence of valence alone. That is, discrete emotions of the same valence have distinct effects on judgment and decision-making based on differences in the cognitive appraisal tendencies associated with each emotion (Lerner & Keltner, 2000). For example, although research on negative moods found that, overall, negative affective states increase the perception of risk when compared to positive moods (Johnson & Tversky, 1983), subsequent research has revealed that the effects of feelings on judgments of risk vary based on particular discrete emotions. Incidental fear increases risk estimates, while incidental anger decreases risk estimates (Lerner & Keltner, 2001).

Further, given the influence of emotions on behavior, it is also plausible that discrete emotions that are experienced for longer periods of time would influence behavior more than emotions that endure for less time. Previous research on the duration of emotions has found substantial differences in average duration across emotions (Fitness & Fletcher, 1993, Gilboa & Revelle, 1994, Scherer, Wallbott & Summerfield, 1986), and several of these studies suggest that sadness is particularly long-lasting. For example, Verduyn et al. (2009) asked participants to report their own emotions in a diary study. They found that short episodes (i.e., less than 10 minutes) of anger and gratitude were more commonly reported than short episodes of sadness and joy. Other studies have found that while fear might last for only a couple of seconds, people report feeling sad for days (Scherer, Wallbott & Summerfield, 1986). Relatedly, negative experiences were found to generate longer subsequent response periods (i.e., rumination), when compared to positive experiences (controlling for peak intensity; Gilboa & Revelle, 1994). This

might be due to the fact that the events which cause negative emotions might require extensive cognitive resource allocation in order to resolve the emotion-inducing issue (thus, in turn, also potentially explaining why these emotional states are experienced for longer).

In addition to usually lasting for long periods of time, sadness is also a very pervasive emotion. People have the tendency to underestimate others' experience of negative emotions (even well-known peers), due to the fact that we tend to hide negative emotions more than we hide positive ones (Jordan et al., 2011). If people experience distress more frequently than we can detect, and if this distress endures for longer than positive emotions, it seems that sadness, compared to other emotions, has a greater potential to impact subsequent unrelated decisions. Due to these characteristics of the experience of sadness, I thus focus on the capability of sadness to influence decision-making.

The Influence of Sadness on Judgment and Decision-Making

The study of discrete emotions focusing on more than valence seems to be particularly important in the case of negative emotions. For example, although the mood congruency hypothesis suggests that negative emotions in general are related to more thoughtful processing, different negative emotions do not always yield similar effects. People experiencing sadness do indeed make less stereotypical judgments and rely more on message content and less on message source. But these results reverse for people experiencing anger (Bodenhausen, Sheppard & Kramer, 1994).

It is also important to highlight that much of the mood research to date has manipulated general positive and negative moods that are in actuality very close to happy and sad emotional

states. However, beyond valence, these emotions also differ in terms of their appraisals of certainty (Smith & Ellsworth, 1985). Sadness is characterized by uncertainty regarding one's condition and future, but happiness is not. If certainty influences judgment and decision-making, independent of valence, then studies of general mood confound valence and certainty. Indeed, Tiedens and Linton (2001) explored whether emotions varying on the certainty dimension influence systematic processing. They found that high certainty emotions (both positive and negative valence) result in greater reliance on source expertise, more stereotyping, and less attention to argument quality – that is, less systematic cognitive processing. Furthermore, certainty affected depth of processing even when the emotion itself was kept constant (i.e., when levels of certainty were manipulated within the sadness manipulation). These findings suggest that certainty is what reduces systematic processing, and not valence. The positive relationship between sadness and deeper processing of information was found in this and several other studies, but in the context of anchoring, sadness actually led to more biased judgments (Bodenhausen, Gabriel & Lineberger, 2000). Sad individuals more systematically use the provided anchor in a hypothesis-testing process, so their tendency to evaluate information more carefully actually increases their susceptibility to anchoring effects.

The detrimental (at least economically speaking) effects of sadness on decision-making were also shown in the ultimatum game paradigm. Sad individuals were less likely to accept unfair offers, which resulted in significantly lower earnings (Harlé & Sanfey, 2007). Sadness also increases impatience in receiving financial rewards. However, sadness only increases impatience when the earliest available reward can be obtained immediately, which can be interpreted as a present bias. If the earliest available reward can be obtained soon but not immediately, sadness does not amplify impatience (Lerner, Li & Weber, 2013). This finding is

consistent with an affect-repair hypothesis, where the bias is only present if it can help people change their aversive affective state in the moment.

Incidental sadness was also shown to influence preferences regarding choices in the domain of risk and reward trade-offs (Raghunathan & Pham, 1999). Preference for higher risk/higher reward gambles (versus a lower risk/lower reward gamble) was shown to be more prevalent among sad participants than among anxious participants. The effect is only significant, though, when participants make choices that affect themselves (i.e., the effect doesn't hold when participants choose on behalf of others), suggesting that participants are making choices strategically to regulate their emotions. This line of research further supports the idea that people frequently make choices in order to regulate their emotional state.

Sadness has also been shown to increase the propensity to spend. Sadness increases the amount participants are willing to pay for an item that they do not currently possess, presumably because sadness evokes an implicit goal of changing one's situation (Lerner, Small & Loewenstein, 2004). Later research on the topic found that sadness only increases willingness to spend when coupled with self-focus, because self-focus triggers a devaluation of the self and opportunities to acquire a good might help restore a positive sense of the self (Cryder et al., 2008). Individuals under distress were more likely to shift behavior towards the goal of feeling better now instead of acting in accordance with normative self-regulation standards (Garg & Lerner, 2013; Tice, Bratslavsky & Baumeister, 2001). For example, sadness increases the consumption of junk food due to increased feelings of helplessness. However, the helplessness that accompanies sadness can be alleviated by increased feelings of control. If people have an opportunity to exert control through choices, then previously induced sadness does not increase consumption of junk food (Garg & Lerner, 2013).

In sum, it seems that sadness increases the propensity to spend and the desire for immediately rewarding options in an attempt to strategically regulate one's emotional state. An open question is whether the decisions made in an attempt to alleviate sadness actually help to alleviate sadness. I begin to address this question in Chapter II. In addition, sadness has been found both to improve and to impair decision-making, depending on contextual factors and the decision at hand. However, while sadness may at times be helpful for decision-making, I hypothesize that uncertainty appraisals that accompany sadness will impair decision-making by reducing decisiveness. I examine this question in Chapter III. Taken together, my work suggests that exercising choice helps to alleviate sadness, but sadness reduces the willingness to make choices. Chapter IV discusses this paradox and poses a number of open questions and promising avenues for future research.

CHAPTER II

The Benefits of Retail Therapy: Making Purchase Decisions Reduces Residual Sadness

I always say shopping is cheaper than a psychiatrist.

—*Tammy Faye Baker*

How do people regulate distress? Several common (often ineffective) responses to distress have been documented, such as rumination, overeating, and alcohol consumption. Researchers have observed that distress can also encourage shopping (Faber & Christenson, 1996; Gardner & Rook, 1988), including unplanned purchases (e.g., Atalay & Meloy, 2011, Study 1). Shopping that is motivated by distress – “retail therapy” – is often lamented as ineffective, wasteful, and a “dark side” of consumer behavior (Kasser & Sheldon, 2000). Popular press accounts of retail therapy typically paint an equally dismal picture (Tuttle, 2010).

I propose that retail therapy has been viewed too negatively. Specifically, I argue that shopping when sad may be an effective way to minimize sadness that lingers (residual sadness) following a sadness-inducing event. I focus on shopping’s potential to reduce residual sadness in particular, as previous research has demonstrated that sadness increases comfort-seeking (Raghunathan, Pham & Corfman, 2006) and willingness-to-pay (Cryder et al., 2008; Lerner, Small & Loewenstein, 2004).

Prior research has provided some suggestive evidence that shopping can convey psychological benefits (Gardner & Rook, 1988). In a diary study, Atalay and Meloy (2011, Study 3) found that most participants reported positive feelings when reflecting on their most recent purchase that was motivated by a desire to repair mood. Faber and Christenson (1996, Table 3) found that people recalled that they were less likely to experience sadness while shopping than immediately before going shopping.

However, causal conclusions remain elusive, as no prior research investigating the influence of shopping on emotion or mood has utilized experimental designs. Instead, it relied on surveys of people who chose to engage in retail therapy, documenting only a correlational relationship between negative moods and propensity to buy (e.g., increased purchasing of unplanned treats, Atalay & Meloy, 2011, Study 1). Without random assignment to shopping or equally engaging “control” activities, it is unclear whether shopping conveys benefits above and beyond those produced merely by distraction or the passage of time.

In addition, research in this area has only loosely conceptualized both affect and shopping. Atalay and Meloy (2011) utilized broad measures of mood (p. 642) and positive emotion and negative emotion indices (p. 653), rather than investigating the experience of specific emotions. Faber and Christenson (1996, p. 809) asked participants to report how they generally feel “while shopping” without referencing any specific shopping episode. Because “shopping” can have many components, including browsing, interacting with salespeople, choosing, paying, acquiring, and consuming, retrospective reports of the effects of “shopping” cannot shed light on which component(s) are necessary for healing to occur.

This last point is not merely a descriptive shortcoming. Differences in the effectiveness of specific components could shed light on why shopping reduces residual sadness. To develop

hypotheses about why some components will be particularly influential, I consider sadness from an appraisal tendency theory perspective (Han, Lerner & Keltner, 2007). Appraisal theory suggests that the way people cognitively appraise their environment is both a cause and consequence of different emotions. Smith and Ellsworth (1985) identified six appraisals that differentiate emotions: the extent to which the current situation is pleasant, predictable, demanding of attention, demanding of effort, under human (versus situational) control, and under one's own or other people's control. Thus, similarly valenced emotions can differ on other important dimensions (e.g., anger and fear are both aversive, but anger is associated with greater certainty; Lerner & Keltner, 2001).

Sadness, more than any other emotion, is associated with a perceived deficiency in personal control over one's environment (Smith & Ellsworth, 1985). People who are sad are especially likely to view their outcomes as governed by situational forces and chance, rather than their own actions. To the extent that these appraisals create or maintain the experience of sadness (Han, Lerner & Keltner, 2007), aspects of shopping that restore a sense of personal control over one's environment may subsequently reduce residual sadness. Indeed, Garg and Lerner (2013, p. 112) proposed that researchers should investigate whether “feeling less helpless correspond[s] with feeling less sad.”

In addition, prior research suggests that the ability to choose tends to enhance one's sense of personal control (Inesi et al., 2011; Langer, 1975). Because choices are inherent to shopping (e.g., choosing whether to buy), shopping may restore a sense of control and thus minimize residual sadness.

Of course, aside from choice, other aspects of the shopping experience could influence one's sadness level. For example, shopping may provide distraction (cf. Kim & Rucker,

2012) or social interaction (O’Guinn & Faber, 1989). Also, purchases produce “consumer surplus” (the difference between one’s willingness to pay for a product and its price), which could be pleasurable (Knutson et al., 2007).

In what follows, I experimentally isolate the influence of choice on the experience of sadness by utilizing simplified paradigms that necessarily strip away extraneous factors that can accompany naturalistic shopping. For example, there is no consumption or social interaction in my experiments. I control for the benefits of distraction in Experiment 1 by including a “browsing” control condition, in which participants must interact with products but cannot buy any.

I focus on choice for two reasons. First, choice is the component of shopping that is most theoretically linked to personal control. Given that sadness is characterized by a lack of personal control over one’s environment, the control imbued by making shopping choices may help reduce residual sadness. Second, I focus on choice because it is arguably the most fundamental component of shopping. While shopping may or may not involve factors not present in my experiments (e.g., social interaction), shopping *always* involves choice.

I propose that making shopping choices can help to restore a sense of personal control over one’s environment, but many people may have difficulty quantifying and articulating the extent to which they feel control over their environment. (In their classic demonstration, Smith and Ellsworth (1985, p. 820) utilized a group of participants pre-screened to be highly emotionally expressive, and asked them to recall their experiences of control during a specific emotional event, rather than their current, ambient feelings of control over their environment.) Thus, in what follows I experimentally manipulate personal control, in order to shed light on this proposed process (cf. Spencer, Zanna & Fong, 2005). I do so by manipulating whether

participants can freely choose among a broad product assortment (Experiment 1), whether participants believe they can ensure that they obtain their preferred product (Experiment 2), and whether participants recall an instance of high or low control over their environment (Experiment 3).

Experiment 1

Experiment 1 tested the hypothesis that making shopping choices helps to restore personal control over one's environment, which can in turn help to alleviate residual sadness. I randomly assigned participants to choose which of several products they would hypothetically buy, or to judge which of those products would be most useful when traveling. Conceptually, my intention was to manipulate the extent to which participants could exercise personal autonomy during the task (since only a handful of the products are appropriate for travel, but any could be selected by hypothetical buyers), while holding constant distraction and (lack of) product acquisition across conditions.

Method

One hundred adults (52% female, mean age: 36) participated in an online study in exchange for a small payment. I recruited participants via Amazon Mechanical Turk (MTurk), a recruitment platform validated by Paolacci, Chandler, and Ipeirotis (2010). I initially collected a baseline measure of emotions. Specifically, participants indicated the extent to which they were currently experiencing seven different emotions (*amused, sad, indifferent, angry, depressed, happy, and rage*), by moving a slider along a 12mm line anchored by the labels “not at all” and

“very much.” Responses were scored on a 0-100 scale based on where participants rested the slider.

Participants then viewed a three-minute clip from *The Champ* that portrays the death of a boy’s mentor. Previous research has established that this clip induces sadness reliably (Gross & Levenson, 1995). I then took a second measure of emotions, identical to the baseline measure.

I then randomly assigned participants to a Choosing or Browsing condition, adapting a design by Mazar and Zhong (2010). Choosers were told to “imagine buying \$100 worth of products, by placing them in a shopping cart.” Choosers were then presented with 12 products (e.g., slippers, headphones; see Figure 1), each priced at \$25. Choosers were asked to select four products they would hypothetically like to buy, by clicking on four products and dragging them into a box labeled “Your Shopping Cart” (see Figure 2). Because Choosers were informed that the shopping was hypothetical, they had no expectation of obtaining these items.

Browsers were presented with the same 12 products and were asked to judge which four products would be most useful when traveling, by clicking on four products and dragging them into a box labeled “Travel Items” (Figure 2). There was no significant difference in the amount of time spent on the Choosing and Browsing tasks (60.7 seconds vs. 58.2 seconds; $t(98) < 1$). I then administered a third (and final) measure of emotions, identical to the baseline measure.

I conducted a pre-test on MTurk ($N = 42$, 43% female, mean age: 33) to confirm that the Choosing task was more likely to generate feelings of control than the Browsing task. Participants completed both the Choosing and Browsing tasks (which were labeled the Shopping Cart task and the Travel Items task, respectively, for participants). The order of tasks was counterbalanced across participants. I then asked, “In which task did you feel you

had more control over the items you selected?” Participants selected one of five options: Definitely the Travel Items task, Probably the Travel Items task, No difference between the Shopping Cart and Travel Items tasks, Probably the Shopping Cart task, Definitely the Shopping Cart task. The order of the response options (e.g., “Definitely the Travel Items task” on the far left or the far right) was also counterbalanced across participants. Seventy-nine percent of participants reported that they (probably or definitely) felt more control while Choosing, whereas only 2% reported that they (probably or definitely) felt more control while Browsing ($\chi^2(1) = 50.6, p < .0001$). Thus, while both tasks likely generate, to some extent, a sense of personal control over one’s environment, the Choosing task is a more effective way to increase a sense of personal control.

Results

To verify that the manipulation worked as intended, I examined whether the selection of products reflected greater autonomy among Choosers. Free choice among options imbues a sense of control and autonomy by allowing people to implement or reveal their individual preferences. Browsers were asked to select the products most appropriate for travel, but only a handful of the products were appropriate for travel. By contrast, Choosers were free to select any product. Choosers’ greater ability to control which products they select should be reflected by greater variance in their selections.

Figure 3 displays the proportion of participants selecting each product by condition. There was significantly greater variance in product selection among Choosers than Browsers ($F(1,22) = 4.47, p < .05$, Levene’s test). If Browsers could freely choose to the same extent as Choosers, there would be a similar degree of variance in selected products across conditions.

The unequal variance in product selections across conditions is consistent with the notion that Choosers experienced more control during the task.

I next tested my central hypothesis that choosing would be more likely than browsing to alleviate residual sadness. “Sad” and “depressed” ratings correlated highly ($r(98) > .65$ at each measurement), and were averaged to form a sadness index at each measurement. I created a residual sadness score by subtracting participants’ baseline index scores from their final index scores. This commonly-used method controls for broad individual differences in the tendency to experience and express emotions (cf. Kermer et al., 2006; Oveis et al., 2009; Rogosa & Willett, 1983; Wilson et al., 2000). Three outliers, with sadness change scores more than three standard deviations from the mean, were excluded from the analyses.

As expected, sadness change scores were significantly lower among Choosers than among Browsers (2.9, $SD = 8.6$ vs. 8.1, $SD = 14.5$; $t(95) = 2.13$, $p < .05$). In other words, making hypothetical buying choices was significantly more likely to return participants to their baseline level of sadness than was browsing.

Thus, Experiment 1 provides initial support for the hypothesis that making shopping choices helps to alleviate residual sadness. The results of the pre-test and the greater variance in product selections among Choosers suggest that the mechanism underlying this effect is a restoration of personal control.

Experiment 2

Experiment 2 extends my investigation in three ways. First, all participants made real (consequential) shopping decisions. Second, to isolate the role of restored control in retail

therapy, all participants actually obtained their preferred option, but I manipulated the extent to which they had apparent control over the process of obtaining that option. Third, to shed additional light on the process of personal control restoration, I examined whether the benefits of making shopping choices are specific to sadness or generalize to other negative emotions. In particular, I examined whether making shopping choices also helps to alleviate anger. Anger is generally as aversive as sadness, but is associated with a sense that other people (rather than situational forces) cause negative outcomes (Smith & Ellsworth, 1985). Whereas making shopping choices may help restore a sense of personal control over one's environment, those choices are unlikely to reduce the extent to which other people are viewed as unfairly or unduly influential. Thus, enhancing control over one's environment should have more impact on sadness than on anger.

Method

One hundred forty-seven undergraduates from a Midwestern university participated for course credit. Six participants who failed to follow instructions (e.g., texting during the experiment) were excluded. I initially collected a baseline measure of eight emotions (*sad*, *indifferent*, *angry*, *happy*, *depressed*, *enraged*, *amused*, and *neutral*) on 0-100 scales.

I then induced either sadness or anger. In the Sadness condition, participants viewed the same clip from *The Champ* used in Experiment 1. In the Anger condition, participants viewed a 2.5-minute clip from *Cry Freedom* that portrays young, unarmed protesters being gunned down by opposition forces. This clip reliably induces anger (Rottenberg, Ray & Gross, 2007).

Following the emotion induction, participants were told that they would be given a \$5 spending budget as part of a real shopping experience. They were told that they could buy one of three products (a set of post-it notes, a set of highlighters, or a set of ball point pens; see Figure 4), all offered in the lab for \$5 (approximately equal to their actual retail prices). They were also told that they could choose to buy none of these products, and trade in their spending budget for \$1 in real cash. I disincentivized not buying because walking away with the full \$5 budget would have been an easy choice for most participants (as they did not come to the lab intending to stock up on office supplies). This ensured that there was engagement in the shopping task and that choices were actively considered. The sadness versus anger induction did not significantly influence the proportion of participants choosing to buy one of the products (62% vs. 74%, $\chi^2(1) = 2.46, p > .10$). I pooled across the buyer versus non-buyer distinction in the analyses, since both actively made a choice.

I also embedded a manipulation of personal agency in the shopping task by adapting a procedure validated by Berman and Small (2012). Specifically, I told participants that, after they made their choice, the computer would randomly draw a number from 1 to 10. If the randomly generated number was even, they would simply obtain whatever they chose. However, if the randomly generated number was odd, the computer would ignore their choice and randomly make a selection on their behalf. Note that there were four possible choices in this paradigm – buying the post-it notes, buying the highlighters, buying the pens, or trading in the spending budget for \$1 in real cash. Regardless of participants' own choice, if the randomly generated number was odd, participants understood that the computer could randomly select any one of these four options on their behalf.

In the Personal Control condition, the randomly selected number was even, and participants were told that they would obtain what they chose. In the Situational Control condition, the randomly selected number was odd, and then the computer ostensibly made a random selection on their behalf (in fact, always selecting the option participants had selected for themselves). Thus, at the end of this task and before collecting the final measure of emotions, all participants knew that they would obtain the option they preferred. All that varied across the Personal Control versus Situational Control conditions was the amount of control participants believed they had over the process.

I then administered a second (and final) measure of emotions, identical to the baseline measure. Finally, participants either obtained their selected product or \$1 in cash.

Results

Sad and *depressed* ratings correlated highly ($r(139) > .42, p < .0001$ at each measurement), and were averaged to form a sadness index at each measurement. *Angry* and *enraged* ratings correlated highly ($r(139) > .56, p < .0001$ at each measurement), and were averaged to form an anger index at each measurement. I created residual sadness and anger scores by subtracting participants' baseline index scores from their final index scores.

Figure 5 displays the focal residual emotion in each condition (i.e., residual sadness in the Sadness conditions and residual anger in the Anger conditions). As predicted, residual sadness scores in the Sadness conditions were significantly higher in the Situational Control condition than in the Personal Control condition ($M = 3.73, SD = 10.78$ vs. $M = -2.28, SD = 11.79; t(69) = 2.24, p < .05$). However, residual anger scores in the Anger conditions did not differ significantly

between the Situational Control and Personal Control conditions ($M = 14.75$, $SD = 25.69$ vs. $M = 14.17$, $SD = 30.91$; $t(68) = .09$, $p = .93$).¹

Experiment 2 suggests that real shopping can help to alleviate residual sadness, unless that shopping experience further reduces personal control over situational forces. By contrast, restoring personal control is as ineffective as further jeopardizing personal control at alleviating residual anger. Anger is naturally associated with a sense that other people are likely to cause negative outcomes, and thus restoring control over ambient environmental forces does not appear to address the key control deficit associated with anger.

Experiment 3

Experiment 3 extends my investigation by focusing more closely on the underlying mechanism of personal control restoration. Specifically, I examine whether a direct manipulation of control over one's environment (outside of a shopping context) is more likely to influence sadness than anger. I hypothesized that recalling a situation where a person had high control over their environment (i.e., high situational control) would help to alleviate sadness. By contrast, because anger is already associated with a low sense of situational control (Smith and Ellsworth, 1985), I anticipated that recalling an instance of control over one's environment would not help to alleviate anger.

¹ It is worth noting that the Situational Control versus Personal Control manipulation did not operate by influencing happiness, despite the fact that residual happiness (final *happy* rating minus baseline *happy* rating) was significantly correlated with both residual sadness ($r(139) = -.48$, $p < .0001$) and residual anger ($r(139) = -.28$, $p < .001$), pooling across conditions. Residual happiness in the Sadness conditions did not differ significantly between the Situational Control and Personal Control conditions ($M = 7.02$, $SD = 28.22$ vs. $M = 4.61$, $SD = 25.49$; $t(69) = .38$, $p = .71$). Likewise, residual happiness in the Anger conditions did not differ significantly between the Situational Control and Personal Control conditions ($M = 7.83$, $SD = 33.38$ vs. $M = 17.15$, $SD = 29.96$; $t(68) = 1.23$, $p = .22$).

Method

Three hundred and one undergraduate students from a Southern University completed this study for course credit (50.8% female, mean age = 19.5). I initially collected a baseline measure of affect. I asked participants to indicate the extent to which they were currently experiencing nine emotions (*happy, angry, sad, indifferent, enraged, depressed, amused, anxious, and neutral*) on 0-100 scales.

I then induced sadness, anger, or neutral emotion. I included a Neutral condition to examine whether the subsequent control manipulation (discussed below) generated any emotional costs or benefits even in the absence of a negative emotion induction. In the Sadness condition, participants viewed the clip from *The Champ* used in previous experiments. In the Anger condition, participants viewed a four-minute clip from *My Bodyguard* that portrays a bullying incident. This clip reliably induces anger (Rottenberg, Ray & Gross, 2007). In the Neutral condition, participants viewed a 2.5-minute clip from National Geographic about coral reefs (cf. Lerner, Small & Loewenstein, 2004).

After the emotional induction, I manipulated whether participants recalled an instance of low or high situational control. Specifically, I asked participants to describe a situation in which they experienced control over an important situation (Personal Control condition) or experienced no control over an important situation (Situational Control condition). I carefully worded the recall prompts to prevent participants from considering instances in which they had control over other people, or were controlled by other people (see Appendix). I then administered a second (and final) measure of emotions, identical to the baseline measure.

Results

Sad and *depressed* ratings correlated highly ($r(299) > .67, p < .0001$ at each measurement), and were averaged to form a sadness index at each measurement. *Angry* and *enraged* ratings correlated highly ($r(299) > .73, p < .0001$ at each measurement), and were averaged to form an anger index at each measurement. I created residual sadness and anger scores by subtracting participants' baseline index scores from their final index scores.

Figure 6 displays the focal residual emotion in the Sadness and Anger conditions. As expected, residual sadness scores in the Sadness conditions were significantly larger in the Situational Control condition than in the Personal Control condition ($M = 12.1, SD = 14.8$ vs. $M = 2.89, SD = 16.3; t(99) = 2.97, p < .01$). However, residual anger scores in the Anger conditions did not differ significantly between the Situational Control and Personal Control conditions ($M = 4.6, SD = 14.8$ vs. $M = 4.7, SD = 17.7; t(97) = .03, p = .97$).

In the Neutral conditions, both residual sadness and residual anger were slightly higher in the Situational Control condition than in the Personal Control condition, though neither difference was statistically significant (residual sadness: $M = 3.7, SD = 15.5$ vs. $M = -0.3, SD = 7.3; t(99) = 1.74, p = .085$; residual anger: $M = 3.6, SD = 11.0$ vs. $M = 0.2, SD = 6.1; t(99) = 1.97, p = .052$). Residual scores for all the other individual emotions measured (*happy, indifferent, amused, anxious, neutral*) also did not differ significantly across the Situational Control and Personal Control conditions (all $ps > .05$). Thus, the Neutral condition offers marginal evidence suggesting that personal control can help to mitigate mild levels of naturally occurring sadness and anger. However, Figure 6 suggests that when experiences of sadness and anger are more focal and acute, personal control uniquely helps to alleviate sadness.

Thus, consistent with my theoretical framework (and Experiment 2), Experiment 3 suggests that the acute experience of sadness (which is naturally associated with a sense that situational forces control outcomes) is smaller when personal control over one's environment is restored than when it is further jeopardized. By contrast, the acute experience of anger (which is naturally associated with a sense that other people cause negative outcomes) is unaffected by differences in control over one's environment. To the extent that making shopping choices enhances feelings of personal control over one's environment, these results suggest that shopping is likely to alleviate sadness but not necessarily anger.

General Discussion

Previous research suggests that distress can increase willingness to spend (e.g., Atalay & Meloy, 2011; Lerner, Small & Loewenstein, 2004), but the question of whether “retail therapy” actually helps to reduce distress has only been addressed in correlational designs, utilizing surveys and interviews of people who chose to shop when feeling bad. I addressed this gap by experimentally examining whether making shopping choices could help to reduce residual sadness.

Because sadness increases the tendency to view events as caused by external forces, and because such appraisals can maintain sadness, I predicted that restoring personal control would alleviate sadness. Given that choice is inherent to shopping, and can enhance feelings of personal control, I reasoned that choosing to buy would alleviate sadness. Three experiments reported provided support for these hypotheses. I observed these benefits regardless of whether the shopping was hypothetical or real. I also documented support for the underlying mechanism of personal control restoration. I found that the effects of manipulating personal control over one's

environment did not generalize to anger. Anger is associated with a sense that other people are likely to cause negative outcomes, and changes in personal control over situational forces cannot necessarily reduce the extent to which other people are viewed as unfairly or unduly influential.

The present work contributes to research on emotion and decision-making. Most work in this area has focused on how emotion influences decision-making and consumption (e.g., Cryder et al., 2008; Garg, Inman & Mittal, 2005, Garg & Lerner, 2013; Garg, Wansink & Inman, 2007; Lerner et al., 2004). By contrast, this chapter joins a growing stream of research examining how decision-making influences the experience of specific emotions (Berman & Small, 2012; Gal & Liu, 2011).

The present work also contributes to appraisal theories of emotion. Prior work had demonstrated that the cognitive appraisals that accompany an emotion can be deactivated by addressing the source of emotion (e.g., the cognitive effects of anger are extinguished when the perpetrator that caused the anger is punished; Goldberg, Lerner & Tetlock, 1999). This chapter suggests that counteracting a particular cognitive appraisal (here, restoring personal control after it has been lost) may help to extinguish the emotion that elicited the appraisal, consistent with the “recursive” nature of emotions and their associated appraisals (Han, Lerner & Keltner, 2007).

Limitations and Future Directions

An ideal test of the impact of restored personal control on the experience of sadness and anger would require inductions that initially produced similarly intense experiences of sadness

and anger (before the focal control manipulation). Otherwise, differences in initial emotional intensity could potentially explain differences in responsiveness to the focal control manipulation. Unfortunately, pooling across the Personal and Situational Control conditions in Experiment 2, residual anger in the Anger conditions was significantly greater than residual sadness in the Sadness conditions (14.45 vs. 0.68, $p < .01$). By contrast, residual anger in the Anger conditions was slightly lower than residual sadness in the Sadness conditions in Experiment 3 (4.67 vs. 7.53, $p = .21$). Despite these differences (within and across experiments), I always found that residual sadness was sensitive to the Personal versus Situational control manipulations, but residual anger never was. Thus, these results do not appear to be an artifact of intensity differences across induced emotions. (An intensity account would suggest that only the most intense or least intense emotion would be influenced by the control manipulations.)

Future research on retail therapy could examine shopping aspects other than choice that might address the key symptom (sadness) but not its cause (loss of personal control). While I carefully controlled for many features associated with shopping so that I could isolate restoration of control as a key feature of retail therapy, I believe that residual sadness may also be reduced in ways that do not directly address the control deficit. For example, social interaction may increase positive emotions and perhaps mitigate sadness (O'Guinn & Faber, 1989). The distraction provided by shopping is another possibility. Neither of these shopping aspects replace the lost control intrinsic to sadness, but both may impact a consumer's overall emotional state.

Future research could also further explore the foundational link between control and sadness. I found that restoring personal control following exposure to sad stimuli helped to reduce residual sadness. Future work could examine whether imbuing people with high personal control helps immunize them from the effects of sad stimuli encountered later.

Conclusion

Retail therapy is often lamented as wasteful and irresponsible. When I asked 100 adults (52% female, mean age: 35) for the first word that came to mind when hearing “retail therapy,” they were significantly more likely to provide a clear negative response (e.g., *nonsense*, *debt*) than to provide a positive response (e.g., *fun*, *enjoyment*) (19% vs. 8%; $\chi^2(1) = 5.18, p < .05$; other responses were neutral, such as *shopping*). But no prior research had experimentally examined whether and why shopping when sad can actually help to reduce residual sadness. This work suggests that making shopping choices can help to restore a sense of personal control over one’s environment and reduce residual sadness. Whether the increased control afforded by shopping results in a loss of control later (e.g., due to increased debt), and thus counteracts the temporary benefits of retail therapy, remains an important open question.

CHAPTER III

Sadness Reduces Decisiveness

“There is no more miserable human being than one in whom nothing is habitual but indecision”

– William James

A common goal for a decision maker is to carefully consider options and optimize decisions. Yet, although people might wish to decide without being influenced by transient emotional states, choice processes and judgments do not occur in an emotional vacuum (Bodenhausen, Gabriel & Lineberger, 2000). Nonetheless, the impact of emotions on rationality is complex. It is certainly too simplistic to conclude that the more emotional a decision maker is, the less rational he or she is. Specific emotions’ characteristics and contexts in which those emotions are experienced can result in a broad range of influences on judgment and decision-making, including the ability to reach a decision efficiently - that is, to be decisive.

The aim of this chapter is to investigate the influence of sadness on decisiveness. Previous research has documented several behavioral effects related to sadness, some of which improve decision-making, and some of which impair decision-making. I contribute to this body of work by explicitly examining the relationship between sadness and decisiveness, an as-yet unexplored aspect of sadness. I propose that the uncertainty appraisals that accompany sadness can impair decision-making by increasing indecisiveness. I demonstrate that sadness and

indecisiveness are related constructs, and that incidental sadness can lead to deviations from normative behavior due to increased indecisiveness.

Emotions and Rationality

When attempting to maximize utility, humans seek to find maximum satisfaction in a world of scarce resources. Emotionality is closely linked to satisfaction because people need to maintain a pleasant emotional state in order to feel fully satisfied. Therefore, emotionality should be central to determining utility, but the role of affect in decision-making has been neglected in the past (by economists, at least) due to the difficulty of translating emotions to utility metrics (Elster, 1996). A once-prominent view was that emotions are intrinsically unstable and unpredictable, and therefore not conducive to objective measurement (Zeelenberg et al., 2008).

In addition to measurement issues, the effects of emotions on rationality are not straightforward. While some findings suggest that discrete emotions aid decision-making (e.g., mild sadness increases systematic processing, Schwarz, Bless & Bohner, 1991; Bodenhausen, Sheppard & Kramer, 1994), others suggest that discrete emotions are detrimental (e.g., sadness increases the consumption of junk food and the propensity to spend, Garg & Lerner, 2013; Lerner, Small & Loewenstein, 2004).

Therefore, while emotions may be pervasive in all phases of decision-making, whether they help or hurt remains unclear (Vohs, Baumeister & Loewenstein, 2007). They may contribute to optimizing decisions (Zeelenberg et al., 2008), in accordance with an evolutionary view of emotions. Indeed, people with brain lesions interfering with emotional signals (also

known as “somatic markers”) have been shown to make worse decisions than others (Bechara et al., 1997; Bechara, Damasio & Damasio, 2000; Bechara, 2004).

It seems that the ability to process emotional signals is fundamental to effective decision-making. However, one important point in this debate is that optimal decision-making is not only a matter of the decision outcome, but also reaching a decision efficiently. Indecisive behavior is detrimental to the decision-making process because it can generate harmful delays and/or suboptimal outcomes (e.g., letting a limited-time offer expire). Yet the link between discrete emotions like sadness and indecisive behavior has not yet been explored.

Indecisiveness

Indecisiveness (or the extent to which an individual experiences choice difficulty that consequently delays decision-making; Patalano & Wengrovitz, 2007) can be both a trait and a state characteristic. Frost and Shows (1993) developed a scale to measure individual differences in indecisiveness, and found that the trait was related to, but distinct from, perfectionism and general psychopathology. Indecisiveness also predicts a number of undesirable behaviors, such as compulsive hoarding, procrastination, and overall delays in decision-making (Frost & Shows, 1993). Indecisive people take more time to reach a decision and tend to gather more information (including more information on the ultimately chosen option; Rassin et al., 2008) before being able to make a decision with confidence than do decisive people (Rassin et al., 2007).

Nonetheless, in other contexts the effects of indecisiveness on decision-making go beyond innocuous increases in search and time costs. Indecisive individuals also tend to delay choice even when there is a risk associated with delaying. For example, decisive individuals

made course selections in fewer days than indecisive individuals when risk was introduced (by means of a course becoming unavailable due to full enrollment; Patalano & Wengrovitz, 2007).

Indecisiveness can also be expressed more broadly in terms of decision avoidance - the tendency to avoid making a choice by means of postponing it or by seeking alternatives that involve no change or action (Anderson, 2003). Common phenomena such as the status quo bias, omission bias, choice deferral, and action inertia could all be interpreted as manifestations of indecisiveness. Given that regrettable actions are judged more negatively than inactions (Anderson, 2003; Spranca, Minsk & Baron, 1991), people may avoid making a decision to inhibit the potential regret associated with comparing where they end up to the original status quo (Tykocinski, Pittman & Turtle, 1995). In this case, the discomfort experienced by decision makers when making choices is usually caused by anticipated regret (Baron & Ritov, 1994), which can increase people's likelihood of avoiding the decision altogether. On the other hand, when people are forced to make a final choice in the presence of difficult tradeoffs, they might select status quo options in order to reduce the experience of negative affect (Luce, Bettman & Payne, 1997).

Difficulty in choosing comes not only from difficult tradeoffs, but also from the number of alternatives that must be considered. In fact, avoiding decision-making by spending more time in search of better alternatives, choosing not to purchase from a choice set, or avoiding the responsibility for deciding are all exacerbated when more options are available (Tversky & Shafir, 1992). People feel the need to have a clear justification for a choice (Shafir, Simonson & Tversky, 1992), and that gets more difficult as the choice set grows.

However, choice deferral is not increased only in contexts that present difficult tradeoffs or choice overload. People are also more likely to defer choice when they are uncertain of their

preferences or when they have balanced evaluation of the available options in a set (i.e., when more than one option is perceived to be the best alternative, Dhar, 1997). In a choice set where both options were equally attractive versus one option clearly dominating, Dhar (1997, Study 3) found that people deferred choice more often when the choice was difficult. Most interestingly, the choice deferrers from this study provided longer protocols regarding their decision process (Dhar, 1997), consistent with prior findings on indecisiveness as an individual difference. Together, these two explanations of choice deferral - tradeoffs and uncertainty over preferences - can both be categorized as selection difficulty (Anderson, 2003).

Indecisiveness is not only costly to the decision maker, who might have higher search and time costs, but it can also be costly for retailers, since purchase delays can increase stocking costs or even turn into total revenue loss if the consumer permanently defers the purchase. Previous research has documented that consumers' difficulty in selecting a single alternative is one of the most important causes of delaying purchases (Greenleaf & Lehmann, 1995).

Sadness and Indecisiveness

One way that emotion may be intertwined with indecisiveness is through sadness. Emotions vary in the appraisal tendencies they bring to a situation, and sadness is an aversive emotional state characterized by a strong perception of lack of personal control (Smith & Ellsworth, 1985). In other words, when sad, people do not feel that they are in control of the situation. In addition, sadness is closely connected to a sense of uncertainty, which decreases systematic processing. Indeed, when different levels of certainty are manipulated within sad events, uncertainty increases systematic processing while certainty decreased it (Tiedens & Linton, 2001). Furthermore, some prior work suggests that uncertainty regarding preferences

between several options in a choice set (measured by the amount of information a person gathered before making a decision) and indecisiveness (measured as an individual difference) are related (Rassin et al., 2008), suggesting that sadness will increase indecisiveness, but only when coupled with uncertainty.

Although no previous work has directly linked sadness with increased indecisiveness, clinical work in psychology has extensively documented that chronically depressed individuals have reduced willingness to make decisions. Depression is characterized by apathy, a state of indifference and lack of interest (van Reekum, Stuss & Ostrander, 2005). Relatedly, I anticipate that the lack of perceived certainty that accompany everyday sadness may reduce people's motivation to engage in decision-making.

It is important to highlight, though, that if sadness increases indecisiveness, this does not mean that sadness necessarily impairs decision-making. Feeling indecisive when experiencing distress can be an adaptive response as well. Because strong states of distress can prevent people from functioning normally (e.g., when experiencing grief, people frequently report feeling disoriented; see Gentry et al., 1994), grief counselors frequently advise patients not to make life-changing decisions for at least one year after losing a loved one.

Overall, although previous research has shown that sadness might increase impatience (Lerner, Li & Weber, 2013), I propose that sadness may reduce decisiveness. Further, I argue that previous research has overlooked the impact of incidental sadness (i.e., unrelated to the decision at hand) on indecisiveness. I intend to demonstrate that sadness and indecisiveness are related concepts, and specifically that experienced incidental sadness decreases decisiveness. I do so by (i) examining sadness and indecisiveness as correlated individual differences, and (ii) by directly manipulating sadness and analyzing its effect on indecisiveness.

Pilot Study

As an initial exploration into the relationship between sadness and indecisiveness, I conducted a pilot study to examine whether self-reported sadness predicts responses to an individual difference measure of indecisiveness (Frost & Shows, 1993). To the extent that current feelings of sadness are a proxy for more enduring feelings of sadness, I would expect to find a positive relationship between current feelings of sadness and trait-level indecisiveness.

Method

One hundred and forty two participants (42.2% female, mean age = 30.4) from Amazon Mechanical Turk completed the survey in exchange for a small payment (this recruitment platform has been validated by Paolacci, Chandler, and Ipeirotis, 2010). Participants rated their current emotions from a list containing eight emotional words (*sad, indifferent, angry, happy, enraged, neutral, depressed, and amused*). This rating was performed by moving a slider along a 12mm line anchored by the labels “not at all” and “very much.” Each response was recorded by the computer on a 0-100 scale not shown on-screen. Participants also completed a trait measure of indecisiveness. I counterbalanced whether participants rated their emotions or completed the indecisiveness scale first. The indecisiveness scale (Frost & Shows, 1993) consists of fifteen items ($\alpha = .91$), such as “I try to put off making decisions” and “When ordering from a menu, I usually find it difficult to decide what to get.”

Results

Each emotion was measured by two related words, all of which correlated highly (*sad* and *depressed*: $r(140) = .80$; *angry* and *enraged*: $r(140) = .62$; *happy* and *amused*: $r(140) = .51$; *indifferent* and *neutral*: $r(140) = .65$). As predicted, sadness and indecisiveness correlated positively and significantly ($r(140) = .34, p < .001$). The order in which the emotion and indecisiveness measures were administered did not influence this correlation (both r s $> .30$, both p s $< .01$).

Although I was particularly interested in sadness, I also found that other emotions correlated significantly with indecisiveness as well (indifference: $r(140) = .20, p = .016$; happiness: $r(140) = -.25, p = .003$), though anger did not ($r(140) = .13, p > .10$). Given that there were other emotion scores that correlated significantly with indecisiveness, I ran a multiple regression to examine whether sadness is a stronger predictor of indecisiveness than the other measured emotions. Specifically, I regressed participants' self-assessed indecisiveness on their ratings of sadness, happiness, anger and indifference. Of these four ratings, only sadness and indifference significantly predicted indecisiveness scores (sadness: $\beta = .192, t(135) = 3.43, p = .001$; indifference: $\beta = .073, t(135) = 2.13, p = .035$). The sadness coefficient was marginally larger than the indifference coefficient ($\beta = .119, t(135) = 1.79, p = .075$). The marginal relationship between indecisiveness and indifference was somewhat surprising, though a number of explanations could be offered (e.g., indifference between choice options can lead to indecisiveness, or indifference could reflect the numbness that accompanies feelings of depression).

Thus, as predicted, momentary ratings of sadness predict trait-level indecisiveness. The subsequent studies experimentally manipulate emotional states to assess causality.

Study 1

One way that people can express decision avoidance is by circumventing the responsibility for deciding (Anderson, 2003). Hence, in Study 1 I examine whether experimentally induced incidental sadness increases indecision in the context of gift giving (e.g., whether gift-givers prefer to buy a specific versus a generic gift card). If sadness increases indecisiveness, sad participants will be more likely to defer the choice of the gift to the recipient.

Method

One hundred forty one participants were recruited from Amazon Mechanical Turk (44.7% female, mean age = 33.9). I induced either sadness or a neutral emotional state with video clips validated in previous research (Gross & Levenson, 1995, Lerner et al., 2004). Participants in the Sadness condition viewed a three-minute clip from *The Champ* that portrays the death of a boy's father. Participants in the Neutral condition watched a video clip from a National Geographic documentary on coral reefs.

After the emotion manipulation, all participants were told to imagine that they were going to a birthday party, and that they had decided to give their friend a gift card. They were told their friend and their friend's spouse love dining out, so the participant had decided to give them a restaurant gift certificate. I also asked them to imagine that they found three interesting Groupon deals, and all three would cost them \$35. The first option was a gift certificate with face value of \$60 for an Italian restaurant. The second option was a gift certificate with face value of \$60 for a French restaurant. The third option only had a face value of \$50, but allowed the recipient to use it at either the Italian or French restaurant. I anticipated that sad participants would be more

likely to select the third option, which forces their friend to make the restaurant decision, even when doing so required sacrificing \$10 in face value.

Results

I collapsed the first and second alternatives (French or Italian restaurant with a \$60 face value), since both these options are equally specific and choosing either of those requires the same level of decisiveness. I examined whether Sadness condition participants were more likely to choose the more flexible (but lower value) third option than Neutral condition participants. As predicted, Sadness participants were more likely to defer the choice of restaurant to their friend (72%) than Neutral participants (44%; $\chi^2(1) = 11.46, p = .001$). Sadness increased indecisiveness when choosing for others, even when there is a cost (\$10) associated with it.

Study 2A

Study 2A extends the findings of Study 1 in two ways. First, Study 2A sheds light on the hypothesized process (lack of certainty present when one experiences sadness) by manipulating anger, an emotion as aversive as sadness, but not high in uncertainty. Second, Study 2A examines if the effect holds when people are making choices that are consequential to themselves, instead of choices consequential to others.

I also extend the results of Study 1 by examining the influence of sadness on indecisiveness in a personal finance domain. Specifically, I gave participants a debt repayment scenario where they could allocate all of their money to one of two accounts, or they could act more indecisively and split the payment between accounts. One account has a smaller APR, but

can be paid in full with the money available for debt payment. The other account has a larger APR, but also a larger balance, which cannot be paid with the amount available to the participant. Allocating all the money to the account with the largest interest rate is consistent with the goal of reducing debt in the long run (the normative course of action), while closing the smallest interest rate account is consistent with the goal of reducing the number of debt accounts (Amar et al., 2011).

My theoretical framework did not lead to a prediction as to whether sadness would increase or decrease financially optimal repayment behavior. Essentially, among decisive participants, it is unclear whether sadness would encourage or discourage attention to interest rates. However, my account does suggest that sadness should increase the tendency to split one's available money across cards (arguably, a proxy for indecisiveness). That is, I hypothesized that sadness would increase this type of indecisive behavior since sadness is characterized by appraisals of uncertainty, but that anger would not since it is not associated with an uncertainty appraisal.

Method

I first conducted a pre-test with same population used in the main study (Amazon MTurk) to test whether this population perceived splitting the payment between accounts as reflecting indecisive behavior. One hundred participants completed the pre-test for a small payment (29% female, mean age = 32.5). They were asked to judge a target based on his/her decision in a debt repayment scenario (Amar et al., 2011). Participants were asked to imagine that the target held two debts: a Mastercard with a \$100 balance and 10% APR and a Visa with a \$1,000 balance and 15% APR. Participants were also asked to imagine that the target received an unexpected

\$100 windfall from the government, which he/she decided to use entirely for debt repayment. Participants were randomly assigned to one of three conditions: the target allocated (i) \$100 to Mastercard and \$0 to Visa (close smallest account), (ii) \$50 to Mastercard and \$50 to Visa (split payments), or (iii) \$0 to Mastercard and \$100 to Visa (normative). Based on the observed repayment behavior, participants rated the extent to which they thought the target was feeling indecisive, uncertain, nervous, and risk-averse. Each assessment was made on a seven-point rating scale, ranging from “not at all” (1) to “very much” (7). Participants were also asked to rate whether the repayment decision was rational, made the target feel good, and whether that was a decision they would have made themselves. The mean target rating per attribute and target are reported in Table 1. I ran a repeated measures ANOVA to test whether participants perceived the three targets differently. Pairwise comparisons show that the target who split the funds between the cards was perceived as being more indecisive, uncertain, and nervous. Importantly, this target was not perceived to be risk-averse, therefore splitting was not perceived as a strategy to reduce risk (which would conflict with the proposed explanation that people split due to uncertainty). In addition, participants stated that splitting was not a decision they would have made, and also did not believe that splitting made targets feel good. Therefore, I conclude from this pre-test that participants perceived splitting as reflecting indecisiveness and uncertainty.

Two hundred and four participants recruited through Amazon Mechanical Turk completed the main experiment (37% female, mean age = 32). I first induced sadness, anger, or neutral emotional states with video clips validated in previous research (Gross & Levenson, 1995, Lerner et al., 2004, Rottenberg, Ray & Gross et al., 2007). I used the same videos from Study 1 to manipulate sad and neutral states (*The Champ* and *Coral Reefs*, respectively). Participants in the Anger condition viewed a four-minute clip from *My Bodyguard* that portrays a

bullying incident. All participants were then presented with the debt repayment scenario from the pre-test. Participants were asked to indicate how much of their \$100 windfall they would repay to each card. The decision is difficult, because participants must choose between completely repaying the small balance with a small APR (which is tempting) and chipping away at the high balance with a high APR (which is financially optimal).

Results

I computed an indecisiveness score, which captured the extent to which participants split their windfall evenly between the two debts. Specifically, indecisiveness scores range from 0 to 50 and are equal to $\min(\text{Mastercard payment}, \text{Visa payment})$. For example, when participants equally split their windfall between debts, their indecisiveness score is $\min(50,50) = 50$. When participants allocate their entire windfall to one debt (reflecting decisiveness), their indecisiveness score is $\min(0,100) = 0$. As predicted, indecisiveness scores were significantly greater in the Sadness condition ($M = 9.43, SD = 16.41$) than in the Anger condition ($M = 4.83, SD = 11.07; t(134) = 1.99, p < .05$) and the Neutral condition ($M = 4.80, SD = 12.91; t(129) = 1.94, p = .054$). Indecisiveness scores did not differ among Anger and Neutral conditions respondents ($p = .99$).

Study 2A demonstrates that experimentally induced sadness reduces decisiveness, while anger does not (relative to a Neutral control condition). These results suggest that not all negative emotions reduce decisiveness, and that the appraisal of uncertainty that accompanies sadness is a potentially significant driver of the effect of sadness on decisiveness.

Study 2B

Study 2B conceptually replicates Study 2A by testing whether naturally-occurring, rather than experimentally manipulated, emotions can also influence decisiveness. Further, this study expands the scope of the emotions being examined. Other emotions besides sadness have appraisals of uncertainty, but are not negatively valenced. To determine whether indecisive behavior occurs when any uncertainty is present or whether the experienced discomfort of a negative emotion is a necessary component, I also measured positive but uncertain emotions (e.g., hope). Thus, in this study I test whether several naturally-occurring emotions varying in terms of valence and uncertainty can influence choices in the debt management domain.

Method

One hundred and fourteen participants (55.3% female, mean age = 36.6) were recruited through Amazon Mechanical Turk. Although I did not anticipate any order effects, participants were randomly assigned to report their current emotions either before or after the debt repayment task. I asked participants to report the extent they were currently experiencing several emotions. Each target emotion was measured by two related words, which were averaged into composite scores (*sad*, *indifferent*, *hopeful*, *angry*, *proud*, *happy*, *enraged*, *optimistic*, *neutral*, *depressed*, *dignified* and *amused*).

Results

All emotional word pairs correlated positively and significantly and were averaged into composite scores (*sad* and *depressed*: $r(112) = .65$; *angry* and *enraged*: $r(112) = .77$; *happy* and

amused: $r(112) = .39$; *hopeful* and *optimistic*: $r(112) = .65$; *proud* and *dignified*: $r(112) = .61$; *indifference* and *neutral*: $r(112) = .45$, all p 's $< .001$).

I computed indecisiveness scores as in Study 2A. As predicted, sadness scores correlated positively and significantly with indecisiveness scores ($r(112) = .33$, $p < .001$). In other words, the more sad participants were, the more likely they were to split their available funds across debts. The order in which the emotion scales and debt repayment task were administered did not influence this correlation (both r s $> .30$, both p s $< .025$).

Indecisiveness did not correlate significantly with pride, hope, indifference or happiness (all p 's $> .10$), but it correlated significantly with anger ($r(112) = .20$, $p < .05$). Thus, I ran a multiple regression predicting indecisiveness with both sadness and anger as predictors. As predicted in my theorizing, only the sadness coefficient was significant (sadness: $\beta = .211$, $t(100) = 2.86$, $p = .005$; anger: $t(100) < 1$).

The results suggest that indecisiveness is more likely when people are sad, a negative emotion associated with appraisals of uncertainty. Indecisive behavior does not seem to be significantly amplified by the experience of all negative emotions (such as anger) or positive emotions with high appraisals of uncertainty (such as hope). Instead, it seems that the combination of negative valence and high uncertainty is particularly detrimental to decisiveness.

General Discussion

Prior work has shown that sadness can either be detrimental or beneficial to decision-making, depending on the context and type of decision. Although previous research has documented directional effects of sadness on decision-making (e.g., increasing impatience;

Lerner, Li & Weber, 2013), I propose and find across multiple studies that sadness can actually reduce the propensity to be decisive due primarily to sadness' appraisals of uncertainty.

Based on these findings, I conclude that the appraisals of uncertainty associated with sadness drive people to be more indecisive, both when making decisions for themselves and when choosing for others. One potential criticism of this account could be that, in Study 2A and 2B, sad individuals might split repayment across both accounts because that offers them some therapeutic benefit (e.g., making progress toward two goals). The pre-test I conducted to investigate how observers perceive people who are indecisive by means of splitting the payment suggests otherwise: participants do not believe that splitting is the decision that makes the target feel better (see Table 1). Therefore, participants' indecisive behavior does not seem to be driven by any sort of strategy related to mood repair.

In addition, the fact that sadness can increase indecisiveness is ironic given the finding that actively choosing to buy a product reduces sadness (Chapter II). If sadness also increases indecisiveness, maybe sadness only increases browsing behavior and propensity to spend when people make purchase decisions (Lerner et al., 2004), but does not actually increase people's probability to make a purchase. Therefore, finalizing a decision between several options, which can alleviate sadness, might actually be impaired by feelings of sadness – potentially leading to a vicious Catch-22 between sadness and indecisiveness.

Limitations and Future Directions

I show that sadness increases indecisiveness in the context of financial decision-making regarding one's current debts and in the context of selecting gifts. I plan to extend this work by

examining whether sadness increases the propensity to engage in more search costs to acquire a product. I expect that sad participants will be willing to drive longer distances to reach a store with a large assortment (compared to a nearby store) than participants in a neutral state (cf. Inesi et al., 2011, experiment 1B). Ironically, having more choice should increase choice difficulty for sad/indecisive participants, but I expect that because they are uncertain about their decision, they will have the tendency to prefer larger assortments, further exacerbating the Catch-22.

To further establish evidence for this proposed process explanation regarding uncertainty, I aim to show in future studies that sad participants focus more on information regarding chosen options (i.e., they display tunnel vision in the process; cf. Rassin et al., 2008). When people have uncertainty regarding superiority of their ultimately chosen option, collecting more information on the item they chose helps to resolve this uncertainty and minimize post-choice regret. I will test this idea in the context of a choice between products described by several attributes, where people need to engage in some effort to get the relevant descriptions.

Another way to directly test the uncertainty hypothesis is to manipulate levels of certainty within a sad state (Tiedens & Linton, 2001). If the uncertainty that accompanies sadness is what causes indecisiveness, “high certainty” sadness should produce less indecisiveness than “low certainty” sadness. Although the exact manipulation of certainty levels within sadness was not available from these authors, I made several attempts to produce a similar design. Unfortunately, those designs did not produce the predicted pattern of results, and the manipulation checks (e.g., for experienced uncertainty) also failed to produce differences between conditions. I plan to attempt manipulations of certainty outside of the emotional manipulation itself, in order to test this process. In addition, including thought protocols (i.e., asking participants to describe what

they were thinking while making the decision) in future studies might elucidate the mechanism behind this effect as well.

Other emotions, like hope and anxiety, are also characterized by appraisals of uncertainty. Even though I did not find feelings of hope to be associated with indecisiveness, I plan to directly test whether this effect holds for any emotions with uncertainty appraisals. I believe that uncertainty coupled with distress can make one feel like he or she lacks the resources to make a good decision. Another negative emotion that also has high appraisals of uncertainty is anxiety. I obtained a video that elicits anxiety (Brooks & Schweitzer, 2011) and have run studies similar to study 1 and 2A with an added anxiety condition. Although some results were in the predicted direction (i.e., sadness and anxiety increased indecisiveness), they did not reach statistical significance. However, sadness and anxiety do differ in other critical appraisals (e.g., arousal), so I intend to explore these differences further.

Another limitation of the current findings is that the indecisive behavior I observed can be interpreted as people seeking more variety (i.e., paying off more debt accounts, selecting the gift card option that can be used in more restaurants). In order to test whether sadness increases variety seeking, I induced either sad or neutral states and gave participants the choice between three of the same snack-size chocolate bars, or three different kinds (Snickers, KitKat and Crunch). Regrettably, most of the variance in the chocolate bar selection was explained by participants' previous ratings of their liking for the various chocolate bars. I plan to conduct a new test where participants can choose among chocolates that they are not familiar with, creating a choice context where the uncertainty from sadness is more likely to be of influence, before drawing firm conclusions.

Alternatively, instead of an increased taste for variety, sad people may simply have an enhanced desire for multiple units (e.g., two small candies rather than one large candy). Multiple units may appeal to sad people for a number of reasons (e.g., being able to share with others, or spreading out therapeutic consumption over time). Future research should also investigate this possibility.

Conclusion

Indecisiveness can present substantial costs for decision-makers, in the form of increased time and search costs, and to marketers, in the form of financial losses with temporary or even permanent purchase deferral. It is important to highlight, though, that indecisiveness does not necessarily always yield worse outcomes to all parties in a transaction. For example, in the context of negotiations with a motivated counterpart, being indecisive may actually encourage this counterpart to reveal his or her reservation price. On the other hand, this effect might be conditional on single and well-defined offers (e.g., negotiating to buy a house). If a sad and indecisive person is choosing drink options for a party, indecisive displays might encourage the salesperson to offer more options (e.g., having white and red wine, beer, and spirits available), instead of fewer options (e.g., having only one or two drinks available). Given that people are less likely to defer making a choice when they can select more than one option (Dhar, 1997), framing the decision as not requiring compromises might actually make sad and indecisive individuals prey to savvy salespeople.

CHAPTER IV

Discussion

Although I presented the contributions of this dissertation in separate chapters, some overarching themes warrant a brief discussion. First, I demonstrated that actively making choices can help to alleviate sadness, due to a restored sense of personal control over one's environment provided by making those autonomous choices. This work is the first to experimentally demonstrate that making purchase decisions can alleviate sadness, thus showing that under certain circumstances, retail therapy works.

It is important, though, to understand that these results were found under specific contexts, and generalization beyond the scope of this research must be done carefully. I show that retail therapy works in reducing experienced sadness by means of restoring a sense of control. Therefore, I expect that shopping has the potential to help to alleviate sadness only situations in which a consumer feels in control of his or her decision. In addition, control over shopping should not affect the perceived sense of control in other domains (e.g., customers need to perceive that control over their finances was not lost by engaging in shopping). In this sense, it is also important to test whether these positive effects hold in the long run. Future research can focus on whether consumers feel better immediately, but regret their sadness-induced purchases in the future.

Hence, consumers who decide to engage in retail therapy should be aware that this effort towards regulating their emotional state only works if the strategy is not accompanied by lost control over other domains of life. Whether shopping (in moderation) can be part of a long-run therapeutic plan is an important question for future research. Other methods that restore a sense of personal control without endangering financial well-being (e.g., deciding how to rearrange the bookshelf or which clothes should be donated to charity) may be effective alternatives for people who feel uncomfortable utilizing retail therapy.

Indeed, future research should examine other avenues through which people can restore personal control and thus alleviate sadness. Consider, for example, a negotiation context. Imagine a situation in which Negotiator A wants to reach price \$X. There are at least two routes to reaching that price (Negotiator A could offer \$X, which Negotiator B accepts; or Negotiator B could offer \$X, which Negotiator A accepts). The economic outcome is held constant across these instances, but in the former case, Negotiator A may experience greater control, and thus experience a more rapid reduction in any lingering sadness that carried over into the negotiation. Of course, if making the first offer induces a sense of anxiety (cf. Rosette, Kopelman, & Abbott, 2014), these benefits may not be realized. It would also be interesting to consider how negotiations unfold when Negotiator A displays sadness, which may influence Negotiator B's behavior toward Negotiator A (e.g., increased or decreased concession-making; cf. Van Kleef, De Dreu, & Manstead, 2006), which may in turn influence Negotiator A's ability to recover from sadness.

It seems intuitive that if making shopping decisions or other choices helps to alleviate sadness, people would try to seek these opportunities to feel in control in order to actively regulate their emotional state. If this is the case, the experience of sadness should encourage

people to be more decisive in order to strategically influence their sadness. But it is well known that people frequently fail to regulate their emotional states as intended. Therefore, even though something as simple as making choices can reduce sadness, people do not always seize opportunities to improve their emotional states.

Based on evidence regarding indecisiveness and emotions, I hypothesized and found that sadness could potentially increase indecisive behavior in general. Incidental sadness did indeed impair decision-making by inducing several forms of decision avoidance. But it is important to highlight that indecisiveness does not necessarily always yield worse outcomes. Being indecisive when experiencing sadness might be an adaptive response that might have evolved in the context of extreme levels of sadness (e.g., grief), where the emotion is so strong that limits one's capacity to process information in a way that fosters good decision making. This could be explored in future research, since in this dissertation only mild levels of sadness were induced. In fact, in Study 2A (Chapter III) I found that, on average, sadness was not normatively detrimental to decision-making (since there was a normative choice, reducing the balance of the higher APR debt is arguably the more rational choice). Sadness made people more likely to split the payment (compared to a neutral state), which makes them better off than simply allocating all the resources to the lowest APR debt. Unexpectedly, in Study 2A the emotion that increased normative behavior was anger, contrary to the suggestion of previous research that anger impairs decision-making. It could be that mild states of anger actually help decision makers to maximize their outcomes. Anger is an emotion that reduces empathy, while increasing self-centeredness. Self-centeredness could make individuals more prone to seek ways to maximize their outcomes, which in this scenario was represented by paying the account with largest APR. I plan to directly address this interesting finding in future work.

In sum, I show that although choices can help to alleviate sadness, this experienced sadness brings a sense of uncertainty. Increased uncertainty might prevent people from strategically making choices that can increase their sense of control, which could potentially heal that sadness. Without making choices that increase feelings of control, people will be less likely to reappraise their situation, consequently taking longer to feel better. The interplay between choice and sadness is quite ironic: sadness reduces decisiveness, but decisiveness could help to alleviate one's sadness.

TABLES

Table 1

Ratings of hypothetical target (Pre-test Study 2A)

	N	Indecisive	Uncertain	Nervous	Risk-averse	Rational	Decision made person feel good	I would make this decision
Close smallest (\$100 MC \$0 Visa)	32	2.94 ^a	3.00 ^a	3.18 ^a	3.79 ^a	4.76 ^a	5.65 ^a	4.38 ^a
Split payment (\$50 MC \$50 Visa)	34	5.71 ^b	5.71 ^b	4.53 ^b	3.53 ^a	3.44 ^b	4.21 ^b	1.68 ^b
Normative (\$0 MC \$100 Visa)	34	3.16 ^a	3.00 ^a	3.03 ^a	3.41 ^a	5.16 ^a	5.06 ^a	4.25 ^a

Note: Different superscripts within columns denote means are significantly different at the $p < .05$ level.

FIGURES

Figure 1

Products utilized in Experiment 1

Merkury Headphones
\$25



Salt and Pepper Grinder Set
\$25



Memory Foam Slippers
\$25



Wooden Puzzle
\$25



Wine Decanter
\$25



Gel Mask
\$25



Flexible Wireless Keyboard
\$25



Pet Disc Lounge
\$25



Marble Cheese Board
\$25



Homedics Massager
\$25



Apples to Apples
\$25

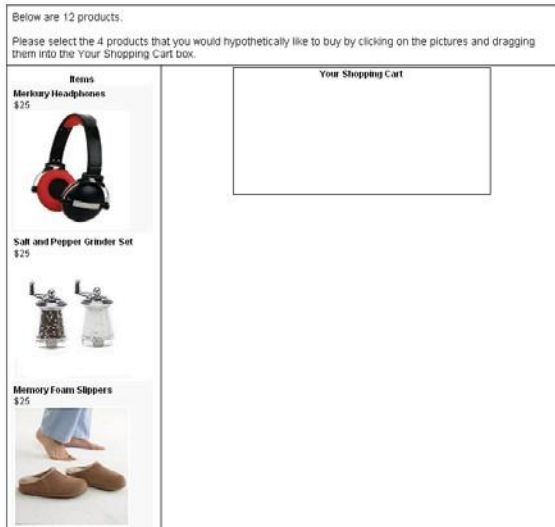


iHome Mini Speakers
\$25

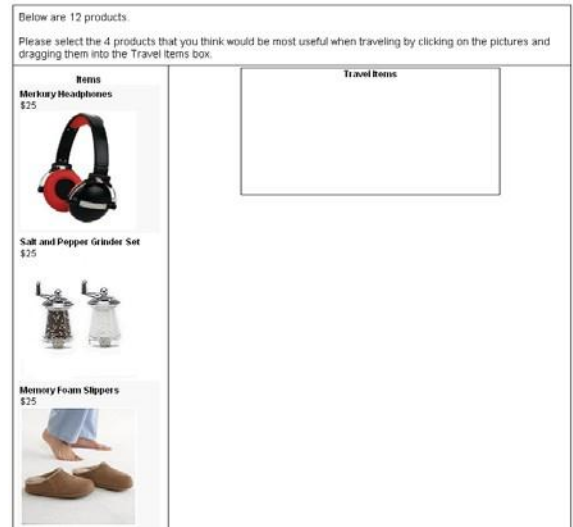


Figure 2

**Screenshots from Choice and Browsing Tasks
(Experiment 1, Chapter 2)**



Choosing Condition



Browsing Condition

Note: Participants scrolled down to see the full set of 12 products.

Figure 3

**Proportion of participants selecting each product by condition
(Experiment 1, Chapter 2)**

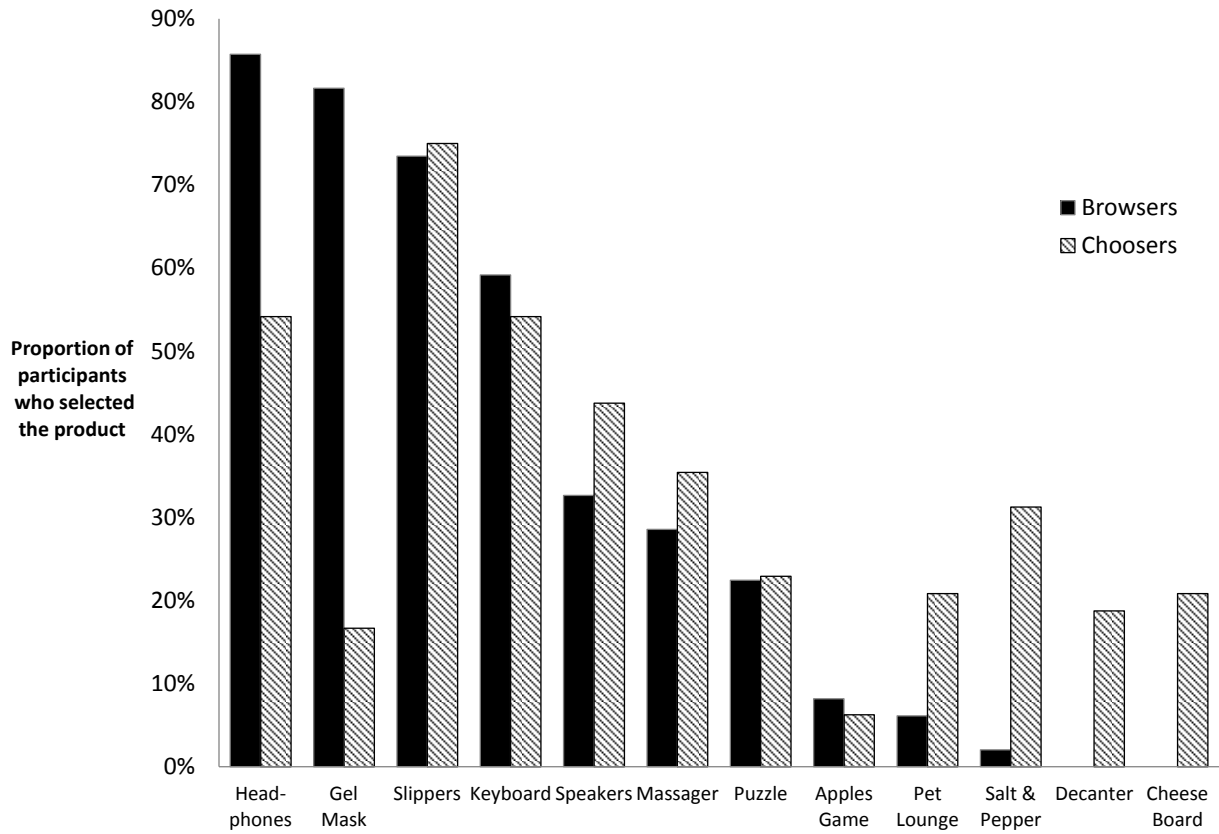


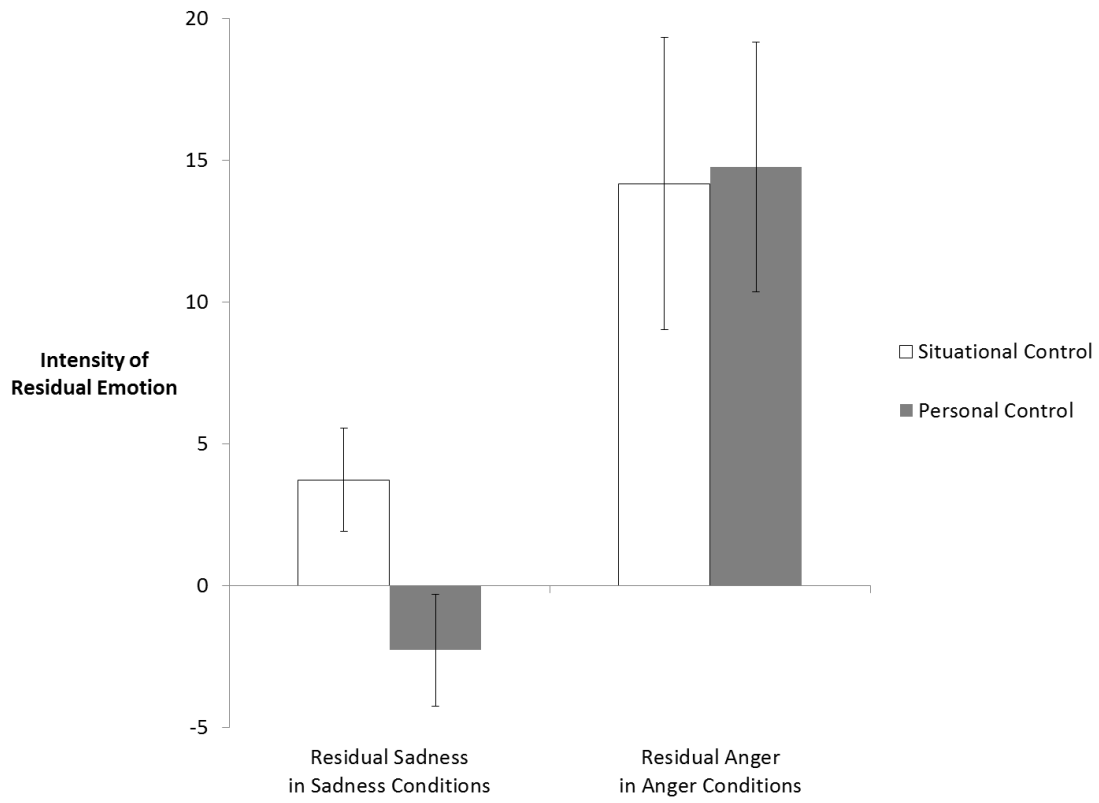
Figure 4

Choice set for shopping task (Experiment 2, Chapter 2)



Figure 5

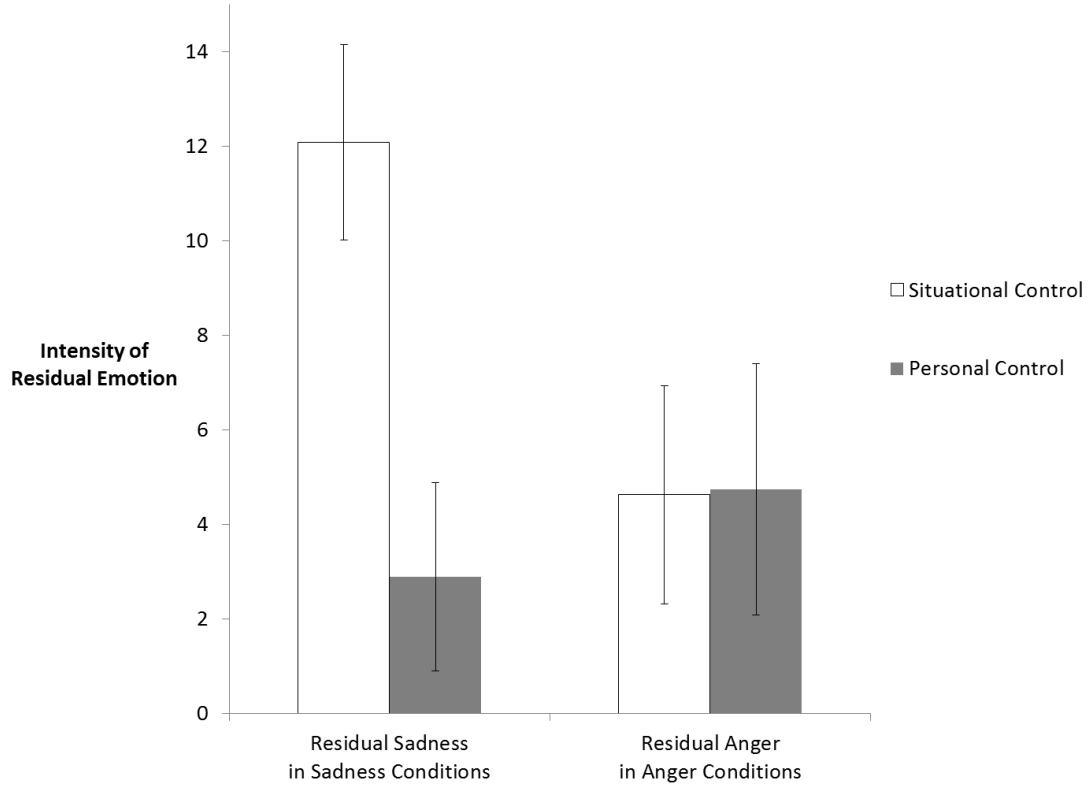
Focal residual emotion by condition (Experiment 2, Chapter 2)



Note: Error bars represent ± 1 standard error.

Figure 6

**Focal residual emotion by condition
(Experiment 3, Chapter 2)**



Note: Error bars represent ± 1 standard error.

APPENDIX

Control inductions used in Experiment 3

Situational Control

Please recall a particular incident in which you did not have any control over a situation important to you. By control, we mean a circumstance in which you could not control your environment in a way that allowed you to achieve something you wanted. For instance, this could be a time when you failed to exert the control necessary to overcome an obstacle, or when your actions could not change an important situation to meet your needs. Note that this does not involve lack of control – or lack of power – over other people, just lack of control over your environment. Please describe this situation in which you did not have any control—what happened, how you felt, etc.

Personal Control

Please recall a particular incident in which you had complete control over a situation important to you. By control, we mean a circumstance in which you controlled your environment in a way that allowed you to achieve something you wanted. For instance, this could be a time when you succeeded in exerting control to overcome an obstacle, or when your actions effectively changed an important situation to meet your needs. Note that this does not involve control – or power – over other people, just control over your environment. Please describe this situation in which you had complete, effective control—what happened, how you felt, etc.

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