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Consumption as Emotion Regulation

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Abstract

Products and services often provide value that goes beyond functional utility. Drawing from a compensatory consumption model, which suggests that consumption is a means to regulate self-discrepancies, the current research suggests that consumers are motivated to self-regulate their emotions and this self-regulation can be accomplished via consumption. Specifically, emotional and physiological deviations from a steady state motivate individuals to find balance in order to alleviate those deviations. Three papers provide evidence for this hypothesis. Utilizing an embodied cognition framework for chapter 2 and chapter 3, I demonstrate that individuals are motivated to reduce a perceived lack of interpersonal warmth by substituting physical warmth, and vice versa (chapter 2). Next, I argue that experiencing action regret results in self-conscious emotions (e.g. shame, guilt) associated with physical warmth, which in turn motivates individuals to ameliorate those emotional states via interaction with objects that are perceived to be physically or psychologically opposite in temperature (chapter 3). Finally, in chapter 4, I argue that individuals regulate feelings of sadness by seeking affiliation with others.

Keywords

Emotions, Compensatory Consumption, Embodied Cognition, Self-Regulation

Co-Authorship Statement

I hereby declare that this thesis incorporates some material that is a result of joint research. Chapter 2, published in the Journal of Consumer Psychology was co-authored with Dr. Mark Lee and Dr. Andrew Perkins. I was responsible in assisting with the literature review, data analysis, and providing the theoretical basis of the paper. Chapter 3, was also published in the Journal of Consumer Psychology and was co-authored with Dr. Mark Lee and Dr. Andrew Perkins. I was responsible for leading and assisting all aspects of the project including the research question, providing the theoretical basis of the paper, literature review, research design, and data analysis. Chapter 4, along with the introduction and concluding chapter, are the product of my own work under the supervision of Dr. Matt Thomson and Dr. Andrew Perkins.

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Chapter 1

1.1 Introduction

Individuals consistently face situations whereby they perceive a self-discrepancy between their current state and some goal state (Higgins 1987; Carver & Scheier 2001). These self-discrepancies subsequently motivate individuals to engage in behaviors to achieve or restore this desired state. In many cases, this behavior often takes the form of consumption. For example, a consumer may see a luxury car advertisement that triggers a discrepancy between their current status and their desired one, or that consumer may seek out attachment to an object or brand as a result of threatened attachment security (Keefer, Landau, Rothschild & Sullivan 2014).

A considerable amount of literature has provided evidence in a variety of domains that consumers engage in *compensatory consumption* - utilizing products or services to reduce or restore a self-discrepancy (Mandel et al., 2017; Gronmo 1988). Products, brands, and experiences often serve to create, maintain, signal, and preserve our identity and self-concepts (Belk, 1988) and as such, consumption can assist in resolving these self-discrepancies. These compensatory processes can be relatively direct, such as when a consumer is unsatisfied with their appearance and joins a gym, or more symbolic, such as a greater desire for conspicuous luxury items when feeling powerless (Rucker & Galinsky 2009). In a recent review, Mandel and colleagues (2017) cited a sample of relevant papers that demonstrated compensatory behaviors when consumers faced self-discrepancies with intelligence, physical appearance, academic ability, power, and dozens more. Of interest to the current dissertation, emotional discrepancies were absent from this list.

Although emotions are often examined in conjunction with compensatory processes, the focus is primarily on examining emotions as either the antecedent or consequence. Indeed, self-discrepancies often produce aversive states such as anxiety, shame, or disappointment, which provides the antecedent for the motivation to resolve the discrepancy, resulting in positive affect. However, virtually all extant research is focused on specific psychological cognitions often relating to one's self-concept, such as physical

appearance (Park and Maner, 2009), intelligence (Kim & Gal, 2014), uncertainty (Gao et al., 2009), power (Rucker and Galinsky 2008, 2009) or masculinity (Willer et al., 2002). However, little research has focused on emotional discrepancies. The current research focuses and explores this gap.

1.2 Compensatory Consumption and Emotion Regulation

Although the function, purpose, and desirability of emotions has been debated throughout history, they have consistently been thought to exert a powerful influence on judgments and behavior. Indeed, emotions have a strong influence on attention, perception, memory, goal regulation, and consumption (Ohman, Flykt & Esteves 2001; Nygaard & Lunders 2002). Related research has focused on emotion regulation, defined as "the process by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998 p.275). The work on emotion regulation has focused primarily on specific regulatory strategies, which consist of situation selection, situation modification, attentional deployment (distraction and concentration), reappraisal, suppression, and distraction (Bonnano & Burton, 2013; Gross & Thompson 2007; for a review see Webb, Miles, & Sheeran 2012). In each of these strategies, individuals cognitively assess their emotional state and attempt to consciously initiate, modify, or maintain it. Under this view, individuals attempt to regulate their emotions in service of some goal.

However, emotional regulation need not be means to an end. Other models of emotion regulation do not imply these same mechanisms. Carver and Scheier's (1989, 1990, 2001) model of emotional self-regulation suggests an implicit set of feedback loops to restore a sensed emotional discrepancy. Similar to the processes and elements that underlie homeostasis, emotion regulation functions as a form of goal pursuit in which actions are taken to reduce discrepancies from some ideal state. Consistent with this view, I suggest that consumers may seek specific types of consumption in an attempt to achieve a desired emotional state. The current research argues that individuals can also regulate their emotions via compensatory consumption.

Although consumer behavior research has focused on the various coping strategies consumers use to manage negative emotions, such as stress and anxiety (e.g. Duhachek, 2005; Duhackek & Iacobucci 2005), other research has demonstrated that consumers engage in compensatory consumption related to emotion regulation (Di Muro & Murray 2012; Labroo & Mukhopadyay, 2009; Shen & Wyer 2008). For example, Labroo and Mukhopadyay (2009) demonstrated that consumers will choose an indulgent snack if they believe that their negative affect is lasting or if they believe that their positive affect is fleeting. Similarly, consumers will choose a relaxing low arousal drink (e.g. iced tea) in order to regulate a negatively-valenced high arousal state, but will choose a high arousal drink (e.g. an energy drink) in order to regulate a negatively-valenced low arousal state (Di Muro & Murray 2012).

While evidence exists demonstrating that consumers use consumption in order to regulate general affective states, the current dissertation builds on this literature by focusing on specific emotional states. While previous research suggests that consumers often seek consumption to assist with mood maintenance, current theorizing in this area lacks predictive nuance. For example, there are a number of positively and negatively valenced emotions (e.g. relaxed versus excited, anger versus sadness), and the products and services consumers seek in these experiences may differ considerably. Indeed, Lerner & Keltner (2000) demonstrate that two emotions, fear and anger, while having similar valence, result in vastly different risk perceptions, with fearful people being pessimistic and angry people being optimistic.

Second, although positive affect is typically the goal, consumers may seek and maintain negatively emotional states, such as anger or anxiety, when expecting a confrontation or preparing for a test (Tamir 2005, Tamir, Mitchell, & Gross 2008). Further, certain emotional states motivate different types of behavior: for example, experiencing fear motivates a desire for greater social connection, but experiencing other types of negative emotions, such as anger, or disgust (Dunn & Hoegg, 2014) does not. Similarly, experiencing sadness leads to greater high risk/high reward options, while anxiety leads to low risk/low reward options (Raghunathan & Pham, 1999).

The position advanced in chapter 2 and chapter 3 draws on an embodied view of emotions and argues that emotion and subsequent emotion regulation is grounded in bodily states. Research has shown that psychological embodied manipulations can affect physiological experiences and vice versa. For example, being socially excluded results in lower skin temperatures, but holding a warm cup alleviates this effect (IJzerman et al. 2012). This is supported by neuroimaging studies that suggest that emotional pain (i.e., social exclusion) activates areas in the brain that motivates individuals to reduce and regulate such pain (Eisenberger, Lieberman, and Williams 2003). This motivation to reduce psychological pain similar to reducing physical pain suggests that embodied processes should respond in a similar way. That is, individuals can use physical objects to self-regulate psychological deviations, or could respond to a physical imbalance by behaving in ways that result in a psychological response that alleviates that imbalance. Physical objects used to self-regulate such imbalances should be related to some attribute of the source of the deviation. In many instances, this manifests itself as desire or preference for that physical object (Aarts, Custers, and Holland 2007; Forster, Liberman, and Friedman 2007; Higgins 1987). Hence, as an emotional discrepancy increases, so does one's desire for a psychologically related physical object. I elaborate on these ideas in the following section.

1.3 Embodied Cognition

"Common sense says, we lose our fortune, are sorry and weep; we meet a bear, are frightened and run; we are insulted by a rival, are angry and strike. The hypothesis here to be defended says that this order of sequence is incorrect, that the one mental state is not immediately induced by the other, that the bodily manifestations must first be interposed between, and that the more rational statement is that we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble, because we are sorry, angry, or fearful as the case may be." (James, 1884 p. 13).

Over the past two decades, the traditional view of human behavior as the product of the brain as an abstract processor has been challenged by research linking behavior to one's

physical body. Rather than seeing cognition as an amodal set of processes, recent findings have suggested instead that higher level processes are grounded in perceptual, motor, and sensory experiences (Niedenthal 2007). This view, known as embodied cognition (or grounded cognition), suggests that the processing of information is influenced by one's bodily states.

Much of the early research in this area focused on how the body informs how we process emotions. For example, smiling is associated with happiness and laughter (Strack, Martin, & Strepper 1988), anger with muscle tension and increased blood pressure (Niedenthal 2007), and loneliness with cold (Zhong & Leonardelli, 2008). However, extant research in embodiment theory within social psychology and marketing has typically been descriptive, rather than explanatory (Meier et al. 2012), and no major theory has emerged to describe the mechanisms and boundary conditions underlying these effects (Niedenthal et al. 2005; Smith and Semin 2004; Winkielman, Niedenthal, Wilgosz, & Kavangh 2015).

Some have argued that embodied manipulations activate concepts in memory, thus increasing the accessibility of related concepts. For example, holding a warm cup of coffee influences individuals to rate others as having a 'warmer' personality (Williams and Bargh 2008, but see Lynott et al., 2014), while inducing suspicion results in greater accessibility of fish-related words and consequently increasing the detection of fishy smells (Lee and Schwarz 2012). However, other extant research is not as easily interpretable within the accessibility framework. Lee and Schwarz (2010) have noted that the act of physically cleansing oneself (Lee and Schwarz 2010; Zhong and Liljenquist 2006) decreases one's guilt, but priming cleanliness has no effect. How might one interpret results like those reported by Lee and Schwarz (2010)? I suggest that these findings are better understood using a self-regulatory explanation. Although the term self-regulation has come to refer to self-control for many social psychology and marketing researchers (Baumeister, Heatherton, and Tice 1993), in the current research self-regulation is defined as the *corrective behavior that achieves physical or psychological balance* (see Lee, Rotman, and Perkins 2014).

As Damasio and Carvalho (2013) note, survival is dependent on maintaining bodily states within an optimal homeostatic range. Certain states such as hunger or fear are caused by automatic physiological reactions and subsequent motivational states are instrumental in resolving this emotional discrepancy. However, despite the considerable amount of work within biology and neurophysiology that has elucidated both the importance and mechanisms of homeostasis, this work has been relatively silent in explaining mental states (Damasio 2001). To fill this gap, the current dissertation argues that individuals have an emotional set-point and deviations from this set-point result in a motivation to resolve this discrepancy and restore equilibrium. Because emotions are grounded in physiological states, then consistent with physiological discrepancies similar homeostatic mechanisms should equally apply. For example, when individuals feel cold, they will seek out social warmth (e.g. chapter 2) or when experiencing shame and regret, will seek ways to mitigate these feelings (e.g. chapter 3).

1.4 Overview of Papers

Through three papers I examine the idea that consumption can serve a compensatory role in emotion regulation:

In chapter 2, *Embodied Cognition and Social Consumption: Self-Regulating Temperature through Social Products and Behaviors*, I demonstrate that individuals can reduce a perceived lack of interpersonal warmth by substituting physical warmth, and vice versa. I suggest that this behavior is self-regulatory in nature and that this self-regulation can be accomplished via consumptive behavior.

In chapter 3, *The Warmth of our Regrets: Managing Regret Through Physiological Regulation Via Consumptive Behavior*, I suggest that experiencing action regret results in self-conscious emotions (e.g. shame, guilt, etc.) which are associated with physical warmth. This in turn, motivates individuals to ameliorate that change via interaction with objects that are perceived to be physically or psychologically opposite in temperature.

Lastly, in chapter 4*: The Utility of Sadness*: *Exploring the Consequences of Sad Consumption*, I argue that the enjoyment of sadness is the result of a regulatory

mechanism in which sadness, but not other negative emotions, motivates individuals to seek social connectedness and affiliation. This motivation to connect with others leads to the enjoyment of sad media and a greater sense of subjective well-being.

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2 Chapter 2:

Embodied Cognition and Social Consumption: Self-regulating temperature through social products and behaviors

2.1 Abstract

Extant embodied cognition research suggests that individuals can reduce a perceived lack of interpersonal warmth by substituting physical warmth, and vice versa. We suggest that this behavior is self-regulatory in nature and that this self-regulation can be accomplished via consumptive behavior. Experiment 1 found that consumers perceived ambient temperature to be significantly lower when eating alone compared to eating with a partner. Experiment 2 found that consuming a cool (vs. warm) drink led individuals to generate more socially-oriented attributes for a hypothetical product. Experiment 3 found that physically cooler individuals desired a social consumption setting, whereas physically warmer individuals desired a lone consumption setting. We interpret these results within the context of self-regulation, such that perceived physical temperature deviations from a steady state unconsciously motivate the individual to find bodily balance in order to alleviate that deviation.

2.2 Introduction

A recent surge of psychology research examines an essential link between physiological experiences and social perceptions, behavior, and judgments (Williams & Bargh, 2008; Bargh & Shalev, 2012; Fay & Maner, 2012; Steinmetz & Mussweiler, 2011; Zhong & Leonardelli, 2008; Hong & Sun, 2012). These results are consistent with the emerging field of embodied cognition, which argues that our metaphorical understanding of concepts are grounded in, and can be influenced by, the physical experiences of our environment (Wilson, 2002; Barsalou, 1999; Niedenthal et al., 2005; Williams, Huang, & Bargh, 2009). Much of the extant embodied cognition literature in this domain focuses on the link between physical warmth or coldness and its relation to social relationships. For instance, physical warmth positively influences social perceptions, social trust, and social proximity (Ijzerman & Semin, 2009; Williams & Bargh, 2008), while feeling lonely (i.e., social exclusion) relates to perceptions of physical coldness or desire for warm remedies (Ijzerman & Semin, 2010; Zhong & Leonardelli, 2008). That is, experiencing physical warmth relates to interpersonal affection whereas experiencing physical coldness relates to exclusion and self-centeredness (Williams & Bargh, 2008). In addition, this link is bidirectional in nature (Zhong & Leonardelli, 2008), in that physiological experiences affect social affiliation as much as social experiences affect physiological reactions.

This bidirectional link between social affiliation and physiological warmth has been argued from a variety of perspectives. One of the prevailing views is the conceptual metaphorical perspective (Lakoff & Johnson, 1980, 1999; Gibbs, 1994; Barsalou, 2008), which argues that individuals jointly experience both abstract and physical concepts and subsequently conflate the two. Coupled with findings from embodied cognition, when individuals experience physical warmth, they feel closer to others, whereas when individuals feel cold, they feel psychologically more distant. Indeed, we often refer to "warm" individuals as trusting and generous, whereas "cold" individuals are competitive and untrustworthy (Fiske, Cuddy, & Glick, 2007; Williams & Bargh, 2008). Statements such as "*I'm giving you the icy stare"* or *"we are on thin ice"* carry a negative omen of hatred or breakage of friendship in an interpersonal context while *"she is warm and friendly"* or "*our relationship is heating up"* represents a positive tone of attractiveness

and affection in the same context. Further, studies show differences in bodily temperature based on people's personalities and their social environment. When participants are with similar others, they experience the ambient temperature to be higher (Ijzerman & Semin, 2010), while social exclusion leads individuals to feel colder (Ijzerman et al. 2012; Zhong & Leonardelli, 2008). This explains why people may feel greater "warmth" around their loved ones (e.g., families and friends) and "coldness" around those they dislike.

Moreover, the link between physical and social warmth is supported by research in biology and neuroscience. Social neuroscience research shows greater activation within the participants' left anterior insula during a social trust exercise after touching a cold pack, identifying the insula as a neural substrate that mediates the link between temperature and social trust (Kang et al., 2011). In another study, hand skin temperature decreased after participants were confronted with personally threatening questions (Rimm-Kaufman & Kagan, 1996). That is, when potential for interpersonal relations are compromised, people experience a drop in body temperature. Taken together, the linguistic coupling of metaphors reflect people's predisposition to experience a physiological change in social situations (Zhong & Leonardelli, 2008). This view ultimately suggests that language and our higher order cognitions are grounded in human behavior and physical contexts (Glenberg, 1997; Glenberg & Kaschak, 2002).

2.3 Embodied Cognition and Self-Regulation

Work exploring embodiment and conceptual metaphor theory within social psychology and marketing has typically been descriptive, rather than explanatory (Meier et al., 2012). Certainly, literature has focused on exploring the interesting effects related to embodied psychology, but has yet to truly understand the mechanisms, boundary conditions, or mediators underlying them. Despite all the evidence exploring embodied cognition, no major theory has yet emerged to explain it (Smith & Semin, 2004; Neidenthal et al., 2005).

Some views in embodied psychology have argued that embodied manipulations activate concepts and increase the accessibility of related ideas. For instance, holding a warm cup

of coffee influences individuals to rate others as having a ‘warmer’ personality (Williams & Bargh, 2008). Furthermore, inducing suspicion results in greater accessibility of fish-related words and detection of fishy smells (Lee & Schwarz, 2012). However, other research is not easily understood with such an explanation. Indeed, Lee and Schwarz (2012) have noted that physically cleansing oneself (Zhong & Liljenquist, 2006; Lee & Schwarz, 2010a) decreases one’s guilt but being primed has no effect. Rather, that research appears to be better understood through a self-regulatory explanation.

Although the term self-regulation has come to refer to self-control for many social psychology and marketing researchers (Baumeister, Heatherton, & Tice, 1994), we use self-regulation to refer to corrective behavior that achieves physical or psychological balance. One example of a self-regulatory embodied process comes from Kouchaki and colleagues (2013) who showed that not only did wearing a heavy backpack intensify feelings of guilt (e.g., heavy burden to bear), but individuals were more likely to choose a healthy snack and less likely to cheat, ostensibly to self-regulate those feelings of guilt. Demonstrating the bi-directionality of this effect, individuals can regulate emotions such as guilt or dissonance through embodied metaphorical actions such as washing one’s hands (Zhong & Liljenquist, 2006; Schnall, Benton, & Harvey, 2008; Lee & Schwarz, 2010b) and show a greater desire for products that allow them to do so (Lee & Schwarz, 2010a).

Other researchers argue that physical states can affect psychological processes such as perception, in order to regulate one’s behavior towards optimal outcomes (Balcetis & Dunning, 2009; Bhalla & Proffitt, 1999). For example, Proffitt and colleagues (Bhalla & Proffitt, 1999; Proffitt et al., 2003) demonstrate that when individuals are fatigued they will see hills as steeper and distances as farther, whereas Balcetis and Dunning (2009) showed that objects such as a water bottle are perceived as closer when they are more desirable (e.g., when people are thirstier). More related to the current research, work with temperature demonstrates that individuals who are induced to feel lonely seek to regulate these feelings of exclusion with a greater desire for warm drinks and food (Zhong & Leonardelli, 2008) or through behavior such as warm showers and baths (Bargh & Shalev, 2012).

Furthermore, research has demonstrated that psychological embodied manipulations can affect physiological experiences and vice versa. For example, being socially excluded results in lower skin temperatures but holding a warm cup can alleviate this effect (Ijzerman et al., 2012). Thus, if we have an innate tendency to maintain balance with respect to physiological changes such as temperature, then metaphorical embodied manipulation of temperatures should result in the same processes. Specifically, individuals can use physical objects to self-regulate psychological deviations from a state of balance. Conversely, an individual might respond to a physical imbalance by unconsciously behaving in ways that result in a psychological response consistent with alleviating that imbalance. Physical objects used to self-regulate a psychological imbalance should be related to some attribute of the source of the deviation. In many instances, this manifests itself as *desire* for that physical object (Aarts, Custer, & Holland, 2007; Forster, Liberman, & Friedman, 2007; Higgins, 1987). Hence, as psychological discrepancy increases, so does the desire for a related object.

While some of these results are interpretable within a consumption context (e.g., mouthwash, water bottle), no research in this domain specifically investigates consumption behaviors (context or product attributes) as a solution for this self-regulatory imbalance. Thus, the current research expands our understanding of the self-regulatory power of consumer goods (i.e., social products). Within the consumer domain, we argue that interpersonal warmth can be represented by type of consumption experiences or product attributes. Specifically, consumption experiences or product attributes that are *social* in nature might serve as a tool to substitute for interpersonal warmth. Previous research (e.g., Csikszentmihalyi & Rochberg-Halton, 1981; Belk, 1988; Rucker & Galinksy, 2008; Fournier, 1998; Solomon, 1983) suggests consumer products attain social and interpersonal attributes. Recent research argues people use social products (i.e., interactive products) to fulfill their need for affiliation and belonging (Ridings & Gefen, 2004). Thus, we extend these findings by examining the relationship between metaphorical and physical warmth and social belonging in a variety of consumption contexts.

Three experiments examine the relationship between physical temperature, social interaction, and consumption experiences. Specifically, we demonstrate that certain consumptive behaviors (consumptive experiences and products whose attributes are interpersonal in nature) serve as a self-regulatory mechanism. In experiment 1, we observe a social consumption setting and link these to perceptions of ambient temperature. In experiment 2, we manipulate the temperature of a consumed drink prior to assessing the desirability of interpersonal (i.e., facilitative of social interaction) product attributes. Experiment 3 manipulates ambient temperature and measures the desirability for a two-person versus a single-person consumption experience. Taken together, these results suggest that the relationship between metaphorical and physical temperature manifests itself within the context of consumptive behaviors and product attributes, and that, more importantly, both physical and metaphorical warmth act as a self-regulatory mechanism via those consumptive behaviors and product attributes.

2.4 Experiment 1

Experiment 1 (field study) observes whether a relationship exists between social consumption setting and perception of atmospheric temperature. Specifically, we believe individuals in a low social consumption setting (e.g., eating a meal alone) should perceive the surrounding temperature as lower than the actual ambient temperature. On the other hand, individuals in a high social consumption setting (e.g., eating a meal with another person) should perceive the surrounding temperature as higher than the actual ambient temperature.

Method

Experiment 1 was conducted at a food court during lunch time (12-3pm) in a large public shopping mall (over 190 stores). 56 restaurant customers participated voluntarily in this field study. The experimenters approached 28 individuals dining by themselves (low social consumption condition) and 28 individuals dining with one other person (high social consumption condition) and asked whether they would be willing to participate in a short study. After receiving their consent, the experimenter asked the subjects to

estimate the current building temperature (Zhong & Leonardelli, 2008). To give them a baseline, we informed participants that the normal room temperature is 22°C. The actual room temperature was not given to the participants but it was measured to be 21.5°C. To prevent hypothesis guessing, the participants were informed that this information was requested by the mall maintenance staff. After providing their answers, the individual was thanked for their time.

Results

Participants in Experiment 1 estimated a range of atmospheric temperatures from 11°C to 27°C (M = 21.39°C, SD=2.92°C). The participant group as a whole was very accurate in their assessment of the ambient temperature: there was no difference between the group estimate of the ambient temperature and the actual (21.5°C: $t(55) = -.28$, $p = .78$) or the informed temperature (22.0°C: $t(55) = -1.56$, $p = .13$). However, participants sitting alone (low social consumption condition) gave lower estimates of room temperature than those who were eating with another person (high social consumption condition) ($M\ low$ = 20.21°C (SD=3.25) vs. $M\ high$= 22.57°C (SD=1.97); $t(54) = 3.28$, $p < .01$). Further, participants dining alone (low social consumption setting) provided estimates lower than the actual room temperature (at 21.5°C) ($t(27)low = -2.10$, $p < .05$), while people dining with another person gave higher estimates than the actual room temperature ($t(27)high$ = 2.87, $p < .01$). Thus, the results suggest a relationship between social consumption setting and perceived atmospheric temperature.

Discussion

Experiment 1 converges with previous research that demonstrates social interactions are related with feelings of warmth. The results suggest that the social characteristics of a consumption setting affect perceptions of ambient temperature. Specifically, eating a meal alone (a low social consumption setting) led individuals to underestimate the actual ambient temperature of the room, while eating a meal with another individual (a high social consumption setting) led individuals to overestimate the actual ambient temperature in the room. Since pairs of individuals eating together in the food court are most likely know each other, the current research findings are analogous to Ijzerman and

Semin (2010) who reported that those surrounded by familiar others perceive ambient temperature to be warmer or that feeling socially excluded leads to lower estimates of temperature (Zhong & Leonardelli, 2008). Taken together, the results of this field study establish a link between social situation (or proximity) and perception of ambient temperature.

In experiment 2, we test whether manipulating *temperature* alters people's desire for social products. Drawing from our discussion of self-regulation, we predict that individuals who are warm are less interested in social products, whereas those who are cool are more likely to seek such interactions through their products. Physiological research has long known the threats of overheating and the importance of cooling (Sutton, 1909; Caruso et al., 1992) and there is reason to believe that individuals feel the need to find balance from feeling warm or cold. Here, we extend this notion to show that people seek to self-regulate their physical temperature through desire for social products. Hence, we predict people consuming a warm (cool) drink will experience less (more) desire for social products.

2.5 Experiment 2

A total of 54 undergraduate students (54% females) participated in exchange for course credit. Upon arriving to the lab, we told them that they would be completing two mini-studies. In part one, we asked students to evaluate a new type of tea. Students were randomly given a warm or cool tea. To give individuals the time to drink the tea, we asked the participants to write their thoughts and comments about the product (while drinking). This was also done to prevent any hypotheses guessing. In part two, we provided individuals with a description of a new robot-maid prototype that is being developed in Japan for the future. We showed them a picture of the product and told them that the inventor is seeking to add more functions to increase the capabilities of the robot prototype. We asked the participants to suggest as many ideas as they could for new functionalities and features that would be suitable and desired by the participant (should they purchase it). Participant responses were coded by two judges unaware of the research hypotheses. The judges were instructed to rate thoughts/ideas that relate to

interactive functions as *social* (e.g., talking/interacting, walking buddy, sexual acts) and rate thoughts/ideas that relate to non-interactive functions as *non-social* (e.g., vacuuming, cooking, alarm clock). Overall, the two coders' results were very consistent (r = .98) and any outstanding disagreements were resolved through a discussion with the authors. As our dependent measure, a social thought index was constructed by taking the difference between the number of non-social thoughts and social thoughts, divided by the total number of thoughts. Zero indicates an equal number of two types of thoughts, a positive number indicates more social thoughts, and a negative number indicates more non-social thoughts.

Results

Participants, on average, came up with a total of 5.54 (SD=2.17) ideas. In general, participants came up with more non-social functions than social functions (*M social* = 2.50 (SD=1.21) vs. *M non-social*= 3.07 (SD=1.47); $t(52) = 2.64$, $p < .05$). This was expected as it is easier for participants to come up with non-social uses for a robot maid compared to interactive uses. Consistent with our predictions, the participants consuming a cool beverage scored higher on the social thought index than the participants consuming a warm beverage (*M cool* = .05 (SD=0.34) vs. *M warm*= -.21 (SD=0.37); $t(52) = 2.71$, $p < .01$). That is, people consuming a cool beverage (vs. warm) reported a higher ratio of social functions to non-social functions, ostensibly because they longed for more social yearning through their robot-maid.

Discussion

The results of experiment 2 provide evidence that social products serve as a proxy for social interactions to regulate temperature. Furthermore, the results of experiment 2 support the idea that those individuals who are warm become less interested in social interactions, whereas those who are cool are more likely to seek such interactions.

In the case of experiment 2, individuals were manipulated to feel warm/cool and then their desire for a social product was examined using a thought-listing task. Experiment 3 builds on this by observing whether ambient temperature affects the actual desirability of

different types of consumption settings. Specifically, we manipulate two independent variables of interest: the ambient temperature of the experimental room (cool versus warm), and whether the social consumption setting (a movie theater package) was to be consumed alone (low social consumption setting) or was to be consumed with another individual (high social consumption setting). The dependent variable was the overall desirability of the social consumption setting. If temperature and the social consumption are inherently linked, we suspect that the environment (warm or cool room) moderates consumers' level of desire for social consumption activities. We predict people in a warm (cool) room will experience less (more) desire for social consumption.

2.6 Experiment 3

Ninety-four undergraduate students (50% females) participated in this experiment as part of a larger study. The study was a 2 (room temperature: warm / cool) x 2 (social consumption: low / high) between-subjects design. To manipulate room temperature, we modified the room temperature prior to students coming into the lab. We also asked the students to take off their jackets, thereby ensuring that temperature perceptions would not be attenuated by participants' attire (Steinmetz & Mussweiler, 2011). Similar to the temperature ranges used in previous research (Ijzerman & Semin, 2009), the cool condition retained a room temperature of approximately 17-18 °C and the warm condition retained a room temperature of 26-27°C. To manipulate social consumption, we asked to them evaluate the attractiveness of a new Groupon movie-package deal. In the low social consumption condition, the participants saw a deal that included the price of admission, small popcorn and small drink, and reserved seating priced at $15 (limit of 1 purchase per person). In the high social consumption condition, the participants saw a deal that included two admission tickets, two small popcorn and drinks, and reserved seating priced at $30 (limit of 1 purchase per person). We then asked the participants to evaluate the desirability of the deal (1- not desirable; 7 – very desirable).

Results

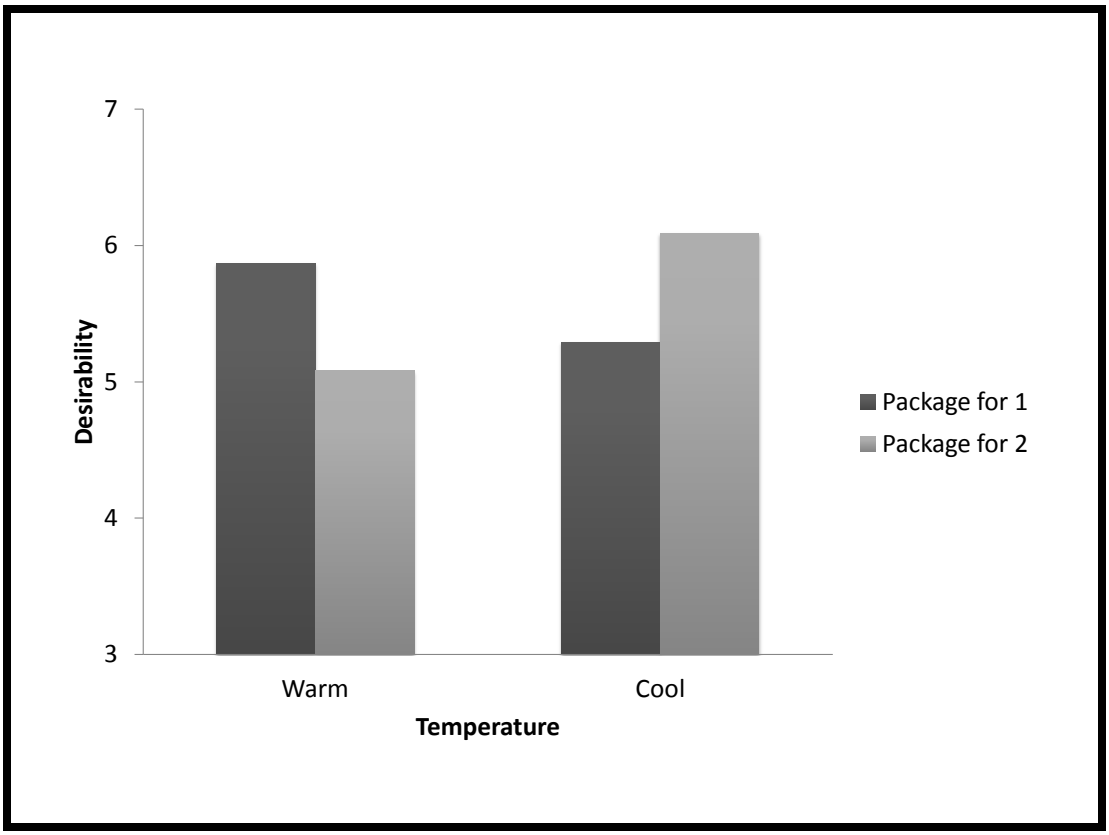
ANOVA analysis revealed an interaction effect of temperature and social consumption $F(1,93) = 12.33$, $p < .01$, $\eta^2_p = .10$). Simple main effects revealed that people in the cool room evaluated the coupon-for-two deal (high social consumption) higher than the coupon-for-one deal (low social consumption) (*M high* = 6.09 (SD=0.95) vs. *M low*= 5.29 (SD=1.16); $F(1,93)= 6.24$, $p < .05$, $\eta^2_p = .04$). In addition, simple main effects also revealed that people in the warm room evaluated the coupon-for-one deal higher than the coupon-for-two deal (*M high* = 5.08 (SD=1.38) vs. *M low*= 5.87 (SD=0.78); $F(1,93)= 6.09$, $p < .05$, $\eta^2_p = .04$). See figure 1 for a graphical representation of the results.

Overall, the results of experiment 3 provide additional evidence that consumptive behaviors can be used by individuals to self-regulate temperature in both warm and cool situations. Specifically, we found that individuals who felt cool desired a consumption experience that included others, whereas those who were warm desired a lone consumption experience.

2.7 General Discussion

Past marketing studies related to temperature primarily focus on retailers' "servicescape", specifically on how temperature affects ambient experiences (Booms & Bitner, 1992; Hoffman & Turley, 2002). For example, retailers avoid setting very high or very low temperature to discourage avoidance behavior (Baker, 1987) and consumers perceive temperature in "on-the-ground" department stores as more stable than underground department stores (Chun & Tamura, 1998). While these studies reveal the important role of temperature in consumption experiences, researchers lack the understanding of how temperature relates to social consumption contexts (i.e., consuming alone vs. consuming with others) or with social products (e.g., interactive features such as Siri in iPhones). In three experiments, we provide support for the self-regulatory power of social consumption and products. In experiment 1, we first established the link between social consumption and temperature such that individuals sitting alone perceived the ambient temperature to be significantly lowered (cooler) than individuals who were sitting with another individual. This supports and confirms extant literature in the field of embodied cognition. Experiment 2 revealed that being cool (vs. warm) increased an individual's

Figure 1: Temperature x Social Product on Movie Package Desirability



desire for social features in a hypothetical product. These findings parallel the notion that physical experiences such as temperature influence social information processing (Steinmetz & Mussweiler, 2011). However, it counters recent beliefs that warmth activates social affiliative motivations (Fay & Maner, 2012). Instead, people given a cool (vs. warm) drink prefer social affiliation to achieve bodily balance, potentially explaining why explains why people given a cool (vs. warm) drink generated more social-related thoughts for their robot-maid in experiment 2. While it is possible that people in cool (warm) states may feel isolated (connected) from others and make judgments that are socially cool (warm) (Delgado, Frank, & Phelps, 2005; Ijzerman & Semin, 2009), it doesn't preclude them seeking or desiring warmth (coolness). Hence, it is still possible that individuals still feel closer to others when experiencing warmth, but develop a preference and desire for remedies that balance their physiological system.

Experiment 3 suggests individuals attempt to self-regulate when they are exposed to either a warm or cool physical setting. When placed in a cool room, participants desired an entertainment package that was socially inclusive, while those placed in a warm room desired the entertainment package that was socially exclusive. While previous studies suggest that physical warmth may act as a substitute for people's desire for affiliation or promote pro-social behavior (Bargh & Shalev, 2012; Ijzerman et al., 2012), our findings are more aligned with the notion that people desire remedies to counterbalance their current state (i.e., self-regulation). For example, physical coldness can cause a feeling of loneliness (Bargh & Shalev, 2012), which in turn creates desire for social remedies (i.e., coupon-for-two). Together, our findings confirm and are consistent with theories that social experiences are not independent of physiological experiences, and that they are very much relevant to consumption contexts. More importantly, we show temperature influences consumers' desire for social consumption (E3) and social products (E2).

It should be noted that the effects outlined here are opposite to what one would expect given a more straightforward, less motivational conceptual priming account. A key feature of semantic priming is that it increases the accessibility of related constructs (Neely, 1977; Förster & Liberman, 2007; for a meta-analysis, see DeCoster & Claypool, 2004). For example, if an individual has to form a possible sentence from items such as

“leg break arm his” they will be more likely to view ambiguous targets as more hostile whereas priming "the hug boy kiss” will encourage more kind ratings (Srull & Wyer, 1979). Indeed, previous research demonstrates that the direction flows towards the prime with only unambiguous and extreme exemplars resulting in a contrast effect (Herr, Sherman & Fazio, 1983). Subsequently, if the manipulations presented here were merely activating a semantic prime, one would expect that ‘warm’ manipulations would activate ‘warm’ associations. However, the results here were the exact opposite. Individuals induced to feel either physically or socially warm preferred and activated physically/socially cool desires, while those that felt physically or socially cool preferred warmth.

In addition, these results differ from what would expect from a goal-related prime. Indeed, research has demonstrated that goal primes activate desired end-states (Sela & Shiv, 2009; Forster, Liberman & Friedman, 2007). For example, work disentangling the often confounded question of when a prime activates a goal and when it activates a trait showed that goal directed primes are a function of discrepancies between the prime and the self (Sela & Shiv, 2009). For instance, past research has shown priming achievement made individuals more competitive (Bargh et al., 2001), priming helpfulness increased participants helpful behavior (Macrae & Johnston, 1998), and priming conformity increased group consensus (Epley & Gilovich, 1999). Once again, if our manipulations had activated a traditional goal prime, we would have expected that those who felt physically/socially warm (cool) to have a greater desire for warm (cool) products or environments. However, we found the opposite.

Finally, one may wonder whether these results are simply explained with an intraconceptual embodied simulation explanation as opposed to with a conceptual metaphor framework (Landau, Meier & Keefer, 2010). As Landau and colleagues (2010) state, temperature related sensations, such as hugs, are typically related to friendliness. As such, the effects of temperature at the food court could be understood from an embodied context. However, drink temperature or social products are unlikely to be regularly associated with friendliness or temperature. Hence, our results suggest a metaphoric

overlap between social/physical warmth (concrete concept) and the abstract concept of social/physical warmth.

Overall, we contribute to the literature by demonstrating the link between physiological experiences and people's desire for social interaction through self-regulation. Instead of warmth promoting interpersonal affection and coolness promoting isolation, we find that people seek to achieve balance (e.g., desiring interactive products when cool and isolation when warm). This suggests that when one feels cool, people develop increased social affiliative motives; when one feels warm, people seek relatively more social isolation. More importantly, we extend this framework into consumption scenarios and development of social products, providing managerial implications for marketers.

The current findings may benefit marketers in multiple ways. First, it is important for marketers to control environmental settings (e.g., room temperature) to initiate relational behavior. For example, it is often considered that live speed dating sites should operate in a "warm and cozy environment" to increase interpersonal affection for potential candidates. In contrast, we suggest that cooler rooms may encourage individuals to desire social remedies, such as developing interpersonal relations, in order to self-regulate from being cool. This research is also relevant to marketers seeking to develop social products. For instance, retail stores trying to sell social products (i.e., interactive toys) may encourage individuals to seek out social products by keeping their stores cooler.

Previous research (e.g., Spangenberg, Crowley, & Henderson, 1996) suggests strongly that cues in the shopping environment can positively (or potentially detrimentally) affect product perceptions. Given that ambient temperature may have an effect on perceptions of social consumption (Ijzerman & Semin, 2010) and signals for social proximity (Fay & Maner, 2012), future research should delve into understanding more about how temperature (such as store temperature) affect one's desire to socially interact with products and with others For example, while our research focused more on products, perhaps these results can be extended to service environments where interaction between the customer and the company representatives (i.e., salespeople) is highly encouraged. For example, would hair salons that encourage interactions with their customers be better

off by keeping their ambient temperature cooler? Future research should extend our findings into service environments where company-customer interactions are paramount. Moreover, being warm vs. boiling (cool vs. freezing) could be psychologically different for consumers. For instance, while warmth elicits feelings of comfort, hot may elicit feelings of anger or passion. Therefore, future research should also consider how different degrees of temperature may replicate or yield separate results from the ones we have shown in this research.

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3 Chapter 3

Warmth of our Regrets: Managing Regret Through Physiological Regulation Via Consumptive Behavior

3.1 Abstract

This research suggests that experiencing action regret induces a change in psychological and physical warmth, motivating individuals to ameliorate that change via interaction with objects that are perceived to be physically or psychologically opposite in temperature. Experiment 1 revealed individuals experiencing action regret felt more self-conscious emotions, and subsequently preferred cold (versus hot) drinks. Experiment 2 replicated this effect and ruled out arousal as a possible alternative explanation. Experiment 3 furthered this link by demonstrating that those feeling more self-conscious emotions felt warmer and subsequently preferred cold (versus hot) drinks. Finally, experiment 4 found that advertisements manipulated for temperature (e.g., cold climate) mitigated the psychological effects of action regret. We interpret the results of these four studies within the emerging field of embodied cognition, which argues that our understanding of emotional concepts is grounded in, and can be influenced by, physical experiences.

3.2 Introduction

Regret is an aversive cognitive emotion that people are motivated to avoid, suppress, deny, and regulate should they experience it (Zeelenberg & Pieters, 2007). It is a negative, cognitively-based emotional response experienced when realizing or imagining that our present situation would have been better had we acted differently (Zeelenberg, 1999). For consumers, regret induces a painful sensation that arises as a result of comparing 'what is' with 'what might have been' (Sugden, 1985). In other words, regret transpires when an obtained outcome compares unfavorably with an outcome that could have been better had the individual chosen differently. Within a marketing context, consumers are constantly making choices that might lead to feelings of regret; understanding the processes that lead to ameliorating this experience is important for maintaining the well-being of consumers. As such, one key area of interest for marketers is to understand how the cognitive experience of regret might affect consumption behavior.

Recent theories (Damasio & Carvalho, 2013) of emotion processing assert that our subjective mental experiences of emotion are a function of our bodily states. In line with an embodied perspective, emotions are thought to be generated by the individual's perception of related physiological responses. Indeed, empirical evidence suggests bodily expressions and responses are closely tied to the processing and interpretation of emotional experiences (Damasio, 2000; Niedenthal et al., 2005; Niedenthal et al., 2009). For instance, fear is associated with certain bodily responses such as raised heart rate and goose bumps (Oosterwijk et al., 2010). Stepper and Strack (1993) suggest that specific bodily postures (e.g., upright posture) are associated with specific emotional response (e.g. pride). Even merely thinking about emotional content elicits certain facial expressions (Winkielman & Cacioppo, 2001). Physiological research demonstrates that emotional responses may result in certain forms of bodily stimulation, such as electrodermal activity (Glenberg et al., 2009). Hence, emotion processes are inherently linked with physiological responses, and contain psychobiological properties such as motor expression, action tendency, subjective experience, and emotion regulation (Fontaine et al., 2007).

Here, we argue the effects of experiencing regret on consumer behavior from an embodied cognitive perspective. Importantly, we move beyond merely documenting the physiological-psychological link between regret and consumption by uncovering the process mechanism that explains this relationship. Specifically, we show that experiencing a certain form of regret (i.e., action regret) results in increased perceptions of warmth via the experience of self-conscious emotions and creates a subsequent desire for cold (versus hot) products. Taken together, these findings help to define the psychological underpinnings of experienced regret within the context of embodied cognition theory and extend it into meaningful applications in marketing and consumer behavior from both a theoretical and managerial perspective.

3.3 Conceptual Background

Individuals can regret their actions (errors of commission), as well as their inactions (errors of omission; Gilovich & Medvec, 1995). For example, an individual can regret an active decision gone wrong (e.g., purchasing a stock that subsequently plunges in value), or regret failing to act (e.g., not purchasing a stock that subsequently rises in value). We use the terms *action regret* and *inaction regret* to denote whether the regret stems from an event in which one took action or failed to act. Prior research examining regret has shown that there are fundamental differences between regretful situations that result from action and regretful situations that result from inaction in terms of the distinct emotional patterns that are elicited (Kahneman & Tversky, 1982). For instance, action regret (e.g. regretful situations that are caused by one's actions) induces not only the emotion of regret but also self-conscious emotional experiences such as shame and guilt, whereas inaction regret (e.g. regretful situations that are caused by one's inaction) similarly induces the emotion of regret but also wistful emotions such as longing and contemplation (Kedia & Hilton, 2011). Action regret typically results in increased internal attributions and self-focused counterfactural thinking (Byrne & McEleney, 1997; Kahneman & Miller, 1986; Zeelenberg, van der Pligt, & Manstead, 1998; Zeelenberg, van Dijk, & Manstead, 1998). Subsequently, emotions such as shame, guilt, embarassment and remorse (generally considered to be among the consequences of evaluating oneself negatively) should be higher when experiencing situations of action

regret. On the other hand, emotions such as anger and frustration are a function of external attributions, and should occur in similar propensity for action and inaction regret. Finally, the feeling of regret reflects a temporal pattern in which situations of action regret tend to elicit greater regret in the short-term but not in the long-term. For example, while buying a stock that subsequently plummets tends to elicit greater immediate regret than holding onto that stock (Kahneman & Tversky, 1982), other research that examines recalling regret later has found either no differences or even the opposite effect (Gilovich & Medvec, 1995; Kedia & Hilton, 2011; Zeelenberg et al., 2002).

Notably, it is important to acknowledge that the emotional profiles (e.g., shame vs. wistfulness) resulting from the varying situations that elicit action vs. inaction regret are seen as separate from the regret emotion itself. Similarly, while regret may be seen as a type of self-conscious emotion, it is theoretically distinct from other self-conscious emotions such as shame, embarrassment, or disappointment. As Zeelenerg and Pieters (2007) note "regret is distinct from related other specific emotions such as anger, disappointment, envy, guilt, sadness and shame, and from general negative affect on the basis of its appraisals, experiential content and behavioral consequences." (p.7). Individuals can feel regret without feeling shame or embarrassment, and they can experience shame and embarrassment without regret. Research examining both regret and shame find only modest correlations between the two (Zeelenberg & Pieters, 2007). Further, Zeelenberg et al. (Zeelenberg et al., 1998) extended Roseman et al.'s (1994) ideas to compare the phenomenological differences between regret and disappointment. They found that regret was associated with items such as "[you] feel that you should have known better" or "[you] want to undo the event", while disappointment was associated with "[you are] feeling powerless" or "[you] want to do nothing" (see Zeelenberg et al., 1998 for more differences). Overall, those who experienced regret tended to rethink about past events, while those who experienced other negative self-conscious emotions tended to dismiss their negative experience. This explains why regret has been found to promote goal persistence, while disappointment has been found to promote goal abandonment (Zeelenberg et al., 2000). Individuals who regret are likely to set goals that are directed at improving one's self, similarly to how a person becomes self-focused and seek replenishment when experiencing emptiness (Levontin, Ein-Gar, & Lee, 2015).

Taken together, we offer series of predictions based on individuals' desire to regulate their level of regret. We propose that consumers seek to ameliorate their experienced regret through consumptive acts. Moreover, we focus primarily on the situation type (e.g., action regret) as it involves the activation of self-conscious emotions.

3.4 Hypotheses Development

Niedenthal (2008) suggests emotions are understood through an embodied framework where individual's physical, cognitive, and other emotional properties are mapped together in the neural system. For instance, when experiencing nervousness, the concept of "nervous" in memory may be linked with rapid heart rate/dry mouth (physical), anticipation (cognitive), and fear/anxiety (other emotions), which together culminate the emotional experience. As such, modality-specific models of emotions assert that specific networks of experiences are stored and associated with a particular emotional response, allowing for easier interpretation and processing of emotional information (Niedenthal, et al., 2009).

Recent research (Nummenmaa et al., 2013) demonstrates that certain emotions correspond with different physiological states. In their research, Nummenmaa and colleagues show that consciously felt emotions were associated with distinct perceptions of body temperature. More germane to this article, their findings imply that people feel warm when they feel shame or remorse. Further, there are additional reasons that experiencing these emotions should result in embodied warmth. For example, experiencing shame and remorse can cause blushing, a physiological response associated with vasoconstriction and warming (Shearn et al., 1990). We argue that because situations that lead to action regret activate these same self-conscious emotional states that have been linked to warmth, experiencing action regret should lead to increased perception of warmth. A pre-test confirmed that the recalling an experience of action regret differentially affects participant's perception of ambient environmental temperature; participants instructed to remember an instance of action regret perceived the room to be warmer than those in the inaction regret condition. Specifically, 57 undergraduate students (58% females) were randomly assigned to one of two conditions:

participants in the first condition were instructed to recall a situation where they experienced action regret deeply (e.g., regret something they have done), while participants in the second condition were instructed to recall a situation where they experienced inaction regret deeply (e.g., regretting something they failed to do). Following the completion of this task, participants were told that the building maintenance staff had requested that they estimate the current room temperature. The actual room temperature was not given to the participants but it ranged from 20 – 20.5°C (68-69 °F) during the experiment sessions. The mean outside temperature during the experiment over two days was 16.5 °C (62 °F), with an average temperature of 17°C (63°F) on the first day and 16°C (61°F) on the second day. Following the estimation of the room temperature, participants were debriefed and released. Overall, participants estimated ambient room temperature within a range from 55 to 75 degrees Fahrenheit. A one-way ANOVA revealed that the participants who recalled an action regret experience reported higher ambient room temperature than those in the inaction condition (M_{action} = 69.89 °F vs. $M_{inaction}$ = 67.76 °F; $t(55) = 2.12$, $p < .05$, $\eta^2_p = .08$).

3.5 The Link Between Consumption and Regulating Regret

Extant consumer behavior research suggests that individuals use consumption to regulate both actual and symbolic discrepancies (Hirschman & Holbrook, 1982). That is, people have an innate tendency to maintain balance, and embodied processes allow for self-regulation to occur in a consumption context (Lee, Rotman, & Perkins, 2014). As discrepancy increases, so does the desire for a consumptive object related ameliorating that discrepancy. For example, individuals who have their morality threatened show a greater desire for cleaning products (Zhong & Liljenquist, 2006), while social ostracism has been shown to lead to a greater desire for warm food and drink (Zhong & Leonardelli, 2008). Further, Bilz (2012) reveal that law students who use "dirty evidence" were more likely to choose a bottle of hand-sanitizer over a pen as a free gift. People who lied over voice mail desired mouthwash to purify the specific body part that involved the moral transgression (Lee & Schwarz, 2010). Relating to emotions, people who feel embarrassed exhibited coping strategies to hide or restore their face using consumptive objects (i.e., sunglasses/cosmetics) as a way to mitigate their negative

emotion (Dong, Huang, & Wyer, 2013). Overall, these results suggest that consumptive objects or experiences can be used as regulatory mechanism to achieve a physiological balance. Thus, we extend this logic to suggest people will seek to regulate their experienced regret through consumptive objects and consequently develop stronger preferences for products, thus ameliorating their feelings of regret. Here, we propose that individuals should be motivated to ameliorate this emotional warmth of regret using variety of temperature-related environmental objects (e.g., beverage products).

In a review of the emotion-behavior link, Baumeister and colleagues (Baumeister, Heatherton, & Tice, 1993) argue that rather than viewing the emotion-behavior link as emotion causing behavior, it should instead be viewed as behavior pursuing emotion. Specifically, Baumeister and colleagues argue that when individuals are in an aversive state (fearful, shameful, etc.), they will engage in behaviors in an attempt to regulate and thus achieve a positive emotional state. For example, it has long been established that sadness can cause helping behavior (Cialdini, Darby, & Vincent, 1973; Cunningham, Steinberg, & Grev, 1980). However, when individuals are given a placebo and told that it would make emotional mood states immune to change, this resulted in less helping behavior (Manucia, Baumann, & Cialdini, 1984). Other results have replicated this finding in different domains, showing that a 'mood-freezing pill' results in lower regulating behavior of eating and sadness or procrastination and anxiety (Tice, Bratslavsky, & Baumeister, 2001).

Thus, we argue that the preference for cold for those experiencing situations of action regret should be the result of one's experience of self-conscious emotions. Individuals who are feeling greater remorse, shame, or embarrassment should attempt to regulate this negative state. Further, because these states are tied to warmth (cf. Nummenmaa et al., 2013), these individuals should be motivated to consume cold beverages as a regulatory mechanism. Conversely, other emotional states, such as anger, irritation, and arousal, which don't systematically differ between the two forms of regret, should not be a predictive factor.

H1a: Individuals recalling a situation of action regret will prefer cold items to hot items.

H1b: The relationship between recalling a situation of action regret and a preference for cold (versus hot) items is mediated by the feelings of self-conscious emotions.

Finally, an important function of the human mind is the ability to imagine external realities (Gilbert & Wilson, 2009). Past research has shown that imagining an experience can have similar effects as actual experiences (Dahl, Manchanda, & Argo, 2001). Individuals can experience various types of affective responses as a result of imagining others or imagining a situation (Dahl, et al., 2001; Taylor & Schneider, 1989). In the embodiment context, Niedenthal et al. (2005) states "just thinking about an object produces embodied states as if the object were actually there" (p. 187). Gangi, Sherman, and White (2011) show that participants that watched a video while imagining themselves flossing showed better flossing skills one week later. Related to temperature, imagined warmth or coldness (i.e., thinking about holding a cup of hot/iced coffee) showed similar embodied effects as previous studies, but only if the event was imagined from an egocentric (first-person) perspective (Macrae et al., 2013). These results are supported by Lorey and colleagues (2009), who found via neuroimaging that greater activity occurred in the sensorimotor regions of the brain when people imagined events and actions from a first-person, rather than third-person, perspective.

In line with this extant research, we suggest that eliminating the effects of experienced regret may not be limited to situations where a physical product is available; merely imagining a consumption experience may mitigate the effects of experienced regret. Specifically, we investigate whether marketing promotions (advertisements) that feature attributes related to temperature can be a source for mitigating regret stemming from action. This notion builds on the emerging fields of sensory marketing (Elder & Krishna, 2012; Krishna, 2012) and embodied cognition (Barsalou, 1999; Wilson-Mendenhall et al., 2011), which suggests that consumption-based objects or materials can be an effective regulator of consumption-related emotions (i.e., regret). Thus, we propose:

H2: After experiencing action regret, individuals who view an advertisement for a cold-climate vacation will experience less regret than those who view and advertisement for a warm-climate vacation.

3.6 Overview of Studies

Here, we report four experiments that investigate the link among regret, temperature, self-conscious emotions, and subsequent consumer behavior. In experiments 1-3 (H1a and H1b), we investigate whether individuals seek to self-regulate their experienced action regret via consumptive objects (i.e., hot or cold drink) and whether this effect is mediated by self-conscious emotions. Finally, in experiment 4 (H2), we use consumption-based materials (advertisements that are manipulated for temperature) to investigate whether imagined embodied states can ameliorate experienced regret.

3.7 Experiment 1

In experiment 1, we investigate whether people will attempt to regulate their experienced action regret through consumptive objects and consequently develop stronger preferences for products that are capable of doing so (e.g., cold drinks). We seek to demonstrate that consumptive objects or experiences can be used as a regulatory strategy to ameliorate physiological imbalance that results from the experience of self-conscious emotion following action regret.

Procedure

One hundred sixty-five individuals completed an online experiment via Amazon Mechanical Turk (Buhrmester, Kwang, & Gosling, 2011). Due to failed attention checks and missing data, eight responses were eliminated, leaving 157 participants (66.7% male, mean age = 31.66). Participants were randomly assigned to one of two conditions: participants were either instructed to recall a situation where they experienced action regret deeply or where they experienced inaction regret deeply. Participants were then

asked to report their perceptions of self-conscious emotions. Specifically, participants were asked whether they felt the four negative self-conscious emotions as reported in Kedia & Hilton (2011): shame, remorse, embarrassment, and guilt. The four items showed strong reliability ($\alpha = .87$) and were averaged into a single self-conscious emotion construct. Perceptions of other emotions (anger, irritation, frustration, disgust, contemplation, and concern) were also collected. Next, participants were provided with 10 food/drink items to consider, and were instructed to click on the items they currently desired using the computer mouse. Five of the presented items were hot items (hot coffee, hot chocolate, hot green tea, apple cider, and soup) while the other five items were cold items (iced latte, ice cream, cold Gatorade, a soft drink, and cold beer). After completing the choice task, participants completed a number of demographic items, were debriefed, and then released.

Dependent Variables. For the dependent measure, a preference index was created (see Lee et al. 2014) by calculating the difference between the number of hot items chosen and cold items chosen and divided by the total number of items chosen. A zero indicates an equal number of hot and cold items chosen (neutral preference), a positive number indicates a preference for hot items, and a negative number indicates a preference for cold items. Participants on average selected a total of 2.38 items, comprising of an average 1.40 hot items and .98 cold items.

Results

Consistent with our theorizing and the results of Kedia and Hilton (2011), our results demonstrated a significant effect of condition on self-conscious emotions (i.e., shame, remorse, embarrassment, and guilt; $t(158) = 3.73$, $p < .001$, $\eta^2_p = .08$), with action regret resulting in stronger feelings of self-conscious emotions ($M = 4.87$, $SD = 1.65$) compared to inaction regret ($M = 3.90$, $SD = 1.62$), but not for other felt emotions. The only exceptions were for disgust and concern, but these emotions did not predict preferences for cold/hot drinks (for a list of all emotion descriptive statistics, see table 1. Supporting H1, mediation analysis (Model 4, Hayes, 2013) with a bootstrapping procedure (5,000 resamples) revealed the predicted indirect effect; the feeling of self-conscious emotions

mediated the influence of the regret condition (1 = Action Regret, 2 = Inaction Regret) on preference for cold versus hot products (β = .078, (95% CI: [.018, .187], κ^2 = .059). In short, individuals in the action regret condition reported feeling more self-conscious emotions and subsequently preferred more cold items, ostensibly because they longed to achieve a temperature balance through self-regulatory decisions.

Moreover, while there were also significant differences for the emotions disgust and concern between the action and inaction regret conditions, neither of those emotions predicted preferences for cold vs. hot drinks (β = .029, 95% CI [-.02, .11, κ^2 = .005] and β = .027, 95% CI [-.02, .07], κ^2 = .026 respectively). For a summary table of all indirect effects, see table 2. In addition, to rule out the argument that our effect was driven by differences in preference of hot or of items in general, we computed mediation analysis with self-conscious emotions on cold, hot and total items independently. As predicted, mediation was found for cold items only (β = -.12, 95% CI [-.27, -.02], κ^2 = .052) but not for hot items (β = .07, 95% CI [-.03, .24], κ^2 = .031) or total items (β = -.041, 95% CI [-.25, .13], κ^2 = .013).

Experiment 1 Discussion

The results of experiment 1 support H1. Following the regret manipulation, participants who experienced action regret reported feeling more self-conscious emotions (e.g. guilt and remorse) and subsequently preferred cold items to hot items. Additionally, this relationship was mediated by the intensity of those self-conscious emotions. These results further bolster the argument that experiencing regret, similar to other sources of emotional warmth or cold (Bargh & Shalev, 2012; IJzerman et al., 2012), can lead to the physiological experience of cold versus warm and a desire to ameliorate that feeling via consumption behavior. Further, these results discount the notion that embodied effects are simply a consequence of increased accessibility: if this was the case, then we would expect to observe a preference for warm or hot foods. Finally, because individuals appear to be attempting to regulate their physiological temperature by preferring cold versus warm foods, we suggest that experiencing psychological heat resulting from experiencing regret can affect product perceptions and desirability.

However, the results of experiment 1 do not rule out the possibility that increased arousal or the intensity of the emotion of regret due to situations of action regret, rather than the self-conscious emotions, are the driving force behind the preference for cold (versus hot) drinks. It is possible, rather than self-conscious emotions affecting perceptions of warmth and subsequent preference for cold, that our effect is driven simply by the fact that action regret can be a more intense emotion and may subsequently result in greater arousal or regret. To rule out this possibility, experiment 2 was designed to assess the intensity of regret and arousal level and determine whether they may be competing explanations.

3.8 Experiment 2

Procedure

One hundred seventeen participants (53% male, mean age = 34.78) were recruited via Amazon Mechanical Turk. Eight participants were excluded for failed attention checks and missing data. Participants were assigned to a 2 (Regret type: action/inaction) x 2 (Tea preference: hot/cold) between-subjects design. As in the previous experiment, regret was manipulated by asking participants to "recall a time when you experienced a lot of regret as a result of your own actions/decisions", while in the inaction regret condition participants were asked, "Recall a time when you experienced a lot of regret as a result of failing to act, (e.g., missed opportunities)". As in study 1, participants were then asked to type a description of their experience in a text box and then report their current emotions regarding the experience (Kedia and Hilton, 2011). As in experiment 1, participants were asked whether they felt shame, remorse, embarrassment, and guilt along with a number of other emotions (anger, irritation, frustration, etc.). In addition, to rule out the effect of arousal and regret, this experiment also employed a 10-item ($\alpha = .85$) perceived arousal questionnaire (Anderson, Anderson, & Deuser, 1996; Anderson, Deuser, & Deneve, 1995) and a single-item regret question (how much do you regret this experience?). Participants were then shown an image of a loose leaf tea product manipulated for temperature. In the hot tea preference condition, participants were told that the tea was best served hot, while in the cold tea preference condition, participants were told the tea was best served cold (Lee, et al., 2014). Participants were then asked how much they

currently desired the tea (3 item scale, e.g., “How desirable is the tea?” 1 = not at all desirable, 7 = very desirable, α = .97).

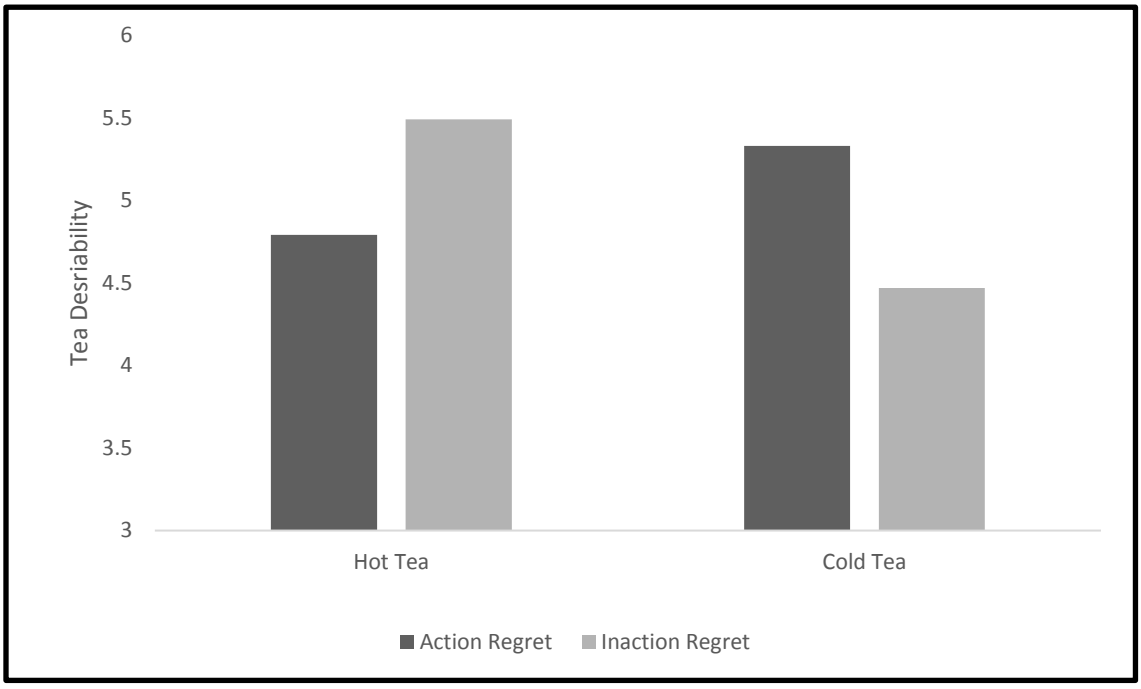
Results

As in Experiment 1, recalling an experience action regret resulted in significantly greater self-conscious emotions (M = 4.84, SD = 1.69) compared to recalling an experience of inaction regret (M = 3.43, SD = 1.81; $t(115) = 4.34$, $p < .001$, $\eta^2_p = .14$). However, there were no significant differences on arousal between action regret (M = 4.41, SD = .67) and inaction regret (M = 4.47, SD = .81; $t(115) = -.37$, p =.72,). Similarly, there were no significant effects for the other, non-self-conscious emotions (e.g. anger) or the emotion of regret (M_{action}= 5.66, SD_{action} = 1.80 vs. $M_{inaction}$ = 5.53, $SD_{inaction}$ = 1.67, $t(115) = .40$, p =.69). Please refer to table 3 and 4 for details.

An ANOVA demonstrated the predicted interaction of regret type on tea preference ($F(1, 113) = 7.74$, p =.006, $\eta^2_p = .06$). Simple main effects revealed that participants preferred the cold drink more after experiencing action regret (M = 5.33, SD = 1.27) versus inaction regret (M = 4.47, SD = 1.97; p =.03), whereas participants marginally preferred the warm drink more after inaction regret (M = 5.49. SD = 1.56) compared to action regret (M = 4.79, SD = 1.56; p =.08). See Figure 2 for a graphical representation of these results.

Finally, moderated mediation analysis (Hayes, 2013, Model 14) with a bootstrapping procedure (5,000 resamples) revealed the same mediation pattern as described in experiment 1. Specifically, the relationship between regret condition (1 = Action Regret, 2 = Inaction Regret) and preference for tea was significantly mediated through self-conscious emotions for cold tea (β = -.41, (95% CI: [-.963, -.061]), but not for hot tea, (β = -.16, (95% CI: [-.460, .086]). That is, after recalling an instance of action regret, people reported more self-conscious emotions and subsequently preferred the cold tea, but not the hot tea. Further, neither level of arousal, regret, or any of the non-self-conscious emotions (See Table 5) mediated the aforementioned relationship. The one exception was disgust; however, this effect disappeared when controlling for self-conscious emotions (β = -.04, (95% CI: [-.251 .087]).

Figure 2: Graphical representation of Experiment 3 results



Experiment 2 Discussion

The results of experiment 2 further support H1. As in experiment 1, participants who recalled an experience of action regret felt more self-conscious emotions and subsequently preferred cold items to hot items. In addition, experiment 2 ruled out the potential effect of arousal and overall regret. Participants did not feel more regret or greater arousal from recalling an experience that lead to action versus inaction regret.

However, the results of the first two experiments have not yet established the mechanism by which self-conscious feelings due to experiencing action regret affects preferences for cold drinks. We suggest that preference for colder drinks may be due to people feeling literally warmer as a result of feeling these self-conscious emotions. Specifically, we argue that experiencing self-conscious emotions after action regret leads to greater perceptions of warmth, which in turn predicts the consumption of cold vs. warm drinks. Thus, experiment 3 was designed to test the mechanisms.

3.9 Experiment 3

Procedure

One hundred forty participants were recruited via Amazon Mechanical Turk. We eliminated 19 responses due to failed attention checks and incomplete responses, leaving a total of 121. As in experiment 2, participants were asked to either recall an instance of action regret or inaction regret. In order to better control for differences in time, we asked participants to recall an instance of regret in the past 2 weeks. Following the regret manipulation, participants were asked the extent to which they felt various emotions, regret, and level of arousal (10 questions, $\alpha = .75$) using the same scales as experiment 3. Different from experiment 2, the regret measure was changed to a more robust, 4-item regret scale (Lee & Cotte, 2009; $\alpha = .80$). Next, participants were asked whether recalling their experience made them feel more flush and warm (e.g. Writing about the experience made me feel 'flush in the face,' and Writing about the experience made me warmer, 1 = Strongly Disagree, 7 = Strongly Agree, 3 questions, $\alpha = .83$) and were aggregated into a

single ‘flushness’ construct. Finally, participants completed the same tea desirability measure as in experiment 2 (α = .98).

Results

Consistent with experiments 1 and 2, recalling and the experience of action regret resulted in feeling significantly more self-conscious emotions (M = 4.89, SD = 1.31) compared to inaction regret (M = 4.12, SD = 1.71) $t(119) = 2.79$, p =.006, $\eta^2_p = .06$). Further, we found no effect on the multi-item score of regret (M_{action} = 4.61, SD = 1.01 versus $M_{Inaction}$ = 4.37, SD = 1.16; $t(119) = 1.23$, p =.22) or arousal ($t(119) = -1.70$, p =.09, M_{action} = 4.13, SD = .44 vs. $M_{Inaction}$ = 4.28, SD = .47). While a few main effects related to the other, non-self-conscious emotions were obtained, these effects disappeared when we controlled for self-conscious emotions. Regressing all of the emotion measures on the measure of flushness revealed that only the self-conscious emotions (shame, guilt, embarrassment, remorse) significantly predicted flushness (β = .32, p =.001, all other p’s > .15). As one might expect, anger was also correlated with flushness, r = .22, p = .02. However, it was also highly correlated with self-conscious emotions r = .43, p < .001. When both anger and self-conscious emotions were regressed, only the self-conscious emotions significantly predicted flushness (β = .29, p = .003), while anger did not (β = .09, p = .34). Importantly, the emotion of regret did not predict flushness, (β = .093, p = .31) nor did level of arousal (β = .091, p = .32), providing further evidence that the feelings of warmth were a function of self-conscious emotions and not other emotional states. Please see table 6 and 7 for details.

A path analysis was computed on our full model. The model showed strong fit (χ^2 = 10.94, CFI = .97, RMSEA = .028, TLI = .96). As a point of comparison, substituting self-conscious emotions with arousal (χ^2 = 16.92, CFI = .71, RMSEA = .076, TLI = .57), anger (χ^2 = 16.05, CFI = .82, RMSEA = .071, TLI = .72) or regret (χ^2 = 14.78, CFI = .77, RMSEA = .063, TLI = .65), all showed significantly worse fit. Lastly, there was a significant flushness by tea-condition interaction on desirability, β = .20, p =.018. Examining the interaction reveals an effect of flushness for cold tea ($t(119) = 4.08$, p < .001), but no effect for hot tea ($t(119) = 1.21$, p =.22). To provide additional support for

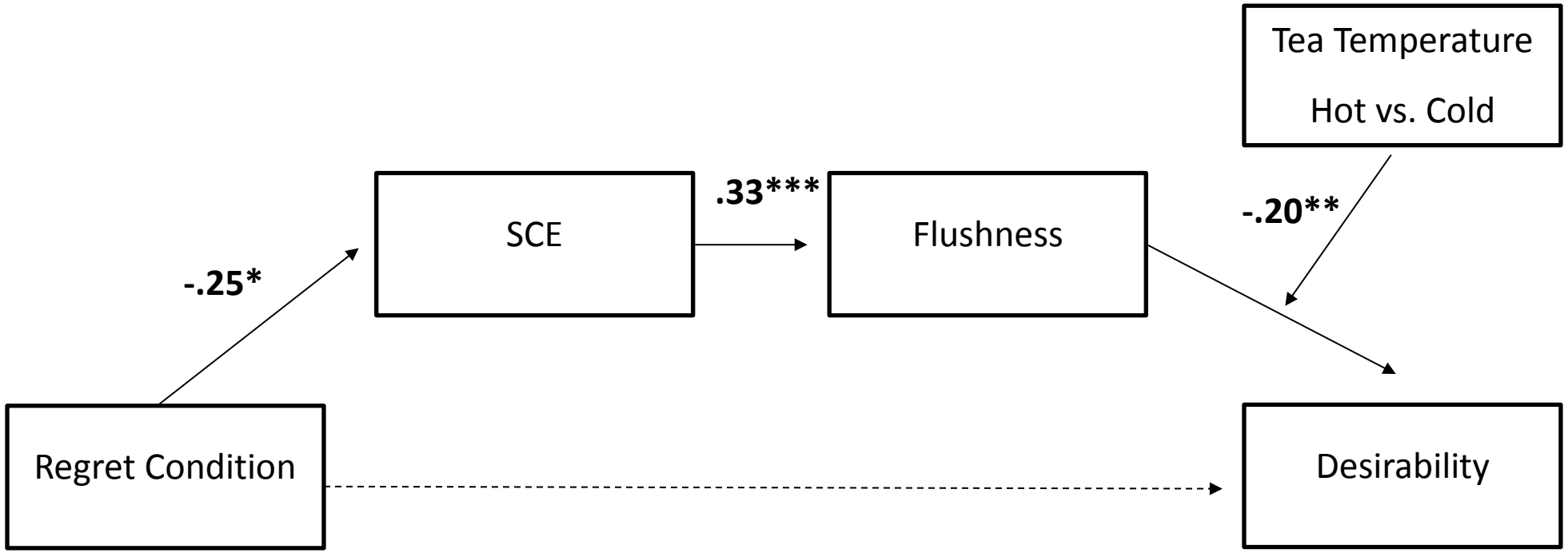
our model, we also computed a moderated mediation analysis (Hayes, 2013, Model 14) with 5000 bootstraps assessing the link between self-conscious emotions to preference for cold versus hot tea. Consistent with our theorizing, the effect of self-conscious emotions on drink preference was mediated by feelings of flushness for cold drinks (β = .187, SE = .07, [95% CI: .08, .35]), but not for hot drinks (β = .05, SE = .04, [95% CI: -.02, .15]). Please see Figure 3 for the theoretical model along with the path analysis.

Experiment 3 Discussion

The results of experiment 3 provide additional evidence for the relationship between feeling self-conscious emotions due to experiencing action regret and consumption preferences. Specifically, individuals who experience action regret experience greater self-conscious emotions which in turn lead to greater feelings of warmth (flushness) and subsequently desire for colder drinks. This is an important finding as it shows the process mechanism that underlies the regret-consumption regulatory link.

In the next experiment, we test hypothesis 2 by investigating whether the effects of experiencing regret can be mitigated via imagined experience. Previous research suggests that imagining warmth or coldness (i.e., thinking about holding a cup of hot/iced coffee) can result in embodied responses when an event was imagined from an egocentric (first-person) perspective (Macrae, et al., 2013). In line with this notion, we suggest that the effects of experienced regret may not be limited to situations where a physical product is available. We believe merely imagining a consumption experience can mitigate the effects of experienced regret. Specifically, we investigate whether marketing promotions (advertisements) that feature attributes related to temperature can be a source for mitigating action regret. This notion builds on the emerging fields of sensory marketing (Elder & Krishna, 2012; Krishna, 2012) and embodied cognition (Barsalou, 1999; Wilson-Mendenhall, et al., 2011), which suggests that consumption-based objects or materials can be an effective regulator of consumption-related emotions (i.e., regret).

Figure 3: Theoretical framework and path analysis



Note: SCE = Self-Conscious Emotions. Dotted line indicates non-significant paths

3.10 Experiment 4

Procedure

One hundred thirty-seven participants completed an online experiment via Amazon Mechanical Turk. Eighteen participants were eliminated due to incomplete responses or failing the attention check, leaving a final tally of 119 participants (63.9% male, mean age = 29.76). Participants were assigned to a 2 (Regret: action / inaction) x 2 (Advertisement temperature: winter / summer) between subjects design. Regret was manipulated using a stock-choice manipulation. A pretest (n = 52) confirmed that individuals felt considerably more self-conscious emotions after a situation of action regret (M = 3.28, SD = 1.90) compared to inaction regret (M = 1.79, SD = 1.06). $t(50)$ = 3.61, p = .001).

Each participant was provided with information about a fictitious pharmaceutical stock (Verap Pharmaceuticals, current stock price $2.50). Participants had the option to invest or not invest in the stock. To induce action regret, participants who invested in the stock were later informed that the stock price dropped by to $1.25 (a 50% loss on their investment). To induce inaction regret, participants who did not invest in the stock were later informed that the stock price rose to $3.75 (a 50% gain on their investment). 53.8% of participants (n = 64) chose to invest and experienced action regret, while 46.2% (n = 55) chose not to invest and experienced inaction regret.

Following the regret manipulation, participants were instructed to review an advertisement for a Royal Caribbean cruise vacation. The advertisements were manipulated such that half of the participants viewed an ad promoting an Alaskan adventure, while the other half viewed an ad that was promoting a Caribbean adventure. Participants were then instructed to imagine themselves on the cruise, and then asked questions about what it would be like to be on this particular vacation. After imagining themselves on the cruise, participants were asked to estimate the temperature (in Fahrenheit) of the vacation's location. Immediately following these questions, participants were instructed to complete a four-item seven-point Likert regret scale

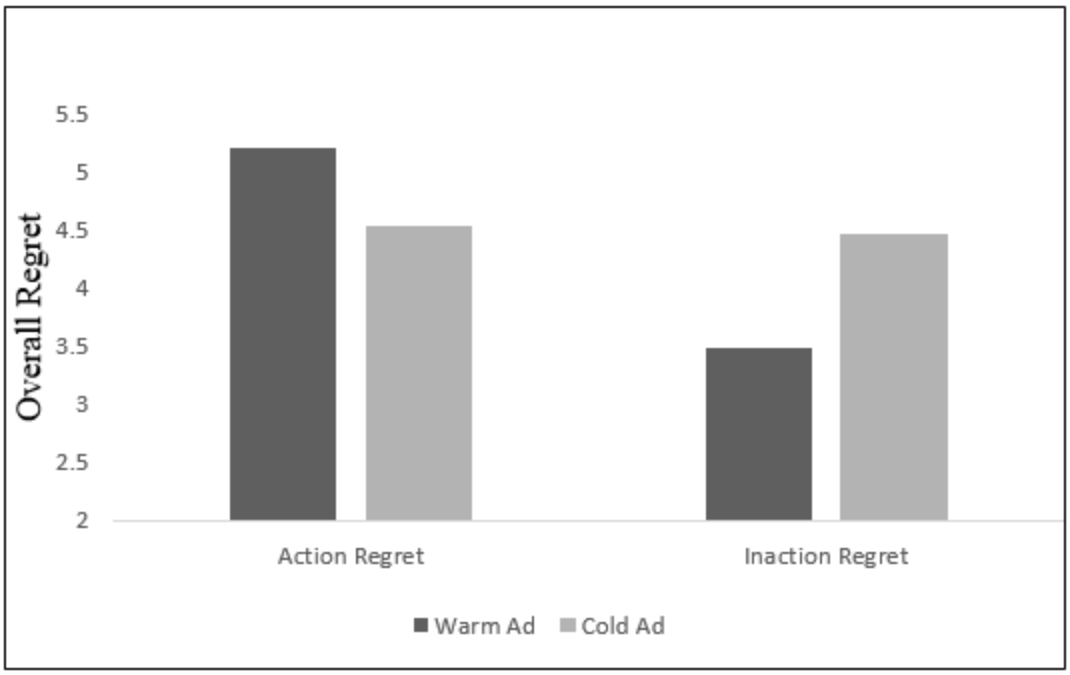
(regret due to foregone alternatives; Lee and Cotte 2009) regarding the stock choice (Verap) that they have made earlier. The scale was anchored with strongly disagree and strongly agree. Sample items include, "I regret the choice I made" and "I should have chosen differently than the one I decided" ($\alpha = .92$). In addition to these questions, we collected demographic variables along with their happiness; however, these variables did not influence the overall results and thus are omitted from final analysis. The advertisements are included in the appendix.

Results. Analysis of the temperature estimation measure revealed that participants in the Caribbean advertisement condition estimated the temperature to be higher than people in the Alaska advertisement condition ($M_{Caribbean} = 67.38$ °F versus $M_{Alaska} = 30.18$ °F, $t(115) = 7.90$, $p < .001$). This result served as a manipulation check. Supporting hypotheses 3, ANOVA analysis revealed the predicted interaction ($F(1, 116) = 9.92$, $p < .01$, $\eta^2_p = .08$). Simple effects revealed that participants experiencing action regret experienced less regret after observing the Alaskan cruise advertisement than the Caribbean cruise advertisement ($M_{Alaska} = 4.53$; $M_{Caribbean} = 5.21$; $F(1,116) = 3.64$ $p = .06$). Interestingly, simple effects revealed that participants experiencing inaction regret experienced less regret after observing the Caribbean cruise advertisement compared to those who observed the Alaskan cruise advertisement ($M_{Caribbean} = 3.49$ vs. $M_{Alaska} = 4.46$; $F(1,116) = 6.30$, $p < .05$). Finally, consistent with prior studies on the temporal pattern of regret (Gilovich & Medvec, 1995), a main effect of type of regret obtained, such that people regretted action regret more than inaction regret (at least in the short term; $F(1,116) = 11.70$, $p < .01$, $\eta^2_p = .08$). Figure 4 provides a graphical representation of these results.

Experiment 4 Discussion

The results of experiment 4 support hypotheses H2. Following the action regret manipulation, participants who viewed an advertisement that promoted a cold-climate destination reported feeling less regret than those who viewed an advertisement that promoted a warm-climate destination. As noted, the main of effect of regret in this study is consistent with prior research in which situations of action regret tend to elicit greater

Figure 4: Graphical representation of Experiment 4 results



regret in the short-term but not in the long-term (Gilovich & Medvec, 1995; Kahneman & Tversky, 1982). Counterfactual thoughts are easier to generate following an action, but also prompt greater dissonance reducing strategies (see Gilovich & Medvec, 1995 for a review). Whereas Experiment 1, 2, and 3 employed a recall task which measured the regret of events that happened in the past, this study differed in that it measured regret almost immediately after a decision was made.

Interestingly, those participants who experienced inaction regret and subsequently viewed an advertisement that promoted a warm-climate destination reported less regret than those participants who viewed an advertisement that promoted a cold-climate destination. Part of this reason may be that a warm cruise is simply more relaxing and thus more calming than a cold cruise. This is consistent with previous research that suggests that imagining an experience is can be similar to an actual experience (Dahl, et al., 2001). Overall, we find that imagining a consumptive experience leads to self-regulatory behavior, rather than the effects reported by Macrae et al. (2013). Thus, we believe that this is the first time that imagining a particular consumptive experience via advertising has been shown to alleviate an experience of an emotion.

3.11 General Discussion

In summary, we suggest that experiencing regret induces a change in psychological temperature, motivating individuals to ameliorate that change via interaction with consumptive objects that are perceived to be physically or psychologically opposite in temperature. We find that action regret induces self-conscious emotions which in turn create warmth (flushness) that leads to desire for colder drinks. Furthermore, we find that promotional materials, such as advertisements that represent warm or cold climates or beverages that can be served either hot or cold, can serve as a source for temperature mitigation and regret reduction. Further, we contribute to our understanding of the mechanisms underlying embodied cognition effects. Although other research has examined the role of construct accessibility (e.g., Lee & Schwarz, 2012), we demonstrate that some embodied effects are the result of regulatory behaviors that are attempts to achieve physiological balance. One might wonder why our results lead to compensatory

and not an assimilation effect. Recent research (Zhang & Risen, 2014; Zhang, Risen, & Hosey, 2014) has demonstrated that embodied effects can result in goal activation. Specifically, when an unpleasant state is activated, individuals are motivated to engage in behaviors that undo that physical or psychological state. Similarly, we argue that just as an individual will seek to regulate their temperature by desiring to cool off when they are too warm (e.g., homeostasis, see Benzinger, 1969), individuals will desire products that are opposite in perceived temperature to psychologically "cool off" after the unpleasant experience of regret.

Given that emotional responses to experiencing action regret are negative (Gilovich & Medvec, 1995), we posit that the motivation to regulate is due to a desire to alleviate a negative emotional state. Research has shown that people are motivated to seek remedies to reduce the negative emotions that they are feeling (Cooper et al., 1995). Thus, it is reasonable to believe that regulatory behavior observed here is a response to people's desire to reduce their regretful emotion. If one was to experience a positive emotion (e.g., joy), it is unlikely that they will employ such strategies to regulate their positive state. These behaviors also coincide with research on compensatory consumption. Indeed, prior research has demonstrated that individuals attempt to use products to "fill their emotional gap". For example, individuals made to feel powerless seek products that help them maintain or enhance their status (Rucker & Galinsky, 2008). We contribute to this domain of literature by demonstrating that such regulatory compensatory effects can be embodied in nature. To our knowledge, no research to date has examined how regret might affect physical perceptions of temperature or how the physiological response to the cognitive emotion of regret might affect subsequent consumptive behavior, and whether marketing efforts (i.e., advertisements) might mitigate the effects of regret.

More importantly, we reveal that action regret can be mitigated through getting people to imagine a cool temperature setting via advertisements. This parallels the findings of Strack, Martin, and Strepper (1988) who showed that a cartoon comic was perceived funnier when the viewer's face was able to respond with a smile vs. when the viewer was unable to smile due to interference (i.e., holding a pen in the mouth). Further, interrelated research demonstrates that Botox injections (hindering muscle movement of the face)

were associated with reduced affective experiences and impaired processing of emotional words (Davis et al., 2010; Havas et al., 2010). Taken together, given that emotional responses are associated with certain physical experiences, impairing the bodily experience would subsequently impair individual's ability to realize their felt emotion. Hence, when we asked individuals to imagine experiencing a vacation in a location known to be opposite in physical temperature to what they were feeling emotionally, we believe it impaired their emotional response to experience regret.

Finally, although this paper presents novel evidence linking emotions to an embodied physiological process and the first evidence demonstrating an embodied element of regret, it does lead us to an interesting inquiry: if feelings of regret guide us toward more positive behavior in the future, why would ameliorating the effects of regret via embodied methods be adaptive? The resolution to this inquiry might be that we as humans need to "wipe the slate clean" of our regret, through whatever means available - once encoded into the memory of a regretted experience, there is no more need for a moment-to-moment reminder of one's negative behavior. In this sense, embodied responses such as those described here are just one of any number of mechanisms for achieving this. Moreover, individuals who are unable to move on from regret may exhibit a number of mental health issues. For example, past research has demonstrated a connection between regret and both anxiety and depression (Roese et al., 2009). In this instance, we suggest that using temperature may provide an important regulatory mechanism for assisting with these types of health concerns and improving people's overall well-being.

Understanding why consumers feel regret is critical to marketers as it is part of their objective to minimize the negative emotion experienced by their customers. Here, we provide a simple solution for businesses to help ameliorate the effects of consumer regret. If people are experiencing action regret, a customer service attendant can offer a cold drink to subtly mitigate their negative emotion. Finally, companies trying to sell 'risky' products (e.g. one that may elicit action regret) would likely benefit from keeping the store a little cooler or offering colder drinks as samples. Exploring the link between risk and temperature may be a fruitful investigation in the future, especially in retail settings.

3.12 Limitations and Future Directions

With respect to limitations, it is important to acknowledge that the temperature measurements employed in the current research are *perceived*, rather than objectively measured. Given that we did not provide thermometers to our participants, it is difficult to assume that their bodily temperature was affected by our manipulation of regret. Thus, future research should incorporate people's actual bodily temperature to see whether there is a true connection between regret and bodily temperature. Additionally, in experiment 4, we acknowledge that it is possible that the thought of an Alaskan adventure may be unpleasant (compared to the thought of a Caribbean adventure) and that the intensity of the emotion provoked may differ as a result. Moreover, it may be more appropriate to test this theory in retail settings to see how retailer can use advertisements to reduce the level of regret that individuals may experience from a purchase.

We believe that the embodied phenomenon discovered in this research is not just limited to regret. Future research may benefit from investigating regulatory mechanisms in other negatively-laden emotions (i.e., anger, sadness, shame, fear, depression). Given that our research shows that products or ads can mitigate people's level of regret, it may be a worthwhile endeavor to investigate whether physiological remedies (e.g., hot/cold drink) can also mitigate psychological discrepancies that arise from other negative emotions. Hence, researchers are encouraged to further explore this connection to assist marketers in alleviating the negative emotions experienced by consumers.

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Table 1: Descriptive statistics for emotions felt for action vs. inaction regret

Emotion	Condition	Mean	SD
*Guilt**	*Action Regret*	*4.90*	*1.972*
	Inaction Regret	*3.75*	*2.054*
*Embarrassment**	*Action Regret*	*4.74*	*1.836*
	Inaction Regret	*3.56*	*2.048*
*Shame**	*Action Regret*	*4.68*	*2.036*
	Inaction Regret	*3.55*	*2.068*
*Remorse**	*Action Regret*	*5.33*	*1.732*
	Inaction Regret	*4.72*	*1.928*
Anger	Action Regret	3.30	1.806
	Inaction Regret	3.43	2.008
Disgust*	Action Regret	3.65	1.944
	Inaction Regret	2.79	1.862
Frustration	Action Regret	4.21	1.849
	Inaction Regret	3.97	2.020
Irritation	Action Regret	3.91	1.811

	Inaction Regret	3.60	2.086
Contemplation	Action Regret	3.93	1.766
	Inaction Regret	3.56	1.810
Wistfulness	Action Regret	3.23	1.886
	Inaction Regret	3.53	1.941
Concern*	Action Regret	3.83	1.948
	Inaction Regret	3.01	1.805
Surprise	Action Regret	2.54	1.525
	Inaction Regret	2.21	1.339

` * $p < .05$

Table 2: Bootstrapping mediation analyses (Experiment 2)

Emotion	B	SE	95% CI
Self-Conscious Emotions (Aggregate)	**.078**	**.038**	**.021, .174**
Guilt	*.078*	*.041*	*.017, .186*
Embarrassment	*.084*	*.041*	*.024, .191*
Shame	*.045*	*.033*	*.003, .135*
Remorse	*.021*	*.022*	*-.008. .083*
Anger	.001	.011	-.016, .035
Disgust	.029	.034	-.028, .111
Frustration	.004	.02	-.033, .054
Irritation	.006	.014	-.010, .058
Contemplation	-.008	.019	-.065, .016
Wistfulness	-.005	.009	-.035, .005
Concern	.027	.029	-.019, .100
Surprise	.014	.020	-.012, .073

Table 3: Descriptive statistics for emotions felt for action vs. inaction regret

Emotion	Condition	Mean	SD
Regret	Action Regret	5.66	1.80
	Inaction Regret	5.53	1.67
*Guilt**	*Action Regret*	*4.73*	*2.05*
	Inaction Regret	*3.28*	*2.15*
*Embarrassment**	*Action Regret*	*4.77*	*2.00*
	Inaction Regret	*3.15*	*2.11*
*Shame**	*Action Regret*	*4.69*	*2.03*
	Inaction Regret	*2.91*	*2.11*
*Remorse**	*Action Regret*	*5.19*	*1.79*
	Inaction Regret	*4.40*	*2.09*
Anger	Action Regret	3.75	2.08
	Inaction Regret	3.36	2.04
Disgust*	Action Regret	4.02	2.01
	Inaction Regret	2.91	1.97
Frustration	Action Regret	4.63	2.05

	Inaction Regret	4.17	1.95
Irritation	Action Regret	4.34	2.08
	Inaction Regret	3.87	1.95
Contemplation	Action Regret	3.86	1.62
	Inaction Regret	3.34	1.95
Longing	Action Regret	3.42	1.97
	Inaction Regret	3.79	1.92
Surprise*	Action Regret	2.56	1.55
	Inaction Regret	1.92	1.34
Concern	Action Regret	3.53	1.98
	Inaction Regret	2.92	1.94

* $p < .05$

Table 4: Descriptive statistics for arousal felt for action vs. inaction regret

Arousal	Condition	Mean	SD
Active	Action Regret	2.83	1.18
	Inaction Regret	2.77	1.32
Drowsy	Action Regret	6.17	0.94
	Inaction Regret	6.30	1.03
Lively	Action Regret	2.66	1.17
	Inaction Regret	2.60	1.34
Exhausted	Action Regret	6.16	1.07
	Inaction Regret	6.23	1.10
Sleepy	Action Regret	6.30	1.02
	Inaction Regret	6.40	0.93
Vigorous	Action Regret	2.22	1.15
	Inaction Regret	2.32	1.31

Alert	Action Regret	3.14	1.18
	Inaction Regret	3.36	1.24
Dull	Action Regret	6.34	0.91
	Inaction Regret	6.48	0.87
Fatigued	Action Regret	6.25	0.93
	Inaction Regret	6.13	1.24
Powerful	Action Regret	2.11	1.16
	Inaction Regret	2.13	1.30

* $p < .05$

Table 5: Mediation Analyses for Experiment 3

Emotion	Tea Type	β	SE	95% CI
Self-Conscious Emotions (Aggregate)	**Hot**	**-.16**	**.14**	**-.460, .086**
	Cold	**-.41**	**.22**	**-.963, -.061**
Regret	Hot	-.013	.043	-.139, .042
	Cold	.009	.059	-.05, .19
Guilt	*Hot*	*-.097*	*.126*	*-.383, .133*
	Cold	*-.291*	*.184*	*-.766, -.028*
Embarrassment	*Hot*	*-.108*	*.123*	*-.372, .131*
	Cold	*-.308*	*.213*	*-.84, .011*
Shame	*Hot*	*-.188*	*.151*	*-.510, .091*
	Cold	*-.418*	*.220*	*-.965, -.084*
Remorse	*Hot*	*-.062*	*.067*	*-.248, .032*
	Cold	-.209	.158	-.623,-.003
Anger	Hot	-.062	.068	-.258, .035
	Cold	-.036	.073	-.301, .034
Disgust	Hot	-.089	.100	-.327, .079

	Cold	-.363	.187	-.842, -.091
Frustration	Hot	.054	.073	-.026, .288
	Cold	-.005	.075	-.201, .112
Irritation	Hot	.034	.062	.038, .239
	Cold	.008	.081	-.151, .182
Contemplation	Hot	.043	.080	-.034, .322
	Cold	.005	.078	-.150, .175
Wistfulness	Hot	.065	.100	-.074, .330
	Cold	.023	.059	-.041, .218
Concern	Hot	.110	.095	-.002, .400
	Cold	-.201	.149	-.621, .015
Surprise	Hot	.034	.078	-.090, .233
	Cold	-.232	.14	-.641, -.041
Arousal	Hot	-.001	.037	-.090, .064
(Aggregate)	Cold	.003	.070	-.126, .169

Table 6: Descriptive statistics for emotions felt for action vs. inaction regret

Emotion	Condition	Mean	SD
Regret	Action Regret	5.61	1.01
	Inaction Regret	5.37	1.16
*Guilt**	*Action Regret*	*4.84*	*1.74*
	Inaction Regret	*4.17*	*2.12*
*Embarrassment**	*Action Regret*	*4.87*	*1.56*
	Inaction Regret	*3.57*	*2.12*
*Shame**	*Action Regret*	*4.60*	*1.83*
	Inaction Regret	*3.93*	*2.17*
*Remorse**	*Action Regret*	*5.25*	*1.63*
	Inaction Regret	*4.81*	*1.81*
Anger	Action Regret	3.99	1.85
	Inaction Regret	3.43	2.02
Disgust*	Action Regret	3.67	1.95
	Inaction Regret	2.61	1.73
Frustration	Action Regret	4.73	1.83

	Inaction Regret	4.28	1.94
Irritation*	Action Regret	4.63	1.74
	Inaction Regret	3.93	1.85
Contemplation*	Action Regret	4.34	1.68
	Inaction Regret	3.37	2.15
Wistfulness	Action Regret	3.58	1.73
	Inaction Regret	3.46	2.19
Concern*	Action Regret	3.99	1.75
	Inaction Regret	2.83	1.88
Surprise*	Action Regret	2.90	1.75
	Inaction Regret	2.02	1.38
Arousal	Action Regret	4.14	.44
(Aggregate)	Inaction Regret	4.28	.47

* $p < .05$

Table 7: Descriptive statistics for arousal felt for action vs. inaction regret

Emotion	Condition	Mean	SD
Active	Action Regret	2.67	1.12
	Inaction Regret	2.65	1.18
Drowsy	Action Regret	6.18	.88
	Inaction Regret	6.36	1.00
Lively	Action Regret	2.39	1.04
	Inaction Regret	2.54	1.08
Exhausted	Action Regret	6.21	.97
	Inaction Regret	6.48	.90
Sleepy	Action Regret	6.10	.97
	Inaction Regret	6.35	.97
Vigorous	Action Regret	2.00	1.06
	Inaction Regret	2.31	1.11

Alert	Action Regret	3.27	1.13
	Inaction Regret	3.50	1.08
Dull*	Action Regret	6.00	1.01
	Inaction Regret	6.41	1.00
Fatigued	Action Regret	6.12	.98
	Inaction Regret	6.22	1.06

* $p < .05$

4 Chapter 4

The Utility of Sadness:
Exploring the Consequences of Sad Consumption

4.1 Abstract

Although consumers typically spend money to maximize their happiness, they occasionally seek out experiences that invoke sadness. The current research examines the consequences underlying this paradoxical phenomenon. Across five studies the current research demonstrates that sadness, but not negative mood, results in a motivation to connect with others. Subsequently, consumers are more likely to spend time with and money on other individuals. Further, this motivation to connect with others leads to the enjoyment of sad media and a greater sense of subjective well-being.

4.2 Introduction

> "We can be afraid... or get angry, or feel pity, in general have pleasure or pain, both too much and too little, and in both ways not well; but [having these feelings] at the right times, about the right things, towards the right people, for the right end, and in the right way, is the intermediate and best condition, and proper to virtue."
>
> - Aristotle, Nicomachean Ethics

> "It seems that our entire psychical activity is bent upon procuring pleasure and avoiding pain, that it is automatically regulated by the Pleasure-Principle."
>
> - Freud, 1920/1952, p. 365

The idea that we seek pleasure and avoid pain is one of the oldest in psychology (Freud 1895/2003). Yet, consumers occasionally seek out experiences that invoke sadness. That individuals seek and enjoy sadness is not a new phenomenon. Indeed, tragedy has been one of the primary forms of entertainment since Ancient Greece. *Romeo and Juliet, Gone with the Wind,* and the movie *Titanic* are all heralded as classics, in spite of a focus on tragic events. More recently, Adele's newest single '*Hello*', a particularly sad song, broke a number of records, including the first single to sell more than one million downloads in the first week (Billboard.com, 2016). Despite this ubiquitous and paradoxical phenomenon, it is still unclear when and why we opt to consume sadness. Zillman (1985) summarizes this paradox eloquently:

> "The appeal of tragedy challenges all hedonic considerations. The proper response to tragedy should be profound sadness. If this response is characteristically made (and there is no reason to suppose that it is not), why do people elect to put themselves through such a highly noxious experience?" (pp. 238-239).

This paradox is made even more apparent when one considers that many brands invoke sadness (and subsequent happiness) in their advertising (e.g. Budweiser's 'Lost Dog' commercial that details a dog gone missing and the owner trying to find him), while research has demonstrated that such mixed emotions can lead to discomfort and less favorable brand and product attitudes (Williams & Aaker 2002; Hong & Lee 2010). Similarly, although research has demonstrated that sad news is the least likely to be shared (Berger and Milkman, 2014), sad advertisements typically top the most shared commercials from the super-bowl (Time, 2015).

While recent research has begun to explore the motivation to consume sadness, there is little work that examines why individuals may derive enjoyment from consuming media, products, and experiences that produce sadness,. This paper addresses these limitations. Specifically, this paper explores the functional effects of sadness, demonstrating that sadness, but not other negative emotions, motivates individuals to affiliate with others, increases the desire to spend time and money on these affiliated others, and increases the enjoyment of sad media and sense of subjective well-being.

4.3 Why do we feel sadness?

Functional theories of emotion suggest that the role of emotions is to allow people to respond adaptively to a specific event by modifying attention, motivation, and other mental processes (Levenson, 1994; Tooby & Cosmides 1990). For example, fear may lead to greater vigilance in uncertain situations. Thus, a related question that one might ask is why do we feel sadness at all? Although the function of sadness has been difficult to directly identify (Leary, Koch, & Hechenbleikner 2001), research on this topic has suggested that sadness can result from social loss or the failure to attain a goal (Gray, Ishii & Ambady, 2011; Carver 2006).

When individuals experience a social loss, sadness serves as a social signal to elicit sympathy (Bowlby 1981; Wolpert 2008) and to evoke compassion and greater helping behavior in others (Keltner & Kring 1998; Lazarus 1991; Gross & Levenson 1995; Hasson 2009). Sadness in infants serves as an attachment response triggered by separation and subsequently results in care from one's parents (Bell & Ainsworth 1972; Bowlby 1969). Being away from one's attachment figure, even briefly, can cause sadness in young infants, and the consistency in which a parent responds to this distress form the basis of an infant's attachment security which continues into adulthood (Bowlby 1969).

That early life experiences shape our adult behaviors has long been noted in the psychological literature. Williams, Huang and Bargh (2009) detail a process known as scaffolding, in which lower concrete bits of information in early infancy are mapped onto higher order, more abstract processes. While Williams et al. focus on the relationship between early experiences of physical warmth and learned social bonding, one could argue that the first association that infants ever learn is that feelings of sadness are associated with a caring response from their parents. The idea that sadness corresponds with social bonding parallels the work from evolutionary psychology on crying. Charles Darwin initially contended that crying was purposeless and argued that "we must look at weeping as an incidental result, as purposeless as the secretion of tears from a blow outside the eye, or as a sneeze from the retina being affected by a bright light" (Darwin, 1872, p. 175). Extant research challenges this view, suggesting that not only is crying (defined as tearful sobbing) a uniquely human trait, but that tears provide a reliable cue of sadness that results in greater perceived need for social support (Balsters et al., 2013). For example, edited pictures of crying individuals whose tears were digitally removed were rated as far less sad than unedited images, with raters reporting that those in the edited images required less social support (Provine, Krosnowski & Brocato, 2009; Balsters et al., 2013). Other research (Hasson 2009; Dissanayake 2008) has argued that crying promotes social bonding and can inhibit aggression in others. Taken together, these results suggest that sadness serves to elicit cognitive and behavioral responses that motivate individuals to affiliate with others.

4.4 Utility from Sadness

The idea that people are motivated to approach pleasure and avoid pain has a long history, dating back to the ancient Greeks and being one of basic motivational assumptions in psychology and marketing (Higgins 1997). This view, however, has been argued to be overly simplistic. Indeed, philosophers have noted that utility is more than just about pleasure and pain, but that it also encompasses 'higher pleasures' such as wisdom, values, reason, and morality (Mill, 1864; Aristotle, 1097b22–1098a20). Mill (1864) suggested that one cannot simply look at activities that bring the most pleasure, noting that "it is better to be a human being dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied. And if the fool, or the pig, are of a different opinion, it is because they only know their own side of the question" (p. 260). More recently, Chater and Loewenstein (2016) argued that our current views on utility fail to explain much of our behavior, such as the amount of time and money that we spend on making sense of our lives.

Similarly, although it has typically been assumed that an increase in negative affect leads to a decrease in positive affect, recent research has demonstrated that positive and negative affect can occur simultaneously (Andrade & Cohen, 2007; Lau-Gesk 2005). For example, Andrade and Cohen (2007) examined the consumption of fearful stimuli and demonstrated that consumption of fear was not simply the product of arousal seeking (e.g. appraising the fearful stimuli as positive) or relief seeking (e.g. seeking relief following a fearful experience). Rather, some consumers appear to be able to detach themselves from the fear, and subsequently tended to experience positive feelings, while still experiencing the fear. Although these researchers note that this does not explain why the fearful stimuli leads to positive affect or what individual differences lead consumers to seek out fear in the first place, it does provide evidence that positive and negative emotions can co-occur.

In addition, research on well-being has demonstrated that factors like self-esteem, optimism, and positive affect are important elements for human flourishing (Diener et al., 1999), other scholars have argued that a personal pursuit of happiness that is exemplified in Western culture, particularly in the United States, is not the only way to achieve this

goal (Myers 1992; Kitayama & Markus 2000). In many other cultures, for example Japan (Kitayama, Markus, & Kurokawa, 2010), happiness is derived from a focus on sympathy for and connecting with others. Thus, to 'be well' "requires an attunement between the self and the social relations that are organized and maintained by the cultural practices and meanings of a community" (Kitayama & Markus 2000, p.114). Despite a considerable amount of research that has focused on happiness, the fundamental concept of these ideas has been relatively abstract (Oishi, Graham, Kesebir & Galinha, 2013). What leads to happiness seems to differ between cultures; subsequently, other researchers have argued that the term *subjective well-being* be used for this reason (Wierzbicka 2004; Pflug 2009; Oishi 2006; Diener 1984).

Importantly, the quality of an individual's social relationships is one of the most important factors in predicting well-being. Subsequently, behavior that increases social bonds (e.g. prosocial spending) increases the wellbeing in adults and children (Hoffman et al., 2014) and this effect appears to occur cross-culturally (Aknin et al., 2013; Aknin et al., 2012). Further, consumers buying gifts for others tend to be happier than when they buy gifts for themselves (Dunn, Aknin & Norton 2008). Importantly, the brain areas involved in empathy, which are vital in building social relationships, are highly related to those involved with sadness (Eisenberg 2012); individuals watching others in pain or those who are sad, show activation in the anterior insula and anterior medial cingulate cortex, the same areas that are activated with experiencing pain or sadness themselves (Eisenberg 2012). Thus, sadness should serve as an important facilitator for motivating a desire to affiliate, building social connections, and subsequently improving well-being.

4.5 Alternative Explanations

Negative mood

Although the primary hypothesis of this research is that sadness leads individuals to connect with others, a possible alternative explanation is that the effect may be driven by negative mood and thus the motivation to improve one's mood. However, the evidence examining the link between affect and social connection is mixed, with some research noting that people are willing to affiliate, trust, and help more when in a positive mood

(Forgas & George, 2001; Baron 1997), while other research has suggested that individuals attempt to alleviate their negative mood by helping others (Cialdini et al., 1987) or by greater spending in general (Cryder, Lerner, Gross & Dahl, 2008). Thus, in the following studies specifically test this alternative explanation in order to rule out negative mood and demonstrate the unique effect of sadness.

Empathy

Empathy refers to the ability to understand, experience, and be sensitive to the mental states of others (Hodges & Klein, 2001; Eisenberg & Miller, 1987) and can take the form of cognitive perspective taking, compassionate empathic concern, or emotional empathy. Individuals can empathize with others' sadness but also their anger or happiness. Indeed, recent research has demonstrated that empathy of others' positive emotions can lead to greater social connection (Morelli et al., 2015). Similarly, other research has argued that empathy results in greater oxytocin levels, which is associated with greater bonding, attachment, and pro-social behaviors (Barraza & Zak 2009; Barazza et al., 2015). Thus, while empathy should be positively related to social connection, the following studies explore the unique effect of sadness above and beyond any effects of empathy.

4.6 Enjoyment of Sadness

While it is unclear exactly when and why individuals desire to consume sadness, researchers have begun examining some possibilities. Six explanations have been suggested: meta-emotions and norm compatibility (Mayer & Gaschke 1988; Jager & Bartsch 2006), Eudaimonia (Oliver 2008), downward social comparison (Knobloch, Weisbach, and Zillmann 2004 Knobloch-Westerwick et al, 2012), hedonic contrast (Novemsky & Ratner 2003), catharsis (Van Den Tol & Edwards, 2011), and social connection and empathy (Hoffner & Cantor, 1991; Tannenbaum & Gaer, 1965; Zillmann, 1991). These theories and related findings are discussed in the following section.

Norm compatibility and Meta-Emotions

Meta-emotions occur when an individual appraises his or her own emotions and through regulatory processes, comes to evaluate and change it (Mayer & Gaschke 1988; Jager & Bartsch 2006; Oliver 1993; Hofer & Wirth 2012). That is, when consumers experience sadness, they may cognitively evaluate these emotions and re-appraise them as positive. Consumers tend to differ on their ability to reflect and appraise these emotions. These differences are argued to be a function of whether consumers see them as acceptable or normative, and are moderated by individual differences in emotion regulation self-efficacy (Mayer & Gaschke 1988; Hofer & Wirth 2012).

Subsequent research has provided some evidence to how normative difference can explain why consumers enjoy sadness. Hofer & Wirth (2012) demonstrated that enjoyment of sad films was mediated primarily by norm compatibility (e.g. "my feelings were appropriate with regard to the film"). Specifically, individuals found sadness to be enjoyable when they interpreted their emotions as normatively correct. For example, one may feel more comfortable after feeling sad while witnessing the pain or death of a movie's protagonist.

Like other emotions, sadness becomes socially labeled and subsequently may be subjectively interpreted, suppressed or modified (Thoits 1989; Oatley & Jenkins 1992). Thoits (1989) makes the argument that even if emotions are physiologically grounded, the subjective experience of an emotion is influenced by our cultural beliefs about them. When individuals become conscious of their emotions, they function as explanations to ourselves and to others. Violations of standard emotional norms may lead to negative affect. For example, after the death of a close loved one, happiness may be more aversive than feeling sad. However, that individuals can re-appraise sad emotions does not provide an explanation for why individuals seek them out in the first place.

Eudaimonia

Another related factor that may lead to enjoyment due to sadness is that individuals tend to draw greater insight and engage in self-reflection about life (Oliver 2008; Wirth, Hofer, & Schramm, 2012). Although a considerable amount of work on well-being focuses on a hedonic approach - attaining pleasure and avoiding pain - individuals can

also increase their well-being through a *eudaimonic* approach, which emphasizes meaning and self-realization (Ryan & Deci 2001; Waterman 1993). Dating back to Aristotle, philosophers have argued that true happiness can be found in the expression of virtue rather than the mere pursuit of pleasure. Indeed, researchers have argued that subjective well-being which focuses on life-satisfaction, positive mood and the absence of negative mood is fundamentally distinct from psychological well-being which focuses on autonomy, personal growth, self-acceptance, life purpose, mastery, and positive relatedness (Ryff & Keyes 1995; Ryff & Singer 2000; Ryan & Deci 2000).

In line with this reasoning, Oliver (2008) argued that individuals in 'tender' affective states (feelings of sympathy, kindness, etc.) tend to enjoy more dramatic movies that invoke sadness, tenderness, and romance. The author argues that these states lead to eudaimonic motivations, in which consumers sought greater meaningfulness and self-reflection. However, these conclusions do not necessarily follow from the data. Rather, the author simply suggests that these tender states may subsequently lead viewers to reflect on life and this hypothesis is not specifically tested.

Downward Social Comparison

A third argument for the consumption of sadness has been through downward social comparison. A number of studies have now looked at the concept of *Schadenfreude*, in which pleasure is the consequence from the misfortune of others (Smith et al., 2009). Although the idea that others' hardships produces pleasure may be unsettling, a number of empirical studies have demonstrated that we feel good when others fail. For example, when fans of the Red Sox see the Yankees lose they experience similar pleasure as when the Red Sox win (Cikara, Botvinick & Fiske, 2011; Hareli & Weiner 2002).

Much of this work argues that this positive affect is a function of social comparison. The understanding of our *self* is largely defined by how we compare to others (Festinger 1954). When we learn that we performed better than others, we tend to feel better about ourselves. Consequently, learning that others have done worse leads to the same outcome. Indeed, when we observe the misfortunes of others, we tend to feel better about

ourselves. Further, the lower one's self-esteem, the more pleasure one gains from seeing someone else fail (Dijk et al., 2009).

In line with these ideas, Knobloch and colleagues (Knobloch, Weisbach, and Zillmann 2004; Knobloch-Westerwick et al, 2012) demonstrated that sadness leads to greater enjoyment as a function of both greater self-focused and other-focused thoughts. Following the viewing of a shortened version of the movie Atonement (2007), those participants who felt greater sadness reflected more on their life and their relationships with others, which in turn resulted in greater enjoyment.

Hedonic Contrast

One of the views that has appeared in the marketing literature is *hedonic contrast*: an expectation to enjoy a positive experience following a negative one (Novemsky & Ratner 2003; Kahneman 1994). Some of this work has examined contrast effects with regards to variety seeking, demonstrating that individuals predict that the same experience will become less enjoyable, whereas, it in fact became more enjoyable (Kahneman & Snell 1992). Other research has found that consumers expect to enjoy positive experiences more after a negative experience. However, while consumers may have this lay theory, they tend to not experience any greater positivity after a negative experience (Novemsky & Ratner 2003).

Although hedonic contrast effects are related to the consumption of sadness, the current research is particularly concerned with consumption of sadness for its own sake. Research on hedonic contrasts has operationalized these consumption experiences by examining both positive and negative experiences (e.g. eating a disliked jelly bean and subsequently eating a liked jelly bean); whereas the current research is primarily concerned with the consumption of only the negative experience of sadness.

Catharsis

When individuals experience sadness, people can choose to suppress these emotions, re-appraise them, or express them (Gross & John 2003). The evidence for whether suppression or expression of emotions is beneficial is mixed. Some research has found

that suppressing the feeling or expression of negative emotions like sadness does not alleviate the feeling but may actually increase the experience and the associated physiological response (Gross 1998), whereas suppressing the expression of positive emotion does eliminate positive feelings (Gross and Levenson 1997). On the other hand, research exploring the expression of anger (e.g. by hitting a punching bag) has demonstrated that it may increase aggressive tendencies (Bushman 2002; Bushman, Baumeister & Stack 1999).

Similarly, recent research has argued that when individuals feel sad they may seek out sad music for cathartic self-regulatory reasons (Van Den Tol & Edwards, 2011). Research examining crying has argued that crying serves to restore both psychological and physiological homeostasis when distressed and that regulating one's tears could result in mental distress (Cornelius, 2001 Vingerhoets, 2013; Vingerhoets, Bylsma, and Rottenberg, 2009; Vingerhoets & Byslsma 2015). Lay theories suggest that people feel better after crying and 94% of popular articles recommended crying to release psychological tension (Cornelius 1986), although typically only 60-70% of individuals agree with this sentiment (Bylsma, Vingerhoets, & Rottenberg 2008). Indeed, in laboratory settings, individuals tend to feel worse after being made to cry (Rottenberg, Gross, Wilhelm, Najmi, & Gotlib 2002), although this is moderated by whether individuals receive social support (Bylsma, Vingerhoets, & Rottenberg 2008).

Social Connection

The final reason individuals may feel positive affect from consuming sadness is because sad media may provide a feeling of social bonding with others. Despite little research focused on this idea, there is literature that is consistent with it. For example, individuals with a greater ability to engage in perspective taking tend to report more sadness while watching a sad movie (Hoffner & Cantor, 1991; Tannenbaum & Gaer, 1965; Zillmann, 1991) Similarly, research has consistently shown a gender effect in which women enjoy sad movies more than men (Oliver 2008; 1993;) and also that women tend to show higher levels of empathy, which is instrumental in forming social bonds (Bimbaum, Nosanchuk,

& Croll, 1980; Broverman, Vogel, Broverman, Clarkson, & Rosenkantz, 1972; Barazza & Zak 2009).

However, many of the themes discussed above are also interpretable within this social connection view. For example, research on eudaimonia argued that a feeling of greater enjoyment when a person is sad occurs when he or she is manipulated to feel more sympathetic and kind towards other individuals (Oliver 2008). Similarly, sadness is typically normative in social loss situations such as a funeral and cross-cultural research on mourning suggests it helps to build stronger social bonds (Balk, 1997; Rosenblatt & Elde 1990; Hayden 1987). Finally, the research on catharsis is more explicit with its relation to social connection, demonstrating that crying leads to positive outcomes, only when it is moderated by social support. Taken together, although consumers may enjoy sadness for a variety of reasons, each of these reasons is qualified by greater social connection.

4.7 The current research

The current research seeks to understand the functional consequences underlying sad consumption and the subsequent utility it provides. First, it seeks to systematically explore and examine the reasons and motivations for why individuals derive enjoyment from sadness. It is hypothesized that the primary benefit underlying sadness consumption is social-connection. Second, it examines the subsequent effects of sadness as a result of this greater social connection. Specifically, consumers should seek out products and experiences that facilitate this goal. Finally, as a result of this greater social connection, consumers will enjoy sad media and feel a greater sense of subjective well-being. Taken together, the current research suggests that sadness consumption provides a motivation for greater affiliation that can serve to foster social bonding and deeper social connections.

4.8 Study 1: Open Ended Qualitative Questionnaire

The goal of the study 1 was to explore, qualitatively, reasons that people had for consuming sadness. Specifically, study 1 sought to examine to what extent individuals

report the motivations and explanations reviewed above, while also providing an opportunity to discover new consumption specific explanations. While evidence of many of these mechanisms were found, social connection emerged as a predominant theme across the participants.

Method

100 participants were recruited via Amazon's Mechanical Turk. Participants were asked open-ended questions regarding when and why they feel sad**.** Specifically, two questions were asked: "Please tell us about times in your life that you wanted to be sad?" and "Do you think there are specific times in people's lives that they are more or less likely to use products or chose to have experiences that make them feel sad? Please explain". The findings were organized into general themes and subsequently interpreted to reflect the underlying base motivations.

Specifically, this initial phase began with a hermeneutic idiographic analysis of the responses (Mick and Buhl 1992; Thompson, Pollio and Locander 1994) in which common and recurrent themes were identified. Two researchers examined the responses, both individually and collectively, for common meanings and interpretations. The psychological mechanisms (e.g. catharsis) reviewed above provided a theoretical starting point and many themes paralleled those in the literature. However, examining these responses more holistically provided the opportunity to uncover novel explanations.

Results

Some participants were adamant in opposing the experience of sadness. These participants seemingly lacked the ability to even conceive of why someone would consume sadness, suggesting that sadness is always a negative experience and an emotion to be avoided at all times. For example, some participants wrote:

> *"I really never want to be sad. I hate the feeling of sadness, it is nothing but helplessness. You can't do anything when you are sad. You just have to accept the consequence and live with it. It is horrible."*

"I never want to be sad. Who wants to be sad?"

"This is a ridiculous question as I am emotionally healthy, and do not attempt to bring negativity down on myself. Even if I am watching poor starving Africans; it is on me to not allow myself to be emotionally manipulated.

"This question is completely unintelligible to me. Want to be sad? I have no answer. I have drowned in my sorrows. Felt sorry for myself. But I did not want to be sad. I have no answer for this. I am trying to think of something....do people do this? Is tis [sic] a Canadian thing...I was sad when my uncle died a few months ago. Sad is the expected reaction, and I certainty felt it. If I was not sad, it would bother me, so in that case I guess I wanted (expected) to be sad. Everyone was sad."

As the last participant alluded, *If I was not sad, it would bother me, so in that case I guess I wanted (expected) to be sad. Everyone was sad."* while some participants' initial intuitions were to question the idea that one might want to be sad, many other participants did purport the occasional motivation to consume sadness. Participants provided a number of reasons, which generally echoed the literature. Specifically, participants provided normative/meta reasons, eudemonic, and cathartic reasons, however there was no discussion of downward social comparison or hedonic contrast. In addition, the theme of nostalgia was also evident from their responses.

However, a major meta-theme that arose was sadness in relation to social connection. That is, when participants discussed their normative, eudemonic, cathartic, or nostalgic reasons, they did so in terms that are interpretable as seeking connections with others. That is the normative, eudemonic, cathartic, and nostalgic reasons focused on sadness related to people and not sadness due to other possible sad events (e.g. favorite sports team losing). In addition, many participants mentioned that sadness was consumed explicitly to assist with social connection and a greater connection with humanity in general. In the following sections I expand on each of these ideas.

Nostalgia

As noted, nostalgia was the only major theme that was not discussed in the previous literature with relation to the motivation and enjoyment of sadness. The link between nostalgia and sadness is ambiguous. Some research (Wildschut et al., 2006; Zhou et al., 2012) demonstrated that individuals recalling nostalgia events reported more positive, but not more negative affect. However, other research has argued that nostalgia results in a mix of both with individuals reporting both happiness and sadness when recalling nostalgic events (Hepper et al., 2011). Importantly, nostalgia has also been shown to strengthen social connections (Wildschut et al, 2006; Wildschut et al. 2010), further strengthening the link between sadness and the motivation to connect with others. Within the marketing literature, researchers have noted that possessions help others establish and maintain a sense of their past (Belk 1990; 1991). Belk (1990) notes that nostalgia is typically tied to sadness and longing and typically involves emotional memory processes. These ideas are similarly exemplified by some of the participants. Specifically, participants noted that the sadness associated with certain products and experiences served to remind them and connect them with others and a connection with their past. For example, one participant discussed how a candy helped remind and connect him or her with their grandmother while another participant mentioned that he or she picks a particular flavor of ice-cream because it makes them feel connected with a friend.

> *"I buy the hard candy referred to as cinnamon discs at least once a week. I purchase them only because when I was a kid I lived with my grandma and we had these everyday. They make me feel sad because it is the only thing I can really remember from my childhood that connects me to my grandmother. She is no longer around these days."*

> *"One such example that comes to mind is attending a favorite restaurant of my Mother's. It was her favorite place to go for a treat, and when I go there, I always feel sad, again nostalgia, thinking about her and how this place made her happy. Now this also applies to her favorite pizza, favorite song, and even favorite soda. Whenever I think of any of those things, or experience them, I feel sad."*

"Occasionally, I will look at photos of my past and these will make me feel sad as they bring back memories that are sad."

Buying bagels always makes me sad because I used to get a bagel with my mother every Tuesday, and now we live too far away to do it together anymore. I still like bagels, but buying them makes me think about what I am missing and it's a little sad."

"Whenever I take a ice cream I take a particular flavor to remembering my friend, I feel sad every time and have the ice cream as my friend is sitting in front of me."

Normative and meta-emotions

As noted, when consumers experience sadness, they may cognitively evaluate these emotions and re-appraise them as positive. However, this explanation does not indicate under what situations consumers are more likely to do so. Results indicated that participants were explicit that they used sadness for functional purposes in helping them empathize and connect with others. For example, one participant suggested that sadness helped him or her connect with characters in a story, while another participant was explicit about sadness helping him or her feel connected to their grandfather who passed away.

"The only instance where I think I would desire being sad is those more harmless, insignificant types of sadness that come from watching an interesting but sad film or moment in television or in a book. For those moments you want to be able to feel sad for the characters and the situation, to better immerse yourself in the story and think about what's going on."

"*Definitely after a tragedy, like a searing break-up or the death of a loved-one. Those are times when you want to read sad stories (like the more moving parts of Game of Thrones) or listen to sad music (like practically anything by Adele). It just helps to feel someone who knows your sadness emotionally, and conveys it with a beauty that makes it grandiose."*

"Times in my life when I want to be sad are when loved ones pass away. If you weren't sad about that, then they probably didn't mean much to you. So in that case, i would hope that I'm very sad when that occurs, a very long time from now."

"When I am in a situation where I feel sad I want to feel it because its ok to feel an emotion that is negative. Then I can deal with what I am sad bout and get help and comfort from others".

"There are few times in my life that I want to be sad. I was sad when my grandfather passed away and felt that giving into my feelings was probably the best way to connect. Usually I try to power through negative feelings. However, at that time, I thought that sadness was the appropriate response."

Catharsis

Cathartic reasons also touched on social connection. Although some participants focused only on 'expelling' the sadness, other participants specifically noted that this process allows one to better cherish and appreciate family and friends. For example, one participant mentioned that sadness assisted with the grieving process resulting in better memories of a person while another participants was more explicit in that catharsis resulted in bonding.

"I tend to bottle up my emotions, until they come bursting out of me. From time to time I like to watch sad movies or listen to sad songs, in order to help keep my emotions in check."

"That's a tough one. I guess I would want to be sad when a loved one passes, because sadness is part of the grieving process, and I would like to get that out of the way and out of my system so I could get back to living a normal life, with good memories of that person."

"you purchase a sad movie or listen to sad music to bring those upsetting feelings that can linger deep in the psyche, without getting rid of some of these feelings, a person can lose their mind."

"Sad songs, sad movies where people die. I purchase and use them because it is good to cry and they make me feel better after I cry. I love to watch touching movies that make me feel sad. It makes me think about life and to cherish the moments you have her on earth with your family and friends."

"Yes. People are more sad at times than others. They seek release through catharsis. If your lover just died, you get relief by bonding with people or art items that have the same emotions or evoke the same emotions that you felt."

Eudaimonia

Sadness, to some participants, reflected an important part of the human experience. Rather than being an unpleasant affective state that these participants wanted to reject or diminish, sad experiences were associated with a greater connection to humanity in general. For example, participants discussed how they will watch a sad movie to help connect with their own humanity

"About once a year I will intentionally watch a sad movie just to keep myself human. …When I watch a sad movie, it is best if I do it with someone I love, that way I don't sli [sic] into the abyss alone for who knows how long."

"I want to be sad when something sad happens. For instance, if I experience a death of a friend or family member, I want to be sad. Sadness is a part of humanity; I do not want to be merely numb during such times."

"I have had that experience in movies. Again, sadness is a part of life and something that one may occasionally want to experience. I went in to the movie watching experience understanding it would be sad. I knew it was a great movie though and worth the sad experience and I knew the sadness would allow me to be in better touch with my humanity and with others."

Social Connection

The majority of the responses focused directly with social connection. Although this social connection ranged from facilitating a connection with others, to an appeal for greater connection, and a more generalized connection with life, humanity and the struggles of others. Relatedly, participants noted that sadness helped them empathize which facilitated this connection with others. Sad consumption was occasionally linked to consuming products or experiences that reminded them of others. However, many other responses suggested that the motivation to be sad was interconnected with the desire to connect with other individuals. Sadness tended to allow people to better understand and appreciate others' points of view, particularly when those points of view were sad themselves.

> *"A famous animator/director, Monty Oum, passed away 1 years ago. He was the creator of the popular web based show, RWBY. I am a big fan of the show and also a fan of Mr. Oum. When he passed away suddenly in 2015 I was shocked. I didn't know him personally ut [sic] I still felt the loss. I knew he was gone from my life forever. So I put on some music and spent some alone time thinking about him and what he meant to me. I wanted to mourn him in my own little way."*

> *"Yes. When i am already sad, or at times when i am feeling little to nothing. In a way, they allow me to re connect with my feelings during those times. They're invigorate empathy, compassion and caring by doing so."*

> *"I want to be sad when I see other people suffering because I want to empathize with them and understand their situation. I also feel motivated to help when I feel sad about someone's loss or a situation someone is in makes me feel sad. I think it can lead to something positive because it makes me want to do something to help the person and make things better.*

"I rarely want to be sad. Sometimes I think about a past relationship and I put on some sad music and just think about it."

Epiphenomena

The last category of responses is classified as epiphenomena – an outcome of the consumption but not a necessary driver. Rather than being motivated to consume the sadness, these participants noted that the sadness stemmed from the consumption and that it subsequently was aversive. For example, some participants noted that some of their addictive behaviors would lead them to sadness and regret.

"I purchase chewing tobacco, it makes me sad that I am a nicotine addict, but I hate the withdrawals that happen if I do not buy it..."

"I feel sad when I eat all my potato chips. I generally want more afterwards."

"I take some medicines that make me feel sad. I feel sad because they remind me of my mortality and that I probably won't get to see my kids grow up."

"Cigarette's make me feel sad. I purchase them every day even though they are super harmful for me. I cough a lot and have trouble breathing but just can't seem to quit. Whenever I go purchase a pack I feel sad knowing that I am just hurting myself even further."

These responses tended to reflect addictive consumption patterns. While consuming products that make one feel sad and negative are an interesting avenue for future research, this project is focused primarily on when and why consumers are motivated and enjoy the consumption of sadness.

Discussion

The results of the study indicate a strong instrumental function of sadness for social connection. Specifically, most of the responses tended to coincide with a desire to affiliate and connect with others. For example, responses that were associated with a nostalgia theme all represented memories of other people. If nostalgia by itself produced

sadness then one could expect references to products or experiences associated with solely with one's past, such as backpacking through Europe or a song from one's youth. However, sadness related to nostalgia tended to focus on one's connection with loved ones.

Similarly, many of the themes were explicitly focused on sadness being related to the connection with others, whether that connection be to a specific individual or to a greater connection with life. Even normative responses about sadness corresponded with empathy for others and not with other causes of sadness, such as losing a job. Individuals explicitly noted that sadness served as a catalyst to help with social connection and that the motivation to be sad or consume sadness was tied to this goal of connectedness.

Catharsis was the only theme that did not always reflect a connection with others. While some respondents noted that catharsis facilitated social connection, other respondents tended to note that sadness was good for its own sake. However, the research on catharsis and sadness is mixed, with an important moderator being social support. Indeed, Bylsma and colleagues (2008) demonstrated that comforting, understanding, and friendliness were associated with positive mental improvement following a crying episode, while anger or being ignored were negatively related.

Taken together, the results of this study suggest that sadness serves an instrumental purpose to help individuals connect with others to achieve a more positive subjective well-being. In the following studies, I explore these ideas experimentally.

4.9 **Study 2**

The first goal of study 2 was to provide initial experimental evidence that the emotion of sadness motivates individuals to connect with others. However, as noted, one potential alternative explanation is that this effect on social connection may be a product of negative mood in general. Specifically, participants may simply be seeking to improve a negative mood and be seeking social connection as a result. Indeed, other negative emotions, such as fear, seem to have similar effects (e.g. Dunn & Hoegg, 2014). Other research exploring sadness has argued that the motivation to help others is a result of

participants trying to dispel their negative mood state (Manucia, Baumann & Cialdini, 1984). Thus, study 2 was designed to examine whether sadness resulted in greater social connection over and above other emotions.

The second goal of study 2 was to explore the effect of sadness on greater social connection. However, two different effects are possible. The first is that sadness provides a motivation for greater social connection. The second is that sadness makes people feel more socially connected. The first is informed by the evidence that sadness results in behavioral tendencies that strengthen social bonds, such as witnessing crying resulting in a greater perceived need for support (Balsters et al., 2013; Gray, Ishii & Ambady, 2011). Recent research has examined why people are motivated to be angry (Tamir, Mitchell & Gross 2008; Tamir 2009; Carver & Harmon-Jones 2009). These authors suggest that individuals prefer activities that encourage anger when they were anticipating confrontation and regaining lost ground (Tamir, Mitchell & Gross 2008). However, whereas anger signals that action is needed, sadness signals that support is needed. Thus, sadness may provide the impetus for an individual to *seek out* greater social connection and through this motivation the experience greater enjoyment and subjective well-being.

However, the latter interpretation suggests that strong associations developed between sadness and social connection result in the scaffolding of the sadness emotion with the feeling of greater social connection, such as how warmth and cold becomes associated with social inclusion and exclusion (Williams, Huang & Bargh, 2009, Ijzerman et al., 2014). That is, when individuals feel sad, they actually feel more socially connected. Indeed, some individuals tend to report that they feel better when they cry (Cornelius 1986; Bylsma, Vingerhoets, & Rottenberg 2008) and this may be due to the fact that sadness leads one to feel connected with others. Further, some of the participants in study 1 noted that sadness helped them feel more connected (e.g. *"Sometimes I think about a past relationship and I put on some sad music and just think about it").* Thus, under this interpretation greater feelings of sadness may correspond to the actual *feeling of* greater social connection.

Method

270 Participants were recruited via the University's Behavioral Lab. Twenty-four participants failed the attention check, leaving a total of 246 (55% Female, *M*age = 18.58) Participants were randomly assigned to one of ten movie clips (see Appendix), which corresponded with one of five emotions (Sad, Anger, Joy, Disgust, and Fear), which were utilized to control and compare emotional effects. Each video was a movie clip (approximately 5 minutes), taken from the database of emotion-eliciting films (Schaefer, Nils, Sanchez & Phillipot, 2010). The two movies corresponding with each emotion-type were aggregated.

Participants first watched a movie clip and then were asked to rate the extent to which they felt a number of emotions (e.g. "Please indicate whether you currently feel the following emotions" 1 = Strongly Disagree, 7 = Strongly Agree), which included the five emotions relating to the particular video (sad, anger, fear, joy, and disgust). To rule out that the effects were being driven by other emotions or by negative mood in general, other secondary emotions (shame, surprise, etc.) were included (Allen, Machleit, & Marine, 1988). Next, participants completed the Social Connectedness scale (e.g. "I feel disconnected from the world around me." 1 = Strongly Disagree, 7 = Strongly Agree, α = .94; Lee & Robbins, 1995), the Perceived Social Support scale, which contains subscales relating to a close significant other, family, and a friend (Zimet, Dahlem, ZImet, & Farley; 1988; e.g. "There is a special person who is around when I am in need, 1 = Strongly Disagree, 7 = Strongly Agree, α = .90), and the Desire to Affiliate with Others scale (Park & Maner, 2009; e.g. "Right now how much would you like to talk on the phone with a friend" 1 = Not at all, 7 = Very much, α = .81). The first two scales corresponded with a current sense of social connection, while the latter scale corresponded with a motivation to connect with others.

Results

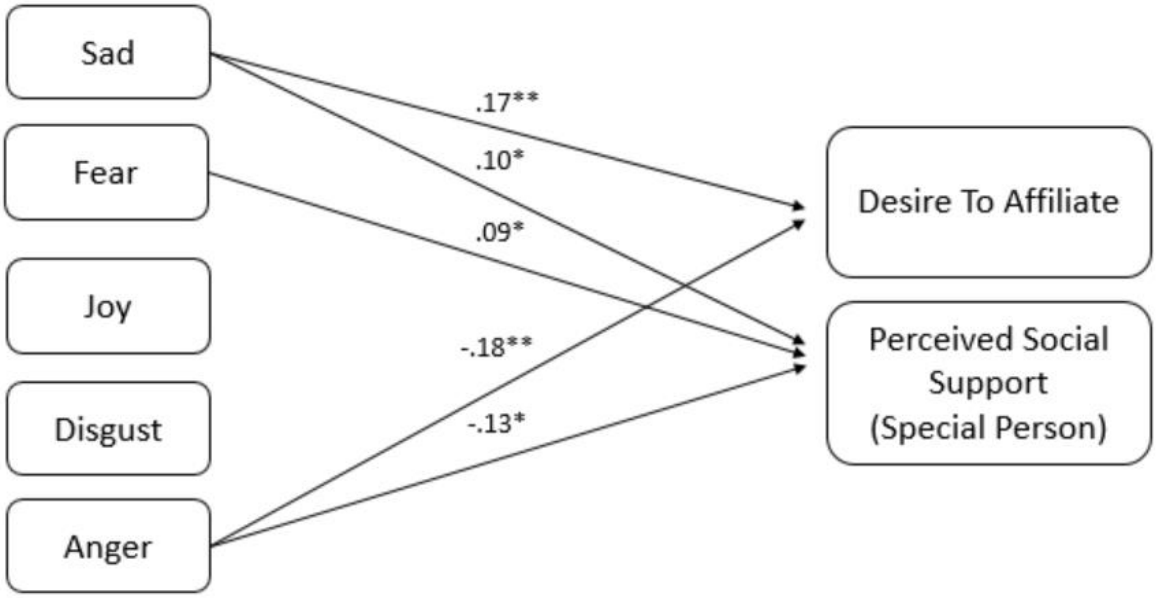
Effect of Videos on Sadness. Overall, examining sadness videos (*M* = 5.38, *SD* = 1.24), versus all the other videos combined (M = 3.98, SD = 1.90), revealed a significant effect

$t(122.76) = 8.07$, $p < .001$, equal variances not assumed, Levene's test = 34.60, $p < .001$.[1] In addition, a Univariate ANOVA examining the five emotion-videos on level of sadness was conducted. The results indicated a significant main effect $F(1,322) = 30.74$, $p < .001$. However, pairwise comparisons revealed that although the reported level of sadness on the Sadness videos ($M = 5.38$, $SD = 1.24$) differed from Fear ($M = 3.09$, SD = 1.94), Joy ($M = 2.94$, SD = 1.71) and Disgust (M = 3.42, SD = 1.65) videos (all $ps < .001$), it did not differ from Anger (M = 5.38, SD = 1.18) $p = .98$. All other emotion videos were significantly higher on their specific emotion with the exception of disgust (M = 5.96, SD = 1.26) compared to the fear videos (M = 5.83, SD = 1.40), $p = .67$. Table 8 provides a summary of descriptive statistics of each emotion on video condition. As Table 8 demonstrates, the videos did not uniquely and cleanly elicit specific emotional states and there was considerable overlap of the emotions between videos (see Table 9 for correlations between emotions). Subsequently, for this study, I focused on the subjective experience of the participants' emotions.

Primary Analyses. A structural equation model was computed to examine the unique effects that each emotion of the five video emotions (sad, joy, fear, anger, and disgust) had on the various scales (see figure 5). Specifically, each of the dependent variables were regressed on a single continuous variable of each of the five emotions. Results revealed that sadness was a unique predictor on desire to affiliate $\beta = .19$, $p < .001$. In addition, anger was a negative predictor on desire to affiliate $\beta = -.18$, $p = .004$ and disgust marginally predicted desire to affiliate $\beta = .08$, $p = .09$. Neither Joy $\beta = -.03$, $p = .43$, nor fear $\beta = .04$, $p = .39$ were predictive. To determine whether the effect of joy and its negative relationship with sadness was biasing the results, the same analysis removing joy was conducted. Removing joy from the model reveals the same effect with sadness as a significant predictor, $\beta = .29$, $p = .001$, while removing the joy condition similarly reveals sadness as a significant predictor, $\beta = .26$, $p = .003$.

[1] Assuming equal variances similarly reveals a significant effect $t(244) = 5.92$, $p < .001$.

Figure 5: Structural equation model from Study 2



Note: The above analysis does not contain social-connectedness or the other perceived social support subscales. Only significant paths are shown

* $p < .05$

** $p < .01$

Next, assessing the effect of the emotions on perceived social support, the effects demonstrate that sadness is a marginally significant predictor, β = .075, *p* = .08. Similarly, there was an effect for fear, β = .058, *p* = .08. There was no effect for joy, disgust or anger (all p's > .26). It should be noted that the effect of sadness was driven by the subscale of a close special other, in which sadness positively predicted support β = .12, *p* = .006. Fear also was a positive predictor β = .08, *p* = .02, and anger negatively predicted β = -.11, *p* = .02. None of the emotions predicted support with family or friend (all p's > .16). Removing joy from the model reveals the same effect with sadness as a significant predictor, β = .19, *p* = .03. Finally, we looked at the effect of sadness on general social connection. Sadness did not predict social connection β = .03, *p* = .53, although neither did any emotions (all p's > .14).

It should be noted that bivariate correlations also revealed that sadness predicted desire to affiliate, *r* = .19, *p* < .001 and perceived social support, *r* = .17, *p* = .002, but it did not predict social connectedness, *r* = .04. When desire to affiliate was regressed with all the emotions, sadness remained a positive predictor β = .30, *p* = .005 and predictive of perceived social support with a close other β = .25, *p* = .03, and overall perceived social support, β = .25, *p* = .03. Further, no other emotions significantly predicted desire to affiliate or perceived social support, with the exception of anger which was marginally negatively predictive, β = -.20, *p* = .07 and β = -.19, *p* = .10, respectively and anxious β = .15, *p* = .08, for desire to affiliate only. Taken together, the results suggest an important and unique effect of sadness on social connection that is not explained by any of the other emotions. See Table 10 for correlations and regression analyses for each emotion on the desire to affiliate, perceived social support, and social connection.

Discussion

The results of Study 2 provide initial evidence that sadness leads to a desire to connect with others. Individuals who felt greater sadness, subsequently felt a greater desire to affiliate and these effects remained even controlling for other emotions. The effect of conflation of emotions in each of the video clips or having close connections being more

accessible by the social connection scale questions. To address this, I conducted a post-test exploring videos that strongly affected sadness vs. a more neutral control.

A pretest (N = 100) determined the three movies that elicited the greatest amount of sadness, while minimally eliciting other emotions (see table 11), the opening scene from *Up* (Disney/Pixar, 2009), a 3D animation called Changing batteries (Sunny Side Up Productions, 2013) and a scene from the movie Click (Revolution Studies/Happy Madison 2006). The control videos varied between an educational video about Antarctica (CGP Grey, 2015), an action scene from Iron man (Marvel Studios, Paramount Pictures, 2008) and a chase scene from Despicable Me (Universal Pictures, Illumination Entertainment, 2010). Links to the videos can be found in the appendix.

120 participants were recruited from Amazon's Mechanical Turk (23 failed an attention check, leaving a total of 97, 55% female, Mage = 39.55) and watched one of the videos. Following, they completed the desire to affiliate scale and perceived social support scales. Results demonstrated that participants in the sad condition showed a greater desire to affiliate, (M = 4.14, SD = 1.43) compared to those in the control condition (M = 3.22, SD = 1.57), $t(95) = 3.01$, $p = .003$, while there was no effect on total perceived social support (M = 5.38, SD = 1.16 vs. M = 5.54, SD = 1.16) or the special person sub-factor (M = 5.77, SD = 1.27 vs. M = 5.70, SD = 1.43) *p*'s > .48. In addition, whereas the sad movies elicited greater sadness $t(95) = 15.28$, $p < .001$, they did not differ on the anger, disgust, or fear, all *p's* > .47. Taken together, the results of study 1 and the post-test provide evidence that sadness leads to a motivation to affiliate, but not to a feeling of greater social support and connection. In the following studies, I explore the consequences of this increased motivation to affiliate. Specifically, I suggest that this motivation leads individuals to buy for others, enjoy the sad media, and have greater subjective well-being. Figure 6 provides a conceptual overview.

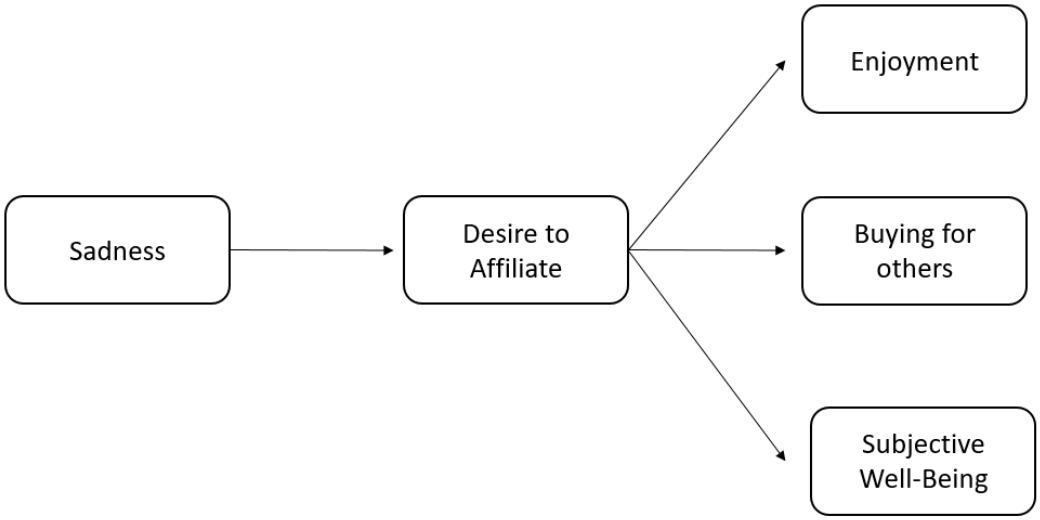
4.10 Study 3

Method

215 Participants were recruited via Amazon's Mechanical Turk. 35 individuals failed the attention checks, leaving a total of 180 (44% Female, M_{age} = 34.86). Participants were assigned to either a sad clip condition or a control condition. As in study 2's post-test, three movies were used for each condition to control for systematic differences in each video. Prior to watching the videos, participants completed the interpersonal reactivity index to measure individual differences in empathy, which contains 4 subscales, each with 7 questions, Perspective Taking (α = .83), Fantasy Scale (α = .88), Empathic Concern (α = .93) and Personal Distress (α = .89). Afterwards participants watched one of the movie clips.

Following, participants completed a manipulation check assessing the specific emotional states (sad, anger, etc.), as well as overall arousal (Anderson, Anderson, & Deuser, 1996; Vigorous, Drowsy, 10 questions, α = .87). Participants then completed the desire to affiliate scale (5 questions, α = .92) and two dependent measures. The first dependent variable was a repeated measure, which assessed one's willingness to buy something for themselves (e.g. I'd like to buy a gift for myself, 4 questions α = .81, see table 12 for items and loading) and one's willingness to buy something for a close other (e.g. I'd like to buy a gift for a close friend, I'd like to eat a meal with a close friend, I'd like do something nice for a close friend, I'd like to play a game with a close friend α = .88).

Figure 6: Conceptual overview



If the desire to affiliate is the product of mood maintenance, one would expect an increase in both buying for oneself and buying for others. If, however, the desire to affiliate is a consequence of sadness, then one would only expect an increase only in the close other variable. The second measure assessed real world charitable contributions in which participants were able to donate part of their payment for the study (which was $1) to a charity (between $0 and $1). Previous research has demonstrated that prosocial giving helps facilitate emotional benefits when individuals desire communal relationships (Williamson & Clark 1989) and thus individuals with a greater desire to affiliate should donate more to charity. Finally, basic demographics were gathered and participants were also asked if they had ever seen the clip they watched (Yes, No). Controlling for whether participants had seen the clip did not affect the results.

Results

Manipulation Check: A manipulation revealed that the three sadness movies did not differ in their level of sadness (p's > .63), but all differed from the 3 control movies (all p's <.001) and thus the movies were aggregated into their respective conditions. Assessing the difference between the aggregated sad condition (M = 5.29, SD = 1.74) and the aggregated control condition (M = 1.75, SD = 1.12) reveals a significant effect on sadness, $t(163.98) = 16.43$ $p < .001$, equal variances not assumed (Levene's test $F(1,178) = 10.39$. $p = .002$).

Assessing differences between conditions on other emotions, there was a marginal effect of condition on fear (M = 2.43, SD = 1.85 vs M = 1.95, SD = 1.48, equal variances not assumed), $t(176.62)$ $p = .06$, an expected negative effect on joy (M = 3.33, SD = 1.94 vs M = 3.93, SD = 1.86), $t(178) = -2.10$, $p = .04$, and a significant and negative effect on arousal (M = 4.80, SD = 1.03 vs. 5.33, SD = 1.10) $t(178) = -3.35$, $p = .001$. There were no other differences on the other emotions.

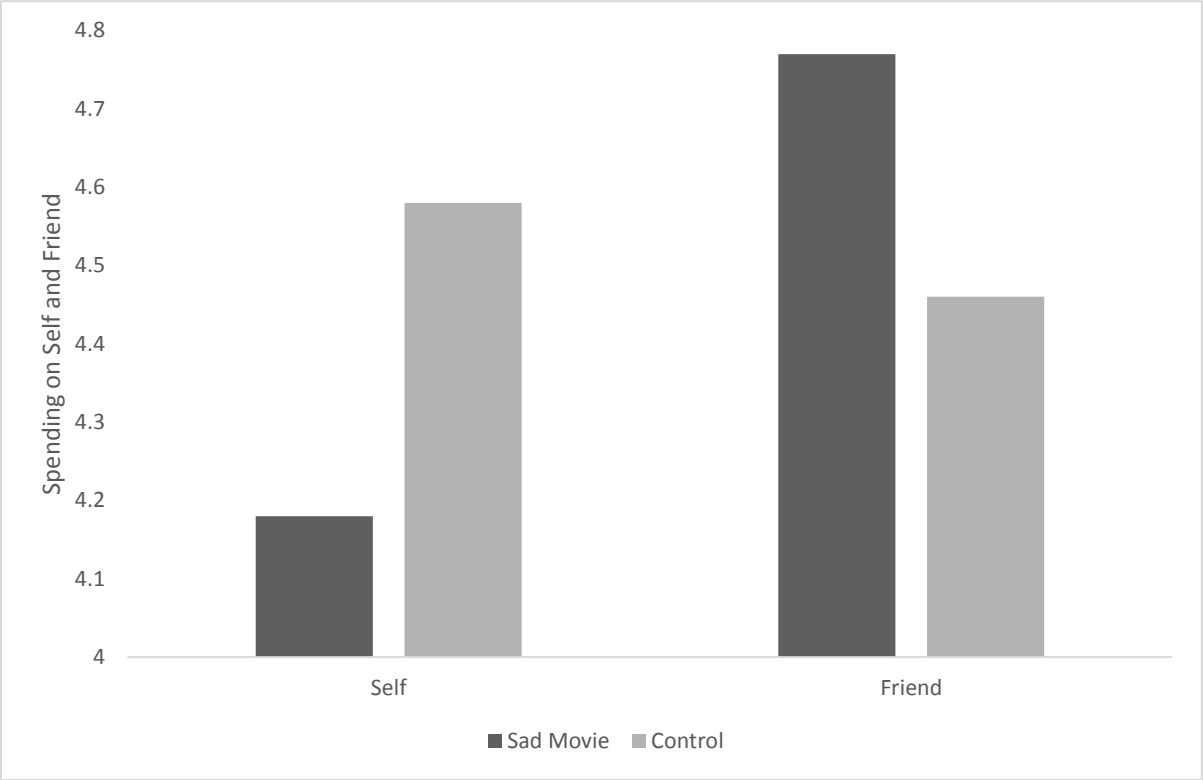
Primary Analysis. First, the effect of condition on desire to affiliate was assessed. The analysis revealed that those in the sadness condition showed greater desire to affiliate (M = 3.87, SD = 1.77) compared to those in the control condition (M = 3.20, SD = 1.42), $t(176.86) = 2.82$, $p = .005$, equal variances not assumed (Levene's test $F(1,178) = 6.42$, p

= .01). This effect remains when controlling for the other emotions, as well as arousal, $F(1,166) = 7.08$, $p = .009$. Similarly, sadness predicted desire to affiliate $r = .28$, $p < .001$, and a regression of all emotions on desire to affiliate similarly reveals sadness as a significant and unique predictor, $\beta = .26$, $p = .005$, while none of the other emotions were predictive (all p's > .27).

Next, a repeated measures analysis examined the effect on buying for self-vs. buying for others. Results revealed a significant interaction effect $F(1,178) = 8.87$, $p = .003$, and this effect is consistent while controlling for the other emotions/arousal $F(1,166) = 6.52$, $p = .01$ (see Figure 7). Examining the simple main effects reveals that individuals in the sad condition were more likely to want to buy an item for / spend time with a close other ($M = 4.73$, SE = .16) as opposed to themselves (M = 4.14, SE = .15), $p < .001$, whereas those in the control condition, were equally likely to want to buy something for themselves (M = 4.51, SE = .16) compared to others (M = 4.42, SE = .17, $p = .58$). Further, a mediation analysis (Hayes 2012, Model 4, 5,000 Bootstraps) demonstrated that the effect of buying for others was mediated by desire to affiliate, $\beta = -.42$, SE = .15, [95% CI: -.76, -.14], and is this effect remained consistent controlling for emotions and arousal, $\beta = -.46$, SE = .17, [95% CI: -.82, -.16]. In addition, although there was no main effect on charity giving $t(178) = -.1$, *ns*, there was a significant indirect effect through desire to affiliate. Specifically, those in the sad condition showed a greater desire to affiliate and this subsequently led to greater donations, $\beta = -.03$, SE = .02, [95% CI: -.08, -.01].

Empathy. To rule out the effect of empathy, an ANOVA assessing the effect of movie condition on desire to affiliate, controlling for the four empathy factors was conducted. Consistent with the above results, sad movies resulted in a greater desire to affiliate than the control movies $F(1,174) = 8.13$, $p = .005$. Similarly, the same pattern of interaction is observed when we assess motivation to buy for oneself vs. buying for others while controlling for these four factors, $F(1,174) = 8.98$, $p = .003$, as do the mediation models, $\beta = -.38$, SE = .15, 95% CI: [-.69, -.13] and $\beta = -.02$, SE = .02, 90% CI: [-.056, -.002], for other-giving and charity, respectively.

Figure 7: Conditional effects on spending on self vs. spending on a friend (Study 3)



Discussion

The results of study 3 provide further evidence to the instrumental function of sadness. Consumers exposed to the sad movies were more motivated to affiliate and subsequently were more likely to want to buy a gift and spend time with others compared to themselves. Further, this effect is driven by sadness and not by other negatively valenced emotions. However, whether this motivation to connect with others leads to greater enjoyment of sad media remains an open question. This idea is examined in the following study. In addition, the current study explores the alternative explanation of mood more systematically.

4.11 Study 4

The goal of study 4 was to explore whether the effect of sadness on one's desire to affiliate also led to greater enjoyment and subjective well-being. As noted, social relationships are an important factor in predicting well-being and thus emotions that increases this motivation should subsequently result in greater wellbeing (Hoffman et al., 2014). Further, prior research has explored why individuals enjoy consuming sadness, but little attention has been given to the motivation for greater social connection.

Method

227 participants were recruited via Amazon's Mechanical Turk, 42 failed the attention checks leaving a total of 185 (Mage = 36.5, 45% female). Participants were assigned to either a sad or control condition. The same movies were used as in study 3.

As noted, other research has suggested that the enjoyment of sadness may be the function of social comparison (Knobloch-Westerwick et al, 2012) and as such participants completed a measure of social comparison (e.g. I often compare myself with others with respect to what I have accomplished in life, 1 = Strongly Disagree, 7 = Strongly Agree, α = .92; Gibbons & Buunk, 1999). After watching the film clips, participants completed a manipulation check assessing the primary negative emotional states (sadness, anger, etc.). In order to assess and explore the alternative explanation of mood participants were asked about their mood utilizing the BMIS (Brief Mood Introspection Scale; Mayer & Gaschke,

1988, negative mood, 7 questions α = .87 and positive mood, 8 questions, α = .85)[2]. The positive and negative mood factors were negatively correlated $r = -.32$, $p < .001$. Positive and negative items were aggregated to form a single mood measure. Positive items were reverse coded and thus higher scores indicate a more negative mood.

Following, participants completed a series of measures that were counterbalanced. There were no significant effects of the counterbalancing (all p's > .27). Specifically, participants completed the desire to affiliate scale (α = .89), the self versus other giving scale, and then to control the effect of catharsis and norm compatibility, a catharsis scale (e.g "I believe that it is useful to cry when life becomes stressful", α = .95; adapted from Vingerhoets, 1997), and a norm compatibility scale (e.g. "My feelings were appropriate with regard to the clip" α = .91; Hofer & Wirth 2012).

Finally, participants were asked about their eudemonic subjective wellbeing (Wirth, Hofer, & Schramm, 2012, see Appendix for items). The eudemonic subjective wellbeing scale consists of two second-order factors. The first, 'deeper reflection' corresponds with greater relatedness, personal growth, and an activation of one's central values (9 questions, α = .91). The second factor, 'life evaluation' reflects a feeling of greater purpose in life, self-acceptance and autonomy (6 questions, α = .91,). Participants were then asked about how much they enjoyed the film, basic demographics, and whether they had seen the clip before (Yes, No). Controlling for whether participants had seen the clip did not affect the results.

Results

Manipulation Check: A manipulation revealed that the three sadness movies did not differ in their level of sadness (p's > .17), but all differed from the 3 control movies (all p's <.001) and thus the movies were aggregated into their respective conditions. Assessing the difference between the aggregated sad condition (M = 5.48, SD = 1.74) and the aggregated control condition (M = 1.78, SD = 1.12) reveals a significant effect on

[2] One of the items traditionally in the scale was sadness, which was removed.

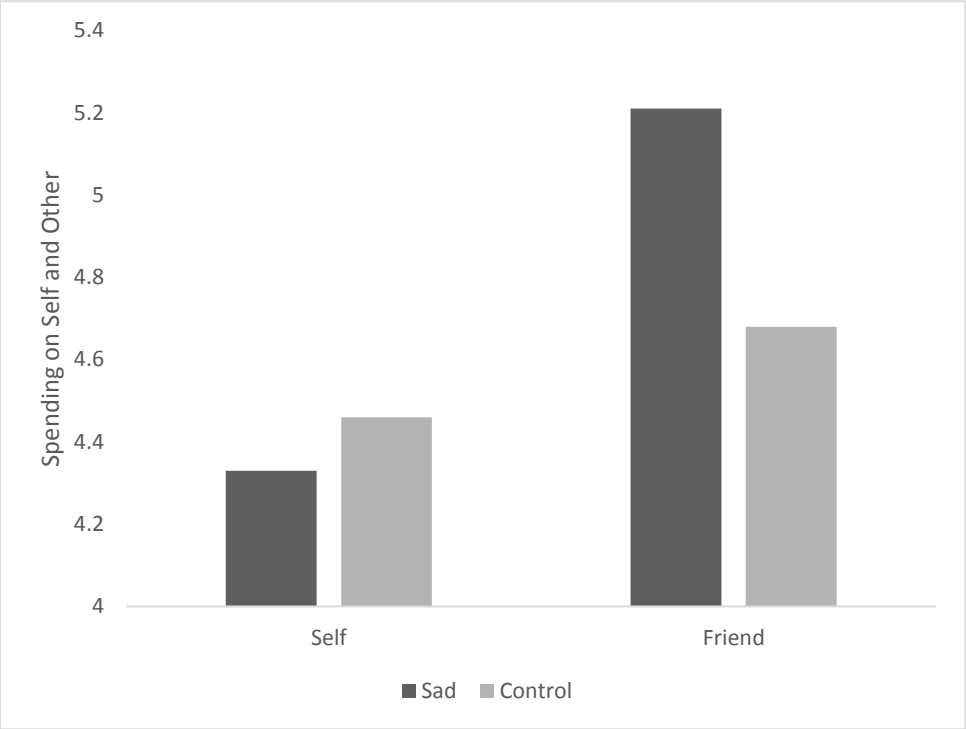
sadness, $t(183) = 18.66$ $p < .001$. There were no differences on any of the other emotions. There was a marginally significant effect on mood, such that those in the sad condition had a worse mood (M = 3.18, SD = .96) compared to those in the control condition (M = 2.90, SD = .96), $t(183) = 1.96$, $p = .051$. The effect of condition on sadness remains controlling for negative mood, $F(1,182) = 335.43$, $p < .001$. See Table 13 for correlations.

Primary analysis. Consistent with study 2 and study 3, participants in the sad condition showed a greater desire to affiliate (M = 4.31, SD = 3.83) compared to those in the control condition (M = 3.83, SD = 1.48) $t(183) = 2.11$, $p = .036$. Examining the unique effects of mood and sadness on desire to affiliate demonstrates that although sadness and mood were correlated $r = .20$, $p = .006$, sadness leads to a greater desire to affiliate, $\beta = .24$, $p = .001$, while mood had no effect $\beta = -.10$, $p = .20$. In addition, replicating the effects of study 3, a repeated measures analysis demonstrated a significant interaction effect, $F(1,183) = 8.11$, $p = .005$ (Figure 8). Exploring the simple main effects reveals that individuals in the sad condition were more likely to want to buy an item for / spend time with a close other ($M = 5.21$, SD = 1.24) as opposed to themselves (M = 4.33, SD = 1.49), $p < .001$, whereas those in the control condition, were equally likely to want to buy something for themselves (M = 4.46, SD = 1.30) compared to others (M = 4.68, SD = 1.46), $p = .22$). This effect remained when controlling for negative mood $F(1,182) = 9.40$, $p = .003$. Similarly, regressing sadness and negative mood on giving to others revealed sadness as a positive predictor, $\beta = .31$, $p < .001$, while negative mood was negatively predictive $\beta = -.29$, $p < .001$[3].

Next we assessed whether this desire to affiliate helped to explain why participants enjoyed the sad film. Although there was no difference in overall level of enjoyment between the sad and control clips, a mediation analysis (Hayes 2012, Model 4, 5,000

[3] Examining the effect of the positive and negative items independently reveals that the positive mood items corresponded with a greater desire to affiliate $r = .27$, $p < .001$ and greater giving to other $r = .30$, $p < .001$, while negative mood items did not predict either desire to affiliate $r = -.05$, $p = .49$ or other giving, $r = -.07$ $p = .37$.

Figure 8: Conditional effects on spending on self vs. spending on a friend (Study 4)



bootstraps) demonstrated an indirect effect of desire to affiliate on enjoyment, β = -.12, SE = .07, [95% CI: -.29 -.02] and this effect remained consistent controlling for catharsis, social comparison, and norm compatibility, β = -.08, SE = .05, [95% CI: -.21 -.01]. Further, sadness had no overall effect on enjoyment, r = .05, p = .48, but one's mood did r = -.35 p < .001. The lack of main effect on enjoyment was ostensibly due to this separate effect of mood. That is, although watching a sad movie led to a greater motivation to affiliate and subsequent greater enjoyment, it also led to a more negative mood and subsequent less enjoyment. A mediation analysis (Hayes 2012, Model 4, 5,000 Bootstraps) assessing both desire to affiliate and mood concurrently demonstrated that both had an effect, albeit in opposite directions, with desire to affiliate continuing to mediate β = -.08, SE = .05, [95% CI: -.23, -.01] as well as one's mood, β = .15, SE = .08, [95% CI: .03, .35]

Finally, we examined the effect on eudemonic well-being. The sad movie condition resulted in greater feeling of both deeper reflection (M = 4.60, SD = 1.20 vs. M = 3.86, SD = 1.24), t(183) = 4.11, p < .001 and life evaluation, (M = 3.84, SD = 1.20 vs. M = 3.36, SD = 1.24), t(183) = 2.32, p = .02. Further, both deeper reflection β = -.07, SE = .05, [95% CI: -.21 -.01] and life evaluation, β = -.11, SE = .06, [95% CI: -.26 -.01] were mediated by one's desire to affiliate. That is, the sad movie condition resulted in a greater desire to affiliate and this subsequently led to a greater eudaimonic wellbeing. Ultimately, it was this increase in eudaimonic well-being that leads to enjoyment. Assessing the mediating effect of affiliation on enjoyment via eudaimonia revealed a significant mediating effect β = .13, SE = .05, [95% CI: .05, .24]

Of interest, a regression of both sadness and negative mood on eudaimonic wellbeing demonstrates that, they exhibited opposite effects on wellbeing. Specifically, sadness positively predicted (β = .46, p < .001, β = .34, p < .001), but negative mood negatively predicted (β = -.33, p <.001, β = -.41, p < .001) deeper reflection and life meaning, respectively. These effects remain when assessed independently via bivariate correlations, with sadness positively predicting (r = .39, p < .001 and (r = .25, p < .001) and negative mood negatively predicting (r = -.24, p = .001 and (r = .34, p < .001). That

is, although sadness is viewed as a negatively valanced emotion, it predicted positive well-being while negative mood in general was negatively predictive.

Discussion

The results of study 4 support and extend the previous results. Specifically, after watching a sad movie participants had a greater desire to affiliate and this subsequently led to greater enjoyment of the media and greater subjective well-being. Further, the results help to elucidate the differing nature of sadness versus negative mood in general. While negative mood leads to an overall negative outlook, in terms of both enjoyment and well-being, sadness has the opposite effect.

4.12 Study 5

Study 5 sought to explore the effect of sadness on affiliation in a more ecologically valid setting and to explore actual behavior. Specifically, participants thus far had only watched a short clip and dependent measures were limited to self-report. Thus, in the current study, participants were recruited to a movie theatre, watched a full twenty-two minute television episode, and were then provided an opportunity to give chocolate to others or to receive chocolate for themselves.

Method

170[4] participants (35% female, M_{age} = 19.49) were recruited to watch a film at the campus' movie theatre. The study took place over three days and three different sessions were run each day. A maximum of 30 participants were recruited per session and the number of participants per session ranged from 13 to 29. Participants were assigned to either a sad or control condition. To control for systematic differences in the shows, episodes of the same shows were used. Specifically, two episodes of Fresh Prince of Bel-air and two episodes of Futurama were used.

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[4] 4 Participants skipped the PANAS questions and 1 participant skipped the subjective well-being questions

Participants began by watching an episode and following, participants completed an emotion manipulation check. Afterwards, participants completed a chocolate assortment task (Rucker, Dubiois, & Galinsky, 2010). Specifically, participants were told that they would be allowed to take twenty chocolates but to indicate how many they wanted for themselves and how many they wanted for other people. Participants were also told that they did not have to take all twenty chocolates. Afterwards, gift bags filled with chocolates were given to reflect their choices and then participants were instructed to complete a few additional questions which included the flourishing scale (Diener et al., 2009), a measure of subjective wellbeing (e.g. "I lead a purposeful and meaningful life" 1 = Strongly Disagree, 7 = Strongly Agree, 8 questions $\alpha = .89$), and the PANAS (Watson et al., 1988) which included 10 items for positive affect ($\alpha = .90$) and 10 items for negative affect ($\alpha = .85$). Lastly, a few control questions assessing whether participants had seen the episode before, whether they had been given chocolates prior, and whether they had come with a friend. None of these control variables affected the results, nor did controlling for the number of participants per session.

Results

Manipulation Check. Examining the effect of condition on level of sadness revealed a strong and significant effect with the sad condition eliciting more sadness (M = 5.46, SD = 1.34) compared to the control condition (M = 2.13, SD = 1.50), $t(168) = 15.28$, $p < .001$. There was a marginal effect of show type $F(1,166) = 3.12$, $p = .08$, however the difference was only a matter of degree and both sad shows were significantly different from their control condition (Fresh Prince $M = 5.69$, SD = 1.16 vs. M = 1.94, SD = 1.18, $t(74) = 13.73$, $p < .001$ and Futurama: M = 5.21, SD = 1.49 vs. M = 2.24, SD = 1.66, $t(92) = 8.93$, $p < .001$). Lastly, there were strong correlations between sadness and the other emotions, (see table 14). However, when controlling for sadness, there was no effect of condition (all p's > .1), whereas even controlling for the other emotions, there was still a strong effect of condition on sadness $F(1,155) = 36.74$, $p < .001$.

Primary Analysis. A repeated measures analysis was computed between condition on number of chocolates given and number of chocolates received. Results indicated a

significant interaction $F(1,168) = 14.31$, $p < .001$ (See Figure 9). Examining the interaction reveals that participants in the sad condition took fewer chocolates for themselves (M = 4.07, SD = 3.77) compared to those in the control condition (M = 6.91, SD =5.43), $p < .001$, while giving more chocolates in the sad condition (M = 15.54, SD = 3.81) compared to the control condition (M = 12.97, SD = 5.42), $p = .001$. There was no show type by condition interaction, $F(1,166) = .02$, $p = .90$ and controlling for date and time did not affect the results $F(1,166) = 7.42$, $p = .007$. A regression assessing the effects of all the emotions on giving chocolate reveals sadness as the only significant predictor, ($\beta = .29$, $p = .01$), as well as the only significant negative predictor for giving to self ($\beta = -.38$, $p = .001$). Next, the effect of giving to others on positive and negative affect was assessed.

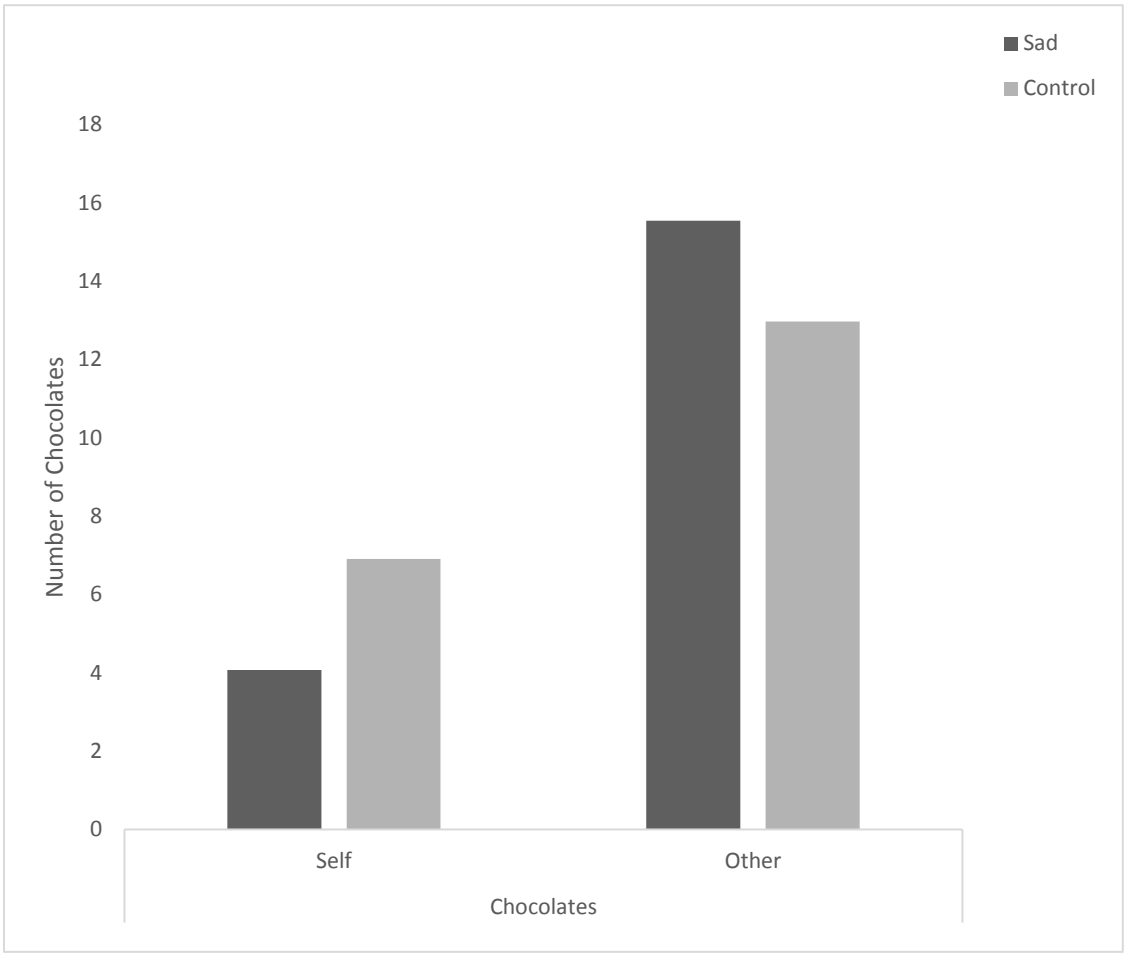
A mediation analysis (Hayes 2012, Model 4, 5,000 Bootstraps) demonstrated an indirect effect of condition (1 = Sad, 2 = Control) on positive affect, through giving to others, $\beta = -.10$, SE = .05, 95% CI: [-.22, -.02], and no effect on negative affect $\beta = -.02$, SE = .02, 95% CI: [-.08, .02]. That is, despite sadness predicting greater giving of chocolates, as a result of giving more, they expressed greater positive affect and no differences in negative affect.

Lastly, we examined the indirect effect of condition through giving to others on subjective well-being. A mediation analysis (Hayes 2012, Model 4, 5,000 Bootstraps) was executed. Consistent with study 4, there was an indirect effect of condition on subjective well-being ($\beta = -.07$, SE = .04, 95% CI: [-.19, -.01]), such that participants in the sad condition gave more and subsequently reported greater subjective well-being,

Discussion

The results of study 5 confirm and extend the previous findings in a more ecologically valid setting using real behavior. After watching a sad episode in a movie theatre, participants gave more / took less chocolates. Subsequently, as a result of giving more,

Figure 9: Conditional effects on the number of chocolates given to self and others.



these participants reported greater subjective well-being. Further, despite sadness leading to greater giving; after giving more, participants expressed greater positive affect and no differences in negative affect. Thus, these results provide behavioral evidence that this desire to affiliate and subsequent giving to others, regulated participants' level of sadness.

4.13 General Discussion

Across five experiments, the current research explores the effect of sadness on one's desire to affiliate. This desire to affiliate results in individuals being more prosocial, opting to spend more time and gifts on others. This desire results in greater enjoyment of sad media and also a subsequent greater feeling of subjective wellbeing. Further, this effect is not explained by general mood maintenance as general negative mood had the opposite effect. The current research provides a number of notable contributions.

First, this research provides one of the first systematic investigations on the effects of consuming sadness and demonstrates that it can result in a desire to affiliate with others. Subsequently, consumers have a greater desire to engage in behaviors that promote this goal. This contrasts previous work on sadness, which has argued that sadness results in greater desire for hedonic compensatory consumption, such as an increase of sweet/fatty foods (Garg, Wansink, & Inman, 2007; Garg & Lerner, 2013; Cryder, Lerner, Gross & Dahl, 2008). I address the nuance between these findings in the following section.

Second, this research builds on general mood and negative affect research and examines the unique consequences of sadness. Although there is a considerable amount of research that has explored the effect of general emotional valence on consumption (e.g. Isen 2001), there is limited work on specific emotional states. The current research provides evidence that a focus on valence or even valence and arousal (e.g. Di Muro & Murray, 2012; Lerner & Keltner 2001), may not be sufficient. Rather, specific emotional states provide unique and even contrasting motivational and behavioural predictions.

Third, the current research examines the underlying reasons for why consumers enjoy sadness. Specifically, sadness provides consumers with a motivation to affiliate and this

increased motivation leads to greater enjoyment. Specifically, sadness provides a sense of utility, in the form of a greater feeling of meaning, reflection, and subjective well-being.

Future research and limitations

Although the current research found consistent results across a variety of different stimuli, the manipulations all utilized videos to elicit sadness. Whether sadness induced by a film is different from sadness induced by other media or by life-events remains an open question. However, in one study, participants were asked to imagine the loss of a loved one to cancer and then were asked to what extent they wanted to engage in social or work-related activities (Gray, Ishii, & Ambady, 2011, experiment 3). Consistent with the results presented here, imagining this situation resulted in greater desire for social activities.

Similarly, the sad movie clips may have systematically motivated a desire to affiliate through their content. Although the effects were found across a number of different clips they tended to all deal with social loss, often (but not exclusively) through the death of a loved one. It is possible that social loss primed social connection or that the motivation to affiliate was driven by mortality salience. Whether activating sadness through music or through recalling a sad situation would lead to a greater desire to affiliate remains an open question.

One may wonder why these results seemingly juxtapose with the stereotype of the sad recluse. This inconsistency is informed by the fact that individuals, particularly men, generally hide their sadness, because it is associated with powerlessness, vulnerability, or weakness (Timmins, Fischer, & Manstead,1998) and a focus on happiness in Western cultures results on positive emotions being generally desirable, while negative emotions being undesirable (Eid & Diener, 2001). Research on the normative acceptance of sadness has demonstrated that individuals are generally anxious about discussing sad emotions (Kilmartin, 2005; Zeman & Garber 1996), and stigma towards depression remains an ongoing concern (Latalova, Kamaradova, & Prasko, 2014). Thus, sadness motivates one to connect with others, while at the same time cultural norms lead people to withdraw. This may help to explain why depression and related mental health

problems remain a serious issue, with suicide rates in the United States, which is predicted by a lack of social support (Kleimen & Liu, 2013) increasing nearly 30 percent over the last twenty years (Center for Disease Control, 2016).

Similarly, A growing literature on the effect of social media and depression has demonstrated that individuals who use social media more frequently tend to have greater rates of depression (Primack et al., 2017; van den Eijnden et al., 2008). Although there may be differences between normal sadness and depression, the typical link speculated in these correlational studies is that greater social media use leads to depression. However, the results from this study suggest the opposite causal pattern, whereby those who are more sad may seek out greater social connection via social media.

In addition, the results presented here are at odds with some other findings in the literature. For example, recent research by Dunn and Hoegg (2014) examined the effect of fear on brand emotional attachment. In one study (experiment 4), they examined sadness as a control and did not find an effect. However, a re-analysis of their data (Dunn 2016, personal communication), reveals that after watching the movies, there were correlations between sadness and emotional attachment, affiliation and brand connection, (r = .19, p = .08, r = .24, p = .02 and r = .26, p = .01, respectively). The lack of main effect may have been due to a conflation of emotions across the conditions and a relatively low mean sadness rating for the particular movie (M = 2.90, SD = .96, out of 5). Ultimately, these results coupled with findings of the current paper suggest that sadness may help create greater attachment towards brands.

Further, other research examining sadness and consumption has demonstrated that sadness can lead to ‘retail therapy’ in that consumers are more willing to pay for items in order to enhance their self (Cryder, Lerner, Gross & Dahl, 2008). However, this research did not examine consumer motivation on buying for others and only found the effect when participants were manipulated to focus on the self. Relatedly, recent research (Garg & Lerner, 2013) demonstrated that sadness led to greater food consumption, via greater helplessness. When participants were induced with a greater sense of control, the effect of sadness on consumption was attenuated. In relation to the current paper, these findings

suggest that individual and contextual differences that affect whether an individual focuses on the self and/or has the opportunity to seek out help from others may moderate the effect of sadness on one's desire to affiliate.

Although the study 2 post-test did not find a similar link between sadness and perceived social support as study 2, this may have been due to the moderating factors of attachment styles and socioeconomic status between the two samples. Specifically, individuals with lower socioeconomic status tend to show less secure attachment styles than those with higher socioeconomic status (Bakermans-Kranenburg, Van IJzendoorn, & Kroonenberg, 2004). The secure attachment style is characterized by parents who are quicker to respond to their children's cries and thus sadness should be more highly associated with social connection for these individuals. Given that study 2 examined university students who typically are of higher socioeconomic status, while the post-test examined participants via Mechanical Turk, the effect of sadness on the feeling of greater social support may be qualified by secure attachment styles. Another possibility is that the student participants watched their respective movie clips in the presences of others, whereas the online participants watched their clips alone. Thus, the shared experience of the sadness may have lead the participants to feel greater levels of support.

Finally, while the current research provides evidence that sadness results in a desire to connect with others, it raises the question of what motivates consumers to seek out sad media in the first place. One possibility is that the consumers with a greater need to belong or who are currently feeling lonely seek out sadness in an attempt to increase their motivation to connect with others. Evidence from the research on catharsis supports this view, with lay theories suggesting that individuals seek out crying to ease the psychological distress (Cornelius 1986; Bylsma, Vingerhoets, & Rottenberg 2008), while participants from study 1 suggested that they seek out sadness when experiencing social loss. Nevertheless, understanding what motivates consumers to seek out sadness provides an interesting avenue for future research.

Conclusion

As the opening quote by Freud illustrates, for many of us, our primary goal is to be "happy." Subsequently, we tend to run from the negative feelings of sadness and similarly encourage others to not be sad. However, sadness need not be appraised as unpleasant. Instead, there may be a utility to sadness, motivating us to forge stronger social connections with others.

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Table 8: Means and SD of video emotion condition on reported emotions

	Reported Emotion									
	Anger		Disgust		Fear		Joy		Sad	
Condition	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Sad	5.40	1.13	3.44	1.64	4.27	1.66	1.79	1.13	5.38	1.11
Anger	5.36	1.41	3.2	1.62	3.84	1.67	1.94	1.28	3.40	1.42
Fear	4.56	1.58	4.34	1.75	6.22	1.04	2.00	1.26	3.60	1.66
Disgust	5.86	1.36	5.96	1.26	4.78	1.81	3.62	1.82	3.22	1.62
Joy	1.80	1.20	1.74	1.10	1.4	0.78	3.73	1.71	1.64	0.96

Table 9: Correlation table between emotions, study 2

	Sad	Angry	Fear	Disgust	Joy	Shame	Relaxed	Anxious	Surprised	Excited	Lonely	Bored	Upset	Nervous
Sad	1													
Angry	.650**	1												
Fear	.503**	.539**	1											
Disgust	.202**	.530**	.345**	1										
Joy	-.329**	-.261**	-.352**	-.312**	1									
Shame	.160*	.280**	0.04	.259**	.196**	1								
Relaxed	-.259**	-.291**	-.482**	-.346**	.491**	-0.01	1							
Anxious	.211**	.191**	.484**	.233**	-.178**	-0.03	-.441**	1						
Surprised	-.222**	-0.03	0.00	0.12	.295**	.203**	0.02	.169**	1					
Excited	-.218**	-.215**	-0.06	-.178**	.553**	0.03	.188**	0.07	.315**	1				
Lonely	.249**	.131*	.212**	0.12	0.08	.250**	-0.07	.161*	.202**	.151*	1			
Bored	0.03	-0.03	-0.06	-0.03	0.01	0.02	0.10	-0.03	0.12	-.161*	.180**	1		
Upset	.649**	.613**	.466**	.383**	-.275**	.277**	-.385**	.288**	0.07	-.176**	.319**	.137*	1	
Nervous	.323**	.259**	.630**	.228**	-.245**	0.11	-.438**	.591**	.153*	0.10	.343**	0.03	.415**	1

Table 10: Correlations and regression weights of the five focal emotions

	Desire to Affiliate		Perceived Social Support		Social Connectedness	
	r	β	r	β	r	β
Sad	.19**	.30**	.15*	0.19	.03	0.1
Angry	.05	-.24*	.05	-.24	-.01	-.10
Fear	.16*	.13	.15*	.18	.06	.08
Disgust	.08	.13	-.03	.01	.01	.04
Joy	-.06	.07	-.06	-.01	.02	.07

* $p < .05$

** $p < .01$

Table 11: Reported emotions on movie pretest.

	Reported Emotion							
	Sad		Anger		Fear		Disgust	
Clip	M	SD	M	SD	M	SD	M	SD
Changing Batteries	5.27	1.42	1.73	.91	2.45	1.7	1.82	1.25
Up	5.58	.79	1.17	.39	1.50	1.45	1.08	.29
Click	5.00	1.34	1.82	1.08	2.27	1.59	2.00	1.33
Saving Private Ryan	4.15	1.95	1.62	1.19	1.15	.38	1	0
Lion King*	6.00	1.08	4.85	1.57	2.69	1.89	3.92	2.06
Good Will Hunting*	5.18	1.53	3.83	1.40	2.33	1.56	3.00	1.71

*Note: Although Lion King and Good Will Hunting elicited more sadness, the differences were not statistically significant. However, they did show statistically higher levels of anger, fear, and disgust, and were thus not used.

Table 12: Items and factor loading for buying for self and other (varimax rotation).

Item	**Factor 1 (Other)**	**Factor 2 (Self)**
Eat a meal by myself	.007	**.826**
Play a game by myself	.162	**.760**
Do something nice for myself	.265	**.830**
Buy a gift for myself	.382	**.693**
Play a game with a close friend	**.769**	.263
Buy a gift for a close friend	**.838**	.125
Do something nice for a close friend	**.873**	.212
Eat a meal with a close friend	**.878**	.134

Table 13: Correlations between emotions and mood (study 4)

	Sad	Angry	Fear	Disgust	Mood*
Sad	1				
Angry	.20**	1			
Fear	.24**	.45**	1		
Disgust	.04	.56**	.30**	1	
Mood	.20**	.11	.27**	.14	1

*Note: Mood reflects aggregate mean from the BMIS (Brief Mood Introspection Scale) Higher values reflect greater negative mood. For list of items see Appendix.

** $p < .01$

Table 14: Correlations between emotions and arousal states (study 5)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.	1												
2.	.778**	1											
3.	.436**	.505**	1										
4.	.602**	.726**	.520**	1									
5.	-.635**	-.542**	-.264**	-.491**	1								
6.	.265**	.382**	.367**	.379**	-.094	1							
7.	-.597**	-.604**	-.342**	-.544**	.563**	-.243**	1						
8.	.352**	.418**	.493**	.319**	-.250**	.419**	-.394**	1					
9.	-.074	-.120	-.090	-.164*	.224**	.066	.109	.125	1				
10	-.142	-.075	.080	-.013	.248**	.143	.145	.077	.300**	1			
11.	-.155*	-.120	-.011	-.133	.073	.137	.195*	.224**	.194*	-.088	1		
12.	-.294**	-.201**	-.031	-.232**	.459**	.067	.306**	-.024	.239**	.582**	-.245**	1	
13.	.023	.048	.176*	.035	-.055	.258**	-.065	.343**	.140	-.057	.648**	-.219**	1

Note: 1 = Sad, 2 = Angry, 3 = Fear, 4 = Disgust. 5 = Joy. 6 = Shame, 7 = Relaxed, 8 = Anxious, 9 = Surprised, 10 = Active, 11 = Drowsy, 12 = Lively, 13 = Exhausted

5 Final Thoughts and Directions for Future Research

The impact of affective states has long been known to play an important role in consumer perception, attitudes, and behaviour (Schwarz 2000; Zajonc 1980). While much of this work has focused on mood valence in general (Gardner 1985; Andrade 2005; Ludwig et al., 2013; Arnold & Reynolds 2009; Clore & Huntsinger, 2007; Schwarz & Clore 2003; Cohen, Pham, & Andrade 2008), a growing body of research has begun to unpack the differences between discrete emotional states, such as excitement and peacefulness (Kim, Park, & Schwarz, 2010), anger and sadness (Garg, Inman, and Mittal 2005) or the moderating impact of arousal (Di Muro & Murray 2012).

Further, the work on mood regulation has similarly focused on maintaining positive moods and alleviating or mitigating negative ones, but a nuanced understanding of the underlying motivations involved in specific and discrete emotional states remains an important and ongoing area of research. Indeed, as Di Muro & Murray (2012) demonstrate, although consumers seek to regulate their mood, differences in arousal systematically affect the ways in which they do so. In line with these and related ideas, this dissertation sought to better understand the roles of specific emotional states and the subsequent regulatory processes that consumers may engage in.

Essay 1, *Embodied cognition and social consumption: Self-regulating temperature through social products and behaviors*, provides an introductory framework to the idea that consumers seek to regulate emotions. Drawing on the literature demonstrating an association between loneliness and cold, the research demonstrated that individuals can reduce this perceived lack of interpersonal warmth by substituting it with physical warmth. In contrast to previous work which has argued that these manipulations activate concepts and increase the accessibility of related ideas, essay 1 argued that individuals are motivated to ameliorate emotional and physical discrepancies via consumptive behaviour.

Essay 2, *The Warmth of our Regrets: Managing Regret Through Physiological Regulation Via Consumptive Behavior* built on these ideas by exploring the effect of self-conscious emotions such as shame, embarrassment, guilt, and remorse that arise from experiencing action regret. Demonstrating that experiencing these self-conscious emotions leads to a greater perception of warmth, consumers seek to ameliorate this change via interaction with objects that are perceived to be physically opposite in temperature.

Lastly, in essay 3, *The Utility of Sadness: Exploring the Consequences of Sad Consumption*, I examine the consequences underlying the paradoxical phenomenon of sad consumption and the regulatory mechanisms consumers take as a result. I demonstrate that sadness, but not negative mood in general, results in a motivation to connect with others. Subsequently, consumers are more likely to spend time and money on other individuals. Further, this motivation to connect with others leads to the enjoyment of sad media and a greater sense of subjective well-being.

Taken together, the three essays advance consumer behavior research in several ways. First, I demonstrate novel effects to various negative emotional states, whether they be loneliness (essay 1), shame, guilt, embarrassment and remorse (essay 2), or sadness (essay 3). As these studies show, differing discrete emotional states result in varying regulatory outcomes that cannot be explained by other emotions or negative mood alone.

Further, in essay 1 and essay 2, I explore an embodied regulatory mechanism, in which emotional and physical discrepancies in temperature lead to compensatory consumption to ameliorate this discrepancy. In line with recent research which has argued that attachment and social connection is scaffolded from basic thermoregulation processes (Ijzerman et al., 2013) and that seeking warmth is explained by a goal-systems approach (Zhang & Risen, 2014), I demonstrated that consumers are motivated to offset emotional/physical discrepancies with related physical/emotional consumption.

Although essay 3 does not examine this effect from an embodied perspective, the results are consistent and provide an interesting parallel. For example, self-conscious emotions, which essay 2 demonstrated are associated with a feeling of warmth, result in a

motivation to withdraw from social situations (Tangney et al., 1996), an experience that is associated with a desire for cold. Sadness, on the other hand, has been shown to be associated with cold (Nummenmaa, Glerean, Hari, & Hietanen, 2013), was found to be associated with a desire to connect with others, a behavior associated with warmth.

Lastly, this research provides further evidence that consumers engage in emotional compensatory consumption. While previous research has demonstrated a number of ways in which consumers may compensate for specific cognitive discrepancies, this research focuses on the regulation of emotional discrepancies. Although a number of findings examining emotion regulation are consistent with these ideas, they do not necessarily study it from this theoretical perspective. Subsequently, I suggest a number of paths for future exploration.

First, as noted, a regulatory perspective suggests that individuals seek to maintain positive affect and mitigate negative affect, with many previous findings consistent with this view (Kim, Park, & Schwarz, 2010; Garg, Inman, and Mittal 2005). Consistent with these ideas, consider the findings of Kim and colleagues (2010) who demonstrated a congruency effect, whereby those who were excited preferred an adventurous vacation appeal, while those who felt more peaceful preferred a more serene vacation appeal. However, individuals also have an optimal arousal point that leads people to seek out more arousing activities when too low and more relaxing activities when too high. The manipulation by Kim et al (2010) only increased levels of excitement and peaceful to around the midpoint (e.g. 2.98 and 3.28 out of 5, respectively): thus, whether consumers would seek out affect-incongruent experiences at extreme levels of excitement and/or peacefulness remains an open question[5].

Secondly, the nature of emotion regulation may lead to differing effects over time for positive and negative emotions. Specifically, a key consequence of goal activation is that

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[5] Although a secondary explanation is that arousal and valence are not necessarily independent and that levels that are too high or too low are aversive. While some researchers have argued that they are truly independent (e.g. Russell & Barrett 1999; Lang, Greenwald, Bradley, & Hamm, 1993), others have argued that they may interact (e.g. Watson, Wiese, Vaidya, & Tellegen, 1999). Nevertheless, this provides an additional avenue of future exploration.

these effects have enduring behavioral effects that increase over time until they are satiated (Sela & Shiv 2009; Dijksterhuis, Chartrand, and Aarts 2007). Consequently, consumers in a negative emotional state should tend to be motivated to mitigate that state, and this motivation should increase over time. Conversely, the effect on maintaining positive affect is more ambiguous. Self-consistent manipulations correspond with semantic activation and tend to be fleeting (Sela and Shiv 2009; Forster, Liberman, and Friedman, 2007). Thus, although research has demonstrated that individuals manipulated to be in more positive moods show mood-congruent attitudes and behaviors, whether these effects exhibit the same temporal pattern as negative emotions is an interesting avenue for research.

Third, individual differences in affect intensity (Larsen & Diener & Cropanzano, 1987), attention to emotion, clarity of feelings, and mood regulation (e.g. Trait Meta-Mood Scale, Salovey, Mayer, Goldman, Turvey & Palfair, 1995; Gohm 2003), faith in intuition (Epstein, Pacini, Denes, Raj, & Heier, 1996), or other emotionally related individual difference variables likely played a moderating role in each of the above chapters. For example, research by Larsen and colleagues suggests that consumers differ in their propensity to interpret events as having greater personal meaning and also differ in the extent to which they focus and generalize their emotional states. Similarly, Gohm (2003), showed that individual differences resulted in differences in risk judgments, reactivity to emotional stimuli, and mood regulation. Presumably, differences in these cognitions also played a role in the extent to which different consumers felt shame, sadness, or social warmth and the extent to which they sought out related compensatory consumption.

Fourth, the emphasis on self-reported emotions, both here and in most marketing research, presents a unique set of problems. Questions surrounding the nature of emotions have been asked throughout recorded history, and whether emotions exist as natural kinds, that is, whether sadness, anger, fear, etc., are independent of our perception and produce distinctive internal states and feelings that are universal across all individuals, still remains a highly debated topic (see Barrett 2006 for a review). If emotions are not discrete states, but rather, are emergent phenomena arising from more base physiological states (e.g. affect, arousal, temperature), then how do they arise, and why might they

differ between individuals? Why might one consumer respond to a product being sold-out with sadness, while another respond with anger? Interestingly, the results reported in essay 3 suggest that we need not always appraise negatively-valence emotions as unwanted. Further examining the ways in which consumers come to appraise these emotional states provide a unique avenue for exploring and understanding emotions and their subsequent effects on consumer judgment and behavior.

Lastly, recent research on compensatory consumption has identified a number of different strategies that consumers utilize to regulate their psychological discrepancies; direct resolution, symbolic self-completion, dissociation, escapism, and fluid compensation (Mandel et al., 2015). However, these authors note that there is little known on when and why consumers opt for a particular strategy. However, they do note that when consumers are given an opportunity for direct resolution, they are more likely to use a direct resolution rather than symbolic or fluid compensation (e.g. Stone, Wiegand, Cooper, and Aronson 1997). Thus, the preference for a coupon (essay 1) or a cold drink (essay 2) may reflect a restricted forced choice experience limited to the experimental condition. Assessing these effects in a more ecologically valid situation where consumers have other choices remains an important next step. Indeed, had participants only had the option to buy for themselves after experiencing sadness (essay 3), they likely would have been more willing to do so (e.g. Cryder, Lerner, Gross & Dahl, 2008).

In sum, drawing from a self-regulatory view of emotions, specific emotional states direct consumer judgment and behavior in unique but predictable ways. Specifically, consumers tend to seek compensatory consumption in service of regulating their emotional states. This consumption can take the form of embodied regulation via temperature or regulation in which emotions motivate specific instrumental behaviors such as a desire to connect with others. Much of consumption is based on consumers seeking positive and managing negative states. Subsequently, the current dissertation provides greater understanding and marketing knowledge of the underlying processes that enable consumers to do so effectively.

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6 Appendices

6.1 Methodological Appendix Chapter 2

6.1.1 Experiment 2 Robot Stimuli

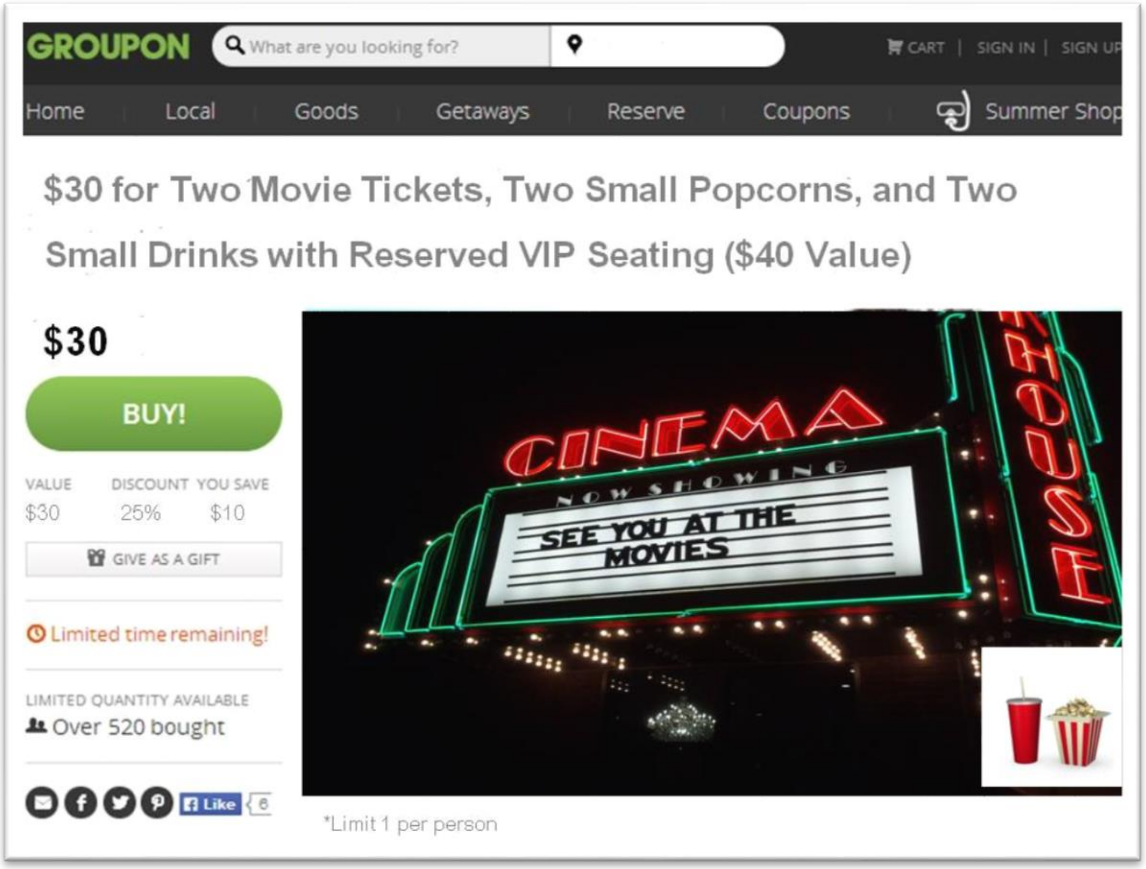
The IRT-4X is a human-support robot maid designed by a Japanese Inventor for future homes. This robot is a cylinder-shaped machine that is 37 centimeters (about 15 inches) in diameter and up to 130 centimeters tall. It can be remotely controlled by a tablet computer to recognize items it is sent to fetch and perform duties through linguistic commands.

The Robot has the capability to move around, talk, and store information (memory) for new commands and tasks.

The inventors and engineers working with the IRT-4X is looking to you for help. While the prototype has been developed, they are looking for ways to increase the functionality of the robot-maid. Thus, we would like to ask your help in determining how YOU would like to utilize this robot in your home. In the next page, please indicate as many features/functions that you would like the IRT-4X to perform. There is no minimum or maximum that is required for your answer.

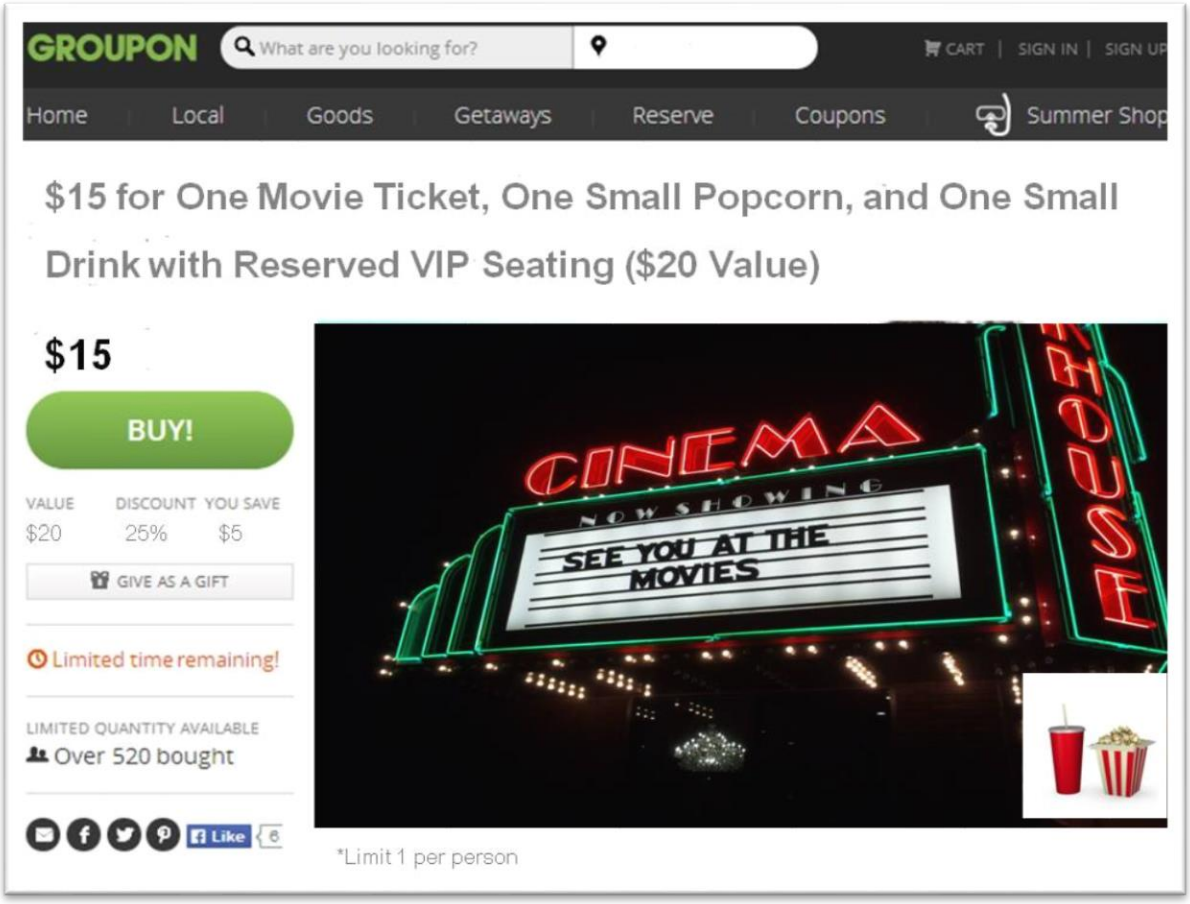
6.1.2 Experiment 3 Groupon Stimuli (Two person)

Groupon has released a new movie package deal in your local theater. Please evaluate the desirability of the deal. The deal includes $30 for two movie tickets, two small popcorns, and two small drinks with reserved VIP Seating.



6.1.3 Experiment 3 Groupon Stimuli (One person)

Groupon has released a new movie package deal in your local theater. Please evaluate the desirability of the deal. The deal includes one movie ticket, one small popcorn, and one small drink with reserved VIP Seating.



6.2 Methodological Appendix Chapter 3

6.2.1 Regret Recall Task

Action Regret

Recall an experience where you experienced a lot of regret as a result of your own actions/decisions. Write your story in the textbox below. Please be descriptive and detailed as possible.

Inaction Regret

Recall an experience where you experienced a lot of regret as a result of failing to act (e.g. missed opportunities). Write your story in the textbox below. Please be descriptive and detailed as possible.

6.2.2 Tea Manipulation

Teavana (a Tea Company) is considering developing an Iced (Hot) Chai Mate Tea. This delicious tea forms a blend that is bold in flavor and rich in heritage. Ginger, cinnamon, cloves, nutmeg, combined with leaves and twigs of the yerba mate plant (mate teas give energy as coffee without the jitters) harmoniously balance with sweet notes of papaya and star anise. Spicy and rich, this sweet Ayurvedic blend contains a wealth of flavor.

Once you have read the scenario, you may move on to the next page.

A recent focus group research showed that this tea is indeed best served *Cold (Warm)*.

6.2.3 Verap Pharmaceutical Manipulation

Verap Pharmaceuticals is a pharmaceutical drug company that is looking for FDA approval on their first ever drug called the Vpam. Vpam is a treatment of agitation associated with schizophrenia or bipolar patients. More than 3.5 million adults suffer from this disorder in the United States, with 90% of those suffering from agitation. The company has recently created compounds which reduces patients' level of agitation. The FDA is set to release their decision tomorrow and you are considering investing $500 in the stock. Currently, the stock price is at $2.50 (which means you can purchase 200 shares of the company). One analyst expects Vpam to be rejected by the FDA and has a price target of $1.25. Another analyst expects Vpam to be approved by the FDA and has a price target of $3.75.

Please consider this situation as if it was a real-life situation. If you had $500 to invest in a stock, will you invest in this stock?

Yes

No

6.2.4 Cruise Manipulation (Cold)

In the land of Midnight Sun, vacationers use every extra moment of daylight to get more than just a suntan. From the blue ice of a massive glacial field to the stunning snow-covered scenery, everything in Alaska is huge, including the adventures.

Featuring our latest innovations in comfortable travel, Crown Jewel is one of the largest cruise ships with room for 3080 passengers. From one of the nearly 900 balconies, you can enjoy the sweeping views of the glacier landscapes across Alaska. The ship also offers incredible specialty restaurants and bars onboard and dozens of winter-based off-board activities for guests to enjoy. Packages range from 7 to 14 days.

Imagine exploring a winter paradise with us.

6.2.5 Cruise Manipulation (Hot)

In the land of Unending Sun, vacationers use every extra moment of daylight to get more than just a suntan. From the blue water of a small hidden lagoon to the stunning palm-covered scenery, everything in the Caribbean is beautiful, including the adventures.

Featuring our latest innovations in comfortable travel, Crown Jewel is one of the largest cruise ships with room for 3080 passengers. From one of the nearly 900 balconies, you can enjoy the sweeping views of the tropical landscapes across the Caribbean. The ship also offers incredible specialty restaurants and bars onboard and dozens of summer-based off-board activities for guests to enjoy. Packages range from 7 to 14 days.

Imagine exploring a summer paradise with us.

6.3 Methodological Appendix Chapter 4

6.3.1 Movie Stimuli Study 2

Sadness

1) Dangerous Minds

2) City of Angels

Joy

1) The Dinner Game

2) The Visitors

Anger

1) Schindler's list

2) Sleepers

Fear

1) Blair Witch Project

2) The Shining

Disgust

1) Trainspotting

2) Seven

6.3.2 Desire to Affiliate Scale

Right now, how much would you like to:

1) Talk on the phone with a friend
2) Spend time with a close friend
3) Hang out with friends
4) Write an email to a close other
5) Make plans with a friend or significant other

6.3.3 Perceived Social Support Scale

1. There is a special person who is around when I am in need
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

6.3.4 Social Connectedness Scale

1. I feel disconnected from the world around me.
2. Even around people I know, I don't feel that I really belong.
3. I feel so distant from people.
4. I have no sense of togetherness with my peers.
5. I don't feel related to anyone.
6. I catch myself losing all sense of connectedness with society.
7. Even among my friends, there is no sense of brother/sisterhood.
8. I don't feel that I participate with anyone or any group.

6.3.5 Movies and YouTube Links

Sad

Up - https://youtu.be/F2bk_9T482g

Changing batteries - https://youtu.be/O_yVo3YOfqQ

Click - https://youtu.be/2_MIrzUc6-g

Control videos

Antarctica - https://youtu.be/DbKNlFcg02c

Iron man - https://youtu.be/7phiJ-vxr0A

Despicable Me - https://youtu.be/KsIcXZOZnfg

6.3.6 Eudaimonia Items

1. I have a good feeling because the film has shown me how content I can be with my own life
2. I feel good because now that I have seen this film I recognize my life as fulfilled and meaningful
3. I feel good because this film has helped me to accept myself and my life
4. I feel good because now that I have seen this film I feel that I am in charge of my own life
5. The film leaves me in a good mood because I became aware of the fact that I am in charge of my own life
6. It is good to recognize that my life is not in the hand of others
7. I have a good feeling because the emotions that I felt during the film challenged me in a positive way
8. It felt good to expose myself to the theme of the film
9. I have a good feeling because the film has made me reflect on myself and my life.
10. It felt good to be captivated by the events around the Protagonist during the film
11. It felt good and right to feel empathy for the protagonist
12. It felt good to feel compassion for the Protagonist during the film
13. Precisely because the film was so distressing I had the feeling that the film delivered central values of life in an authentic way
14. Altogether, I feel good because the Protagonist acted in a responsible way
15. It makes me feel good to see that the Protagonist deals with his/her life's trials and difficulties in an exemplary manner

6.3.7 Brief Mood Introspection Scale Items

Lively

Drowsy

Happy

Grouchy

Sad

Peppy

Tired

Nervous

Caring

Calm

Content

Loving

Gloomy

Fed up

Jittery

Active

6.3.8 Flourishing Scale, Subjective Wellbeing

I lead a purposeful and meaningful life

My social relationships are supportive and rewarding

I am engaged and interested in my daily activities

I actively contribute to the happiness and well-being of others

I am competent and capable in the activities that are important to me

I am a good person and live a good life

I am optimistic about my future

People respect me

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