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Abstract

While people often feel “ruled by their passions,” individuals can and do exert substantial control over their emotional experiences. A growing body of literature in psychology suggests that the various ways emotions are regulated can have considerable impact on both the emotional experience and other psychological processes. Over three essays, this work examines how individuals regulate their emotions, when they are motivated to do so, and why these concepts are important for consumer behavior. In the first essay, I investigate how emotions are managed by looking at one specific emotion regulation strategy: attention deployment. Using experimental methods, I determine that individuals naturally use attention deployment to regulate their emotions, but the effectiveness varies with the emotion being regulated.

After establishing attention deployment as a viable emotion regulation strategy, the second essay asks when individuals are motivated to change their emotions. I propose that identities are associated with discrete emotions, and that these associations give rise to emotion profiles that describe appropriate emotional experiences for individuals with that active identity. The studies reported in the second essay establish that social identities have associations to specific emotions, these associations differ between identities, and the emotion-identity relationships lead to outcomes in cognition, affect, motivation, and regulation. Additional experiments demonstrate that individuals engage in emotion regulation to reduce (enhance) their experience of emotions which are inconsistent (consistent) with the identity’s emotion profile.

In the third and final essay, I connect emotion regulation and emotion profiles to marketing and consumer outcomes. Four studies show that experiencing emotions consistent with the identity’s emotion profile enhances persuasion, product choice, and consumption—even for identity-unrelated products and advertisements. Ultimately, consequences for the framing and positioning of identity-relevant products are drawn.

Across the three essays, I investigate how, when and why emotion regulation processes influence consumer outcomes. From identifying a specific emotion regulation strategy, to introducing the concept of emotion profiles, new insights into the emotion regulation process are provided. These findings suggest that emotion regulation has widespread impact on consumer outcomes, and represents a new viewpoint on how the emotion experience varies by individual.

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ANTECEDENTS AND CONSEQUENCES

Nicole M. Verrochi

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Emotion Regulation in Consumption: Antecedents and Consequences

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Nicole Marie Verrochi

DEDICATION

This dissertation is dedicated to my parents, Christine and Richard Verrochi, my sister, Katherine Verrochi, and my fiancé, Steven Coleman. These four people have ridden the dissertation roller-coaster alongside me, and deserve much of the credit for keeping it exciting rather than scary. Thank you to Mom and Dad for always encouraging me to try and summit the biggest mountains; to Kiki for believing there was no way I wouldn't reach the top; and to Steve for treating me like a treasure during every grueling step.

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ABSTRACTEMOTION REGULATION IN CONSUMPTION: ANTECEDENTS AND
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Nicole M. Verrochi

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While people often feel “ruled by their passions,” individuals can and do exert substantial control over their emotional experiences. A growing body of literature in psychology suggests that the various ways emotions are regulated can have considerable impact on both the emotional experience and other psychological processes. Over three essays, this work examines *how* individuals regulate their emotions, *when* they are motivated to do so, and *why* these concepts are important for consumer behavior. In the first essay, I investigate how emotions are managed by looking at one specific emotion regulation strategy: attention deployment. Using experimental methods, I determine that individuals naturally use attention deployment to regulate their emotions, but the effectiveness varies with the emotion being regulated.

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identities, and the emotion-identity relationships lead to outcomes in cognition, affect, motivation, and regulation. Additional experiments demonstrate that individuals engage in emotion regulation to reduce (enhance) their experience of emotions which are inconsistent (consistent) with the identity's emotion profile.

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Chapter 1

Introduction

Emotion is everywhere. Our lives are colored with affective experiences as we interact with the world around us. The marketing literature documents the influence of emotion on the consumption experience (e.g., Holbrook and Hirschman 1982; Ramanathan and McGill 2007), information processing (e.g., Aaker and Williams 1998; Raghunathan, Pham and Corfman 2006), and product choice (Abendroth and Diehl 2006; Drolet and Luce 2004). As the literature on emotions in consumption has grown, so too has our understanding of both the prevalence and importance of emotions in consumer decision making. However, many conceptualizations of emotions in consumption view consumers as passively experiencing emotion—emotion is induced in the individual, or a situation triggers an emotional response, and from there a series of downstream events occur. Aside from the self-control literatures (e.g. Shiv and Fedorikhin 1999), where a consumer chooses to pursue a pleasurable (hedonic) affective state, we generally see individuals as having emotions *happen to them*. Nevertheless, there is substantial evidence that people can and do manage their emotional experiences, not only by selecting products that create a specific emotional experience (Andrade and Cohen 2007), but also as an emotional experience unfolds (Gross and Thompson 2007). It is this process of emotion regulation that the current work seeks to investigate.

This paper proceeds as follows: first the extant literature on emotion regulation is described, with an emphasis on why it provides a unique research opportunity. From this introduction, I present the first essay (Chapter 2) focusing on attention deployment as an emotion regulation strategy. Once the details of that process have been tested, the second essay examines one motivation to engage in emotion regulation: to maintain consistency with the emotion profile of an active identity. In the third essay, I connect the construct of emotion profiles to consumer outcomes, investigating how this motivates product choice, persuasion, and consumption. After examining the results from these essays, next steps and further directions are presented. The paper concludes with a discussion of the current results and intended contributions.

1.1 Emotion Regulation

Emotion regulation has been defined as the self-management process by which individuals manipulate either the emotion antecedents or the subjective, physiological and behavioral elements of the emotional response (Gross 1998a; Gross and Levenson 1993). Examples of different kinds of emotion regulation may include: shopping for a new outfit after a hard day at work, changing the television channel when a show becomes too graphic, enhancing the expression of one's sadness when a friend is hurt, and so on. Emotion regulation is such a common and everyday experience that most undergraduates report doing it at least once a day, and can easily recall an example of such behavior (Gross, Richards, and John 2006). Indeed, we often only take note of emotion regulation when it fails—such as when a child throws a temper tantrum or a

friend is not as excited for our good fortune as we had expected. Psychology has become interested in emotion regulation through research on emotion *dysregulation*, as many clinical disorders involve a form of emotion dysregulation (see Thoits 1985). As greater insight into emotion regulation failures has emerged, theories about the healthy emotion regulation system have developed, as well as deeper understanding of the psychological processes involved in such self-regulatory practices.

Before describing the emotion regulation process in depth, it is useful to understand the distinctions between emotion regulation and other affective management processes. Specifically, we can consider emotion regulation as one subtype of affect regulation—along with coping and mood regulation. Each of these processes seeks to control an affective experience; it is simply the target of control (emotion, stress, mood) which determines the relevant type of affect regulation. Emotion regulation is the management of a specific emotional state, and can occur at multiple points along the emotion generation process, preempting the emotional experience or modifying it. In contrast, coping relates to the management of stress, a negative affective state that is typically encountered when a person's capacity to manage a situation has been exceeded (Folkman and Lazarus 1988). To this point, coping is a subtype of affect regulation which occurs once the response is underway—a person is experiencing stress, and thus engages the coping mechanisms. Coping also generally involves longer periods of time, and extreme affective events (e.g., grieving for the loss of a spouse). Research on coping is extensive, and generally focuses on these major life events which potentiate a stress response, requiring either problem- or emotion-focused coping strategies (Lazarus 1999). Within marketing, coping has been discussed in reaction to difficult or taboo-tradeoffs

within a decision (Luce 1998), as well as consumption situations which lead to a stress response and require coping (Duhacheck 2005). This work has primarily focused on the different types of behaviors which consumers use in order to cope with negative emotions, for instance, deferring and delaying difficult choices (Luce 1998).

In contrast to coping, mood regulation is the management of diffuse affective states (moods) and typically involves adjustments to the mood experience rather than discrete elements of emotional behavior (e.g., watching a comedy to “pep” oneself up). Moods are generally longer lasting affective experiences than emotions, often persisting for days or weeks, and are thought of as having lower intensity than emotions. Finally, moods do not have an eliciting object or situation, but rather are vague in origin. The three ways in which mood differs from emotion (duration, intensity, specific elicitor) all serve to impact the management strategies available for mood regulation versus those available for emotion regulation (Larsen 2000).

Mood regulation has been examined extensively, in particular the strategies of mood maintenance and mood repair. Generally speaking, individuals want to maintain positive moods (mood maintenance) and eliminate negative moods (mood repair). Mood repair has been supported by evidence that individuals who are in a sad mood will often recall happy memories in order to regulate their affective state (e.g. Rusting and DeHart 2000). Similar results have been found in the marketing literature, whereby participants who experience a negative mood which they believe will linger, indulge in a candy bar (not an apple) to mitigate their negative mood. In contrast, those individuals who believe that their positive mood is fleeting will indulge in order to prolong the positive mood, a process of mood maintenance (Labroo and Mukhopadhyay 2009).

These distinctions between different types of affect regulation lead to a more precise description of emotion regulation. In particular, emotion regulation is the process of managing a specific emotional experience. This can include: modification of the emotion elicitation sequence (e.g., counting to ten to prevent getting angry), changing felt (e.g., pumping oneself up) and/or expressed emotion (e.g., hiding a smile), as well as increasing or decreasing the emotion experience (Gross 1998a; Gross and Thompson 2007; Lazarus 1999; Philippot et al. 2004). Emotion regulation operates on a variety of discrete emotions, and can thus involve the management of both positive and negative emotions, although the more frequent behavior is reducing negative emotions (Gross, Richards, and John 2006). Additionally, the regulation of emotions can range from thoughtful and controlled processes to automatic and unconscious actions.

Existing research has specified a process model where emotion regulation can occur at various points along the course of emotion generation and experience. If the arousal of emotion is viewed as a series of steps (e.g., Frijda 1986; Lazarus 1991), then there is an opportunity for the emotion to be changed at each step. An emotion is aroused when the individual encounters a situation which has motivational significance. Upon encountering the motivationally significant item (emotional cue: Gross 1998a), a series of mental, behavioral, subjective, and physiological responses occur. First, the emotional cue must be attended to in order for the following mental processes to transpire. Upon attention, a set of cognitive appraisals take place—assessing the qualities of the emotion cue that classify it as a distinct emotion (Smith and Ellsworth 1985). After the appraisal, a collection of behavioral, subjective, and expressive responses occur, conveying the emotion that is being experienced (Ekman 1992; Frijda, Kuipers and ter Schure 1989).

This process model of emotion is described in Figure 1.1, where the box around attention and appraisal represents consumers' "black box," as researchers typically only observe the emotion eliciting situation and response.

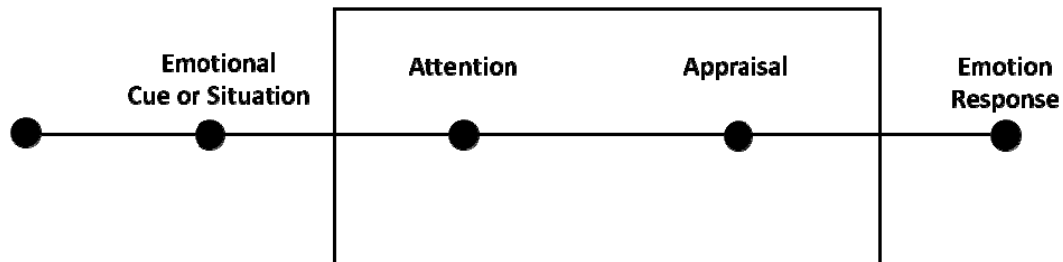


Figure 1.1: The Emotion Generation Process (adapted from Gross and Thompson, 2007)

As described, the generation of emotion has four stages: a situation is encountered, emotional cues are attended to, appraisals are made, and ultimately an emotional response is expressed. For example, the process leading to an experience of anger may be described as follows: a person goes into a store looking for a specific product, only to find that it is not there (situation is encountered). The consumer remembers that the last time she was there, the product was out-of-stock, and the store clerk had assured her that it would be in soon (emotional cue is attended to). At this point, the customer begins to appraise the event, thinking that her goal is being impeded by the store—this appraisal leads to the experience of anger, which may lead the consumer to either yell at the store clerk, decide to go to a direct competitor, spread negative word of mouth, or otherwise express her anger with the store. Emotion regulation theories describe five types of strategies, whereby the emotion elicitation

process can be changed at multiple points: situation selection, situation modification, attention deployment, cognitive change, and response modulation. Situation selection occurs prior to entering the emotion generation process (e.g., avoiding the store which was stocked out last time), while each of the four remaining strategies maps onto one stage of the described emotion elicitation procedure: presentation of emotion cue, attention to cue, appraisal of cue, and affective response. Each type of emotion regulation strategy will be described, along with the existing literature on its effectiveness at influencing emotional experience.

Situation Selection

Situation selection can be seen as the most forward-thinking and anticipatory emotion regulation strategy, as it occurs before any emotional cue has been encountered. This type of emotion regulation involves an individual strategically choosing to enter or avoid certain circumstances because he or she anticipates that a given context will create an emotional reaction. For example, a person might avoid talking with a particular co-worker about politics, knowing that a likely result is animosity and frustration. Or a parent might not allow certain channels on the television because their content is too upsetting for children in the household.

Research on situation selection has examined goal-directed emotion regulation, where an individual wants to cultivate a certain emotional experience in order to pursue some other goal. For instance, Cohen and Andrade (2004) told participants that they would be performing either an analytical problem-solving task or a creative task. Before

engaging in that act, participants could choose what type of music to listen to: happy or sad music. Those participants who expected a creative task opted to listen to happy music, however those who anticipated an analytical task chose to listen to sad music. Similarly, Tamir, Chiu and Gross (2007) found that participants expecting a competitive task chose to listen to angry music, while those expecting a cooperative task chose happy or neutral songs. In both of these articles, participants chose to enter an emotional situation because of the value it offered on a later task—thus creating an opportunity to experience a specific emotion.

In marketing, we can see this type of emotion regulation when consumers deliberately choose to consume items that enhance or suppress particular emotional experiences. Often, purchases are made to make an individual feel good or to experience a certain hedonic emotion (Andrade and Cohen 2007; Holbrook and Hirschman 1982). Much of “experiential” marketing emphasizes this type of consumption motivation, for instance, suggesting that a vacation package offers consumers a chance to “escape from the boring day-to-day, relax and have fun in the sun”—emphasizing the exchange of one emotional situation for another. Thus, situation selection can be a powerful tool not only for individuals trying to regulate their emotions, but also for marketers positioning products. However, individuals are often stuck within a certain situation, or are unable to anticipate an emotional cue. The remaining emotion regulation strategies thus occur within a given situation, after the emotion generation process has begun.

Situation Modification

Once a consumer has entered a certain situation and realizes the potential for an emotional response, he or she can still alter the affective course by changing elements of the given situation. For instance, if a person is cornered by a co-worker who is on the opposite side of the political divide, he or she can steer the conversation toward the weather or another less incendiary conversation topic. Or, if as the political discussion gets heated, the co-worker's face expresses distress, the conversation partner may backtrack or ease off the argument as he or she realizes that emotions are becoming involved. As these examples suggest, situations are often fluid and changeable, and situation modification emphasizes the alterations that can be made on-line to circumvent various emotional outcomes.

There is little work done on situation modification, however, due to its diffuse boundaries with other emotion regulation strategies. For instance, at what point does situation modification become situation selection? It is possible to adjust the situation so much that no emotional cues are encountered, and it becomes an entirely different context. Due to this definitional ambiguity, this emotion regulation strategy has seldom been examined outside of developmental psychology. In marketing, we can imagine an example of situation modification with dieters, who must go grocery shopping, but plan their route through the store in order to avoid the cookie aisle and its accompanying temptation and guilt. Research questions related to this type of planful behavior in the service of emotion regulation remain largely uninvestigated.

In contrast to situation selection and situation modification, which have received less focus in psychology or marketing, research has focused on the emotion regulation processes that occur within a given situation. Recall that three types of emotion regulation strategies occur once an emotional cue is encountered: attention deployment, cognitive change, and response modulation. Cognitive change and response modulation will each be described in turn, with attention deployment relegated to the final section for deeper examination.

Cognitive Change

The emotion regulation strategy of cognitive change refers to the mental exercises individuals employ to change their emotional appraisal of an event. Commonly examined in the emotion regulation literature is the process of reappraisal (Gross 2001; Ochsner and Gross 2005), where the individual alters the meaning of an emotional event, thus changing its emotional impact. For instance, telling oneself that the person being killed during a horror film is “just an actor playing a part” can reduce feelings of fear (Andrade and Cohen 2007).

Research on cognitive change has generally emphasized its benefits as an emotion regulation strategy. It appears to be effective at reducing a variety of emotions, from disgust to anger, and over a set of different manipulations aimed at changing the cognitive assessment of the emotional stimulus. For instance, Gross (1998, p. 227) instructed participants in a reappraisal condition to watch a disgusting film while adopting a “detached and unemotional attitude,” examining the events objectively and

with an eye for the technical aspects of the movie. Taking this mindset allowed participants to report feeling less disgust while watching the film, as well as reduced their sympathetic activation, a physiological correlate of emotional arousal.

In marketing, understanding cognitive change may be particularly important in a variety of situations, such as helping individuals comply with a diet—reframing the less-indulgent items as healthy and promoting well being, rather than as deprivations, may reduce the self-control demands put on the individual (for some evidence see: Mischel, Shoda and Rodriguez 1989). Another example may be in advertising messages that discuss emotionally charged topics, or when emotions prevent the processing of a message. For instance, individuals tend to avoid processing messages that may threaten their positive self-perceptions (e.g. Raghurir and Menon 1998) which is particularly problematic in the health domain. However, if messages reframe the health information as less emotionally threatening, or provide a “protective frame” (Andrade and Cohen 2007), this strategy of reappraisal could enhance message processing.

Response Modulation

The emotion regulation strategies discussed up to this point all involve changing the path of an emotion before it is fully realized—in other words, intervening in the emotion generation process. But what can an individual do once she has entered a situation, attended to the emotional cues, and appraised those cues in favor of a certain emotional response? Is there still an opportunity to change the emotion? Response modulation strategies become relevant at this point. Specifically, response modulation

relates to direct intervention in the physiological, expressive or behavioral action tendencies of the emotion response. For example, angry people often take deep breaths to try and calm down, or individuals mask their facial expressions when feeling an emotion that is inappropriate for a given situation (e.g., smiling at a funeral).

The most extensively studied form of response modulation is suppression: decreasing emotion-expressive behavior. In lay terms, one might believe that suppression would be an effective strategy for changing an emotional experience, as the saying “fake it till you make it” would suggest. And there is some work that supports this notion, whereby creating or exaggerating a facial expression enhances the subjective affective experience (Zuckerman et al. 1981). Often a person who forces a smile will find himself more amused at a joke or comedic sketch than those who maintain a calm façade—suggesting that the enhancement of expression (the opposite of suppression) can indeed manipulate emotional experience. Despite the evidence for the “facial feedback hypothesis” most of the research on expressive suppression and enhancement finds that it is relatively poor at regulating emotional responses. In one article, Gross and Levenson (1997) found that participants who hid their expressions while watching sad films experienced just as much negative affect as those who did not mask their facial responses. Indeed, the sympathetic activation for suppressors was more intense than that of control participants, suggesting that expressive suppression is not only ineffective at changing emotional experience, but it may actively increase emotional arousal. Similarly, Hochschild’s (1983) study of emotion regulation in the workplace frequently examined suppression as a method for conforming to the “emotion rules” of a specific profession.

She discussed the effortful process of suppression, and emphasized both its demands on mental energy and emotional strain on workers' well being.

Both of these researchers found evidence that suppression not only does not effectively manage emotions, but rather increases felt negativity—perhaps through the “ironic monitoring processes” proposed by Wegner and colleagues in regards to thought suppression (for a review see Wegner 1997). In these so-called “white bear” studies, the very act of trying to not think about a white bear increased its intrusions into thought. The process is attributed to a monitoring system which must assess whether the “white bear” thought is being (correctly) suppressed. But monitoring the presence of these thoughts increases their likelihood of appearing in conscious awareness. This process could be what is causing expressive suppression to be such a poor emotion regulation strategy: in order to hide the emotions one is experiencing, the person must be aware of those emotions and monitor their presence. This active monitoring may increase their intensity, and along with the effort of trying to disguise these emotions, regulation is undermined. Taken together, and with the results comparing suppression's relatively inadequate impact on emotion compared to reappraisal (e.g., Gross 1998b), response modulation appears to be an emotion regulation strategy of last resort.

Summary

This section has described four distinct emotion regulation strategies and the points at which they intervene in the emotion generation process. Situation selection is the most forward-looking type of emotion regulation, whereby an individual approaches

(avoids) circumstances which would lead to desired (undesired) emotional experiences. Marketing has touched upon this strategy when discussing the consumption of emotion and individuals' desire to have affect-laden encounters (Holbrook and Hirschman 1982). Once a given situation has been entered, an individual can then engage in situation modification where he alters aspects of the emotionally loaded external environment. Within a situation, individuals may also alter their internal appraisal of the conditions, activating the cognitive change process. Commonly discussed as reappraisal, some forms of protective framing (Andrade and Cohen 2007) may leverage this strategy to enhance consumers' processing of otherwise disturbing material. Finally, if emotion regulation did not happen at other points along the elicitation process, an individual may act directly upon the components of an emotional response: physiological, subjective and expressive reactions. Often, response modulation involves hiding or enhancing a facial expression, but may also include self-medicating or other behaviorally-focused actions. This response modulation strategy is typically deemed the least effective type of emotion management, as it seldom changes the experience of emotion (Gross and Levenson 1993) but rather just hides the internal emotion states from the outside world.

Each of these strategies offers consumers discrete opportunities to mediate their emotional experiences, and every one provides a set of research questions that have only yet been touched upon. The first essay (Chapter 2), however, focuses on a fifth form of emotion regulation: attention deployment, which occurs once a situation has been entered and an individual is selectively attending to emotional cues. This process will be described in detail through the following chapter, and evidence for attention's impact on emotional experience will be drawn from clinical and developmental psychology.

1.2 What Motivates Emotion Regulation?

While the four emotion regulation strategies described in previous research have provided ample evidence of the emotion regulation process, far fewer researchers have investigated what actually prompts individuals to engage in emotion regulation. Every emotional experience is not necessarily subject to emotion regulation—what makes some emotional situations more or less likely to be regulated? It seems that there are occasions when emotions are more or less appropriate, desirable, or bothersome. This is another contribution of the current work: beyond establishing that attention can regulate emotions, this theoretical framework suggests that it is the *desirability* of an emotion which drives its regulation. The vast majority of the work on emotion regulation that was reviewed above has focused on simple negative-positive distinction, mainly because of the emphasis on dysregulation of negative affect. However, emotions can serve purposes beyond simple hedonic pleasure/pain distinctions, which is why it is necessary to distinguish between desirable and undesirable emotions.

To further conceptualize the desirability of emotions, it is useful to understand that emotions are motivational states. Part of their purpose is to encourage a set of responses, or states of action readiness (Frijda 1986; Frijda et al. 1989). With this key feature, the impetus to regulate an emotional experience may often be tied to a goal the individual holds. A typical goal referred to in emotion and mood regulation is the *hedonic principle* whereby individuals desire to approach pleasurable items and avoid unpleasant ones (for a review see: Higgins 1997). Indeed, when college students are asked to recall instances when they controlled their emotions, it is typically with the goal of reducing

negative emotions (Gross, Richards, and John 2006), suggesting that the desire to avoid pain and approach pleasure may be a dominant goal.

However, researchers have begun to look at *instrumental* goals that encourage individuals to pursue certain emotional states or experiences (Tamir, Chiu, and Gross 2007). The essential concept behind these investigations is that because discrete emotions have specific action tendencies and associated lay beliefs (e.g., anger makes a person combative, joy promotes creativity), then individuals may try to induce or enhance specific emotions in order to leverage that emotion on another task. For instance, Tamir and colleagues (2008) told participants that they would be working with another person on either a cooperative or competitive game. Before the game started, participants were able to choose a song to listen to—ostensibly while they waited for the other player to get ready. The essential dependent variable was which song participants chose: an angry, sad, or happy track, which could be considered an instance of situation selection emotion regulation, as an individual is choosing to induce a specific emotional state. Results showed that participants who anticipated a cooperative game selected the happy track, while those participants expecting to compete chose to listen to the angry song. These results run counter to the hedonic principle, in that the angry song did not elicit a pleasant affective response. Just the opposite—participants felt angry after listening, which is a negative state. However, these individuals believed that experiencing anger would allow them to perform better on the competitive game, and thus selected a situation which would further that instrumental goal. Cohen and Andrade (2004) demonstrated a similar type of instrumental emotion regulation via situation selection, where participants chose to listen to sad music when anticipating an analytical (math problems) task, but happy

music if the second task were a creative one. Indeed, there is some evidence that selecting these negative emotions can enhance individuals' ability to perform on the instrumental task (Tamir 2005).

These two areas, the hedonic principle and the instrumental use of emotion, suggest one way in which emotion regulation needs may be moderated. Specifically, the *desirability* of an emotion will vary depending on whether an individual is pursuing a hedonic versus an instrumental goal. Hedonic situations mean that positive and pleasurable emotions will be desirable and will receive focal attention, while attention will shift away from negative or unpleasant emotions. In contrast, the instrumental use of emotion requires more fine-grained predictions, as any emotion could be useful depending on the given situation. Thus, instrumental goals require an understanding of the specific appraisals and action tendencies that are associated with a given discrete emotion—whether those appraisals are appropriate for the task at hand will determine whether attention is focused upon or shifted away from the emotional cue. Therefore, insight into the goal (hedonic or instrumental) an individual is pursuing will be essential in predicting whether and with what strategy that person regulates emotion.

This section begins to highlight a second component of the proposed theory: understanding *when* individuals engage in emotion regulation, and specifically attention deployment. The first objective is to establish attention deployment as a viable emotion regulation strategy, and then to understand the types of situations that would prompt an individual to activate the emotion regulation process. As outlined here, emotions can serve instrumental goals, beyond simply feeling pleasant or unpleasant (hedonic goals). There are various other situational and individual characteristics which might motivate a

person to regulate their emotions. For instance, certain discrete emotions may be particularly amenable to emotion regulation—especially using attention to control those experiences. Or, certain cultural norms may make emotion regulation a primary directive. Some personality characteristics might initiate emotion regulation—for example, researchers have shown that Neurotics intensify feelings of worry prior to academic performances (Tamir 2005). Finally, another way in which emotions might be regulated is to maintain emotional consistency with specific identities that an individual may hold about him or herself. While this list is not exhaustive, it suggests that there are a variety of psychological concepts which could initiate an emotion regulation process. Within the scope of the current research project, two areas are of particular interest: the effect of attention deployment on specific emotions (Chapter 2), and social identities as emotion regulation motivators (Chapters 3 and 4). The following chapters describe these constructs, their implications for attention deployment, and emotion regulation more generally.

Chapter 2

Direct or Divert: Attention and Emotion Regulation

“Suffice it meanwhile that each of us literally *chooses*, by his ways of attending to things, what sort of a universe he shall appear to himself to inhabit.” William James (1883/1890)

Changing the focus of attention, or selectively attending to some stimuli over others, is the basic mechanism behind the emotion regulation strategy of attention deployment. While this process has been postulated in the emotion regulation literature (see e.g., Gross 1998a for a review), little work has been done examining either its efficacy in managing an emotional experience or the downstream effects of these attentional choices on other mental processes. While work on fully functioning (“normal”) adults is scarce, clinical psychology has examined attention regulation deficits in individuals with generalized anxiety disorder (GAD: MacLeod and Mathews 1988) and dysphoria (depression: Just and Alloy 1997), which can offer clues as to this process in non-clinical populations. Similarly, developmental psychology implicates attention deployment as a key element in many affect regulation processes, particularly in infants (Stifter and Moyer 1991) and small children (Sethi et al. 2000). Findings from these areas are discussed, and implications for the study of attention deployment as an emotion regulation strategy are discussed.

2.1 Clinical Psychology and Attention Deployment

Many of the major psychological disorders described by the American Psychiatric Association are characterized by emotion dysregulation (Thoits 1985). For instance, depression is characterized by feeling too much negative and/or not enough positive affect, and generalized anxiety disorder by extreme levels of anxiety, which are often triggered by inappropriate (benign) stimuli. While most individuals will experience both depression and anxiety at various points over the course of their lives, in clinical patients these emotional states persist and worsen, lasting months or even years and causing drastic changes in the patients' lives. Research on both depression and generalized anxiety disorder (GAD) has touched on attention as a key moderator of both the severity and duration of disordered states, which can lend some intuition toward attention's role in normal adults' emotion regulation.

Depression

One of the symptoms of depression is a persistent self-focus, where depressed individuals consistently attribute negative events to the self, undermining and reducing feelings of self-worth, and creating a vicious cycle of negative affect and self-focusing (Nix et al. 1995). In addition to self-focus, depressed individuals tend to engage in rumination in response to negative moods. Specifically, rumination involves cognitions which repetitively draw the person's attention to his or her symptoms, the causes of those symptoms, and the consequences of the feeling state. Examples of this type of cognitive

style would include repeatedly discussing with others how poorly one feels, writing in a diary about one's negative feelings, or continually revisiting the memories that triggered the depressive episode. Ruminative responses have been found to not only increase the severity of depressive affect in dysphoric patients, but also the duration of each episode (Just and Alloy 1997). In contrast, participants given tasks which distract their attention away from the depressive symptoms experience a reduction in depressive affect, as compared to ruminators (Morrow and Nolen-Hoeksema 1990).

Other research has compared the reactions of clinical patients to those of non-clinical populations. For instance, Nix and colleagues (1995) induced either a self-focus or an external-focus in participants who were either depressed or non-depressed. Across two studies they found that a self-focus increased depressive affect in the clinical population, but had no effect on the current emotional state of non-depressed participants. Additionally, inducing an external focus reduced depressive affect in depressed participants; suggesting that removing attention from the affective state reduces its intensity.

In these studies with depressed patients, attention has been manipulated (self-versus external-focus) and measured (ruminative responses). Each investigation increased depressive affect when attention was directed onto the causes and symptoms of depression. Nix and colleagues (1995) demonstrated that simply inducing a self-focus in depressive patients, where patients attend to self-relevant negative information, can trigger depressive affect, revealing the pervasive effects of depressive cognitions. Morrow and Nolen-Hoeksema (1990) suggest that the ruminative style of responding in depressive patients may lead them to focus attention on negative stimuli, constantly

reexamining and regurgitating each negative encounter, thus deepening the depressive state. Feeding into the cycle of depression, dysphoric patients show a higher likelihood to engage in ruminative processes than do non-depressive individuals (Just and Alloy 1997). These studies hinge on attention to emotional stimuli as a perpetuator of depressive affect, but have not measured attentional processes. In contrast, examinations of patients with generalized anxiety disorder have looked at on-line attention deployment, and have demonstrated maladaptive attention patterns are present in clinical populations.

Generalized Anxiety Disorder (GAD)

The finding that highly anxious participants perform significantly worse than normals on cognitive tasks (Eysenck and Calvo 1992), has prompted attention research with clinically anxious individuals. These performance detriments have been connected to attentional processes, whereby anxious individuals selectively attend to threatening information (e.g., indications of poor performance, personal failures) and thus have fewer resources to process task-relevant information. Typical methodologies for investigating these selective attention biases have involved presenting emotionally valenced words as distractors while participants then perform a central task. Patients with GAD demonstrate considerable performance decrements when the emotional distractors involve threat-related words (MacLeod and Rutherford 1992).

These researchers contend that GAD promotes a vigilant attention process, whereby anxious individuals direct attention toward threat-related stimuli, reducing their ability to process other stimuli. In one prototypical study, participants were to engage in a

dot-probe task. In this task, two words were presented on-screen, one above the other. These word masks disappeared, and a dot appeared in the location of either the top or bottom word. Participants had to respond as quickly and accurately as to the location of the dot (top or bottom) with a keypress. The essential element of these designs is the content of the word masks. One word is typically a neutral word (e.g., apple) while the other is a threat-related word (e.g., injury). The critical comparison is between trials where the dot appears behind the threat word, versus trials where the dot appears in the location of the neutral mask. Participants with GAD are more quickly able to recognize the location of the dot when it appears in the location of a threat word, but slower to recognize it when it appears in the location of the neutral mask (MacLeod, Mathews and Tata 1986). This study, and ones similar to it (e.g. MacLeod and Mathews 1988), demonstrate that, similar to depressed individuals, anxious patients selectively deploy their attention toward materials related to their negative affective state.

Attention toward threat-related materials can often be a highly adaptive response (e.g., “detecting the snake in the grass”; Öhman, Flykt and Esteves 2001), where the attention system has evolved to detect stimuli that have survival value. However, patients suffering from generalized anxiety disorder appear to be overly sensitive to threatening materials, and often classify non-threat items (e.g., “book”) as threatening, because of specific phobias or anxieties (e.g., fear of failure on school exams). By selectively attending to threat material, not only do GAD patients reduce their cognitive resources available for other tasks (Eysenck and Calvo 1992), but they also increase feelings of anxiety by perceiving the environment as more threat-filled than it objectively is (MacLeod and Rutherford 1992). As with depressed individuals, clinically anxious

patients appear to have a deficit in regulating their attention—by constantly focusing attention on affectively detrimental stimuli, both dysphoric and GAD patients appear to increase the intensity of their disorders, as well as lengthen the duration of each episode. Clearly, a failure of emotion regulation is contributing to the clinical disorder, and a portion of this dysregulation appears to reside within the attention system.

2.2 Developmental Psychology and Attention Deployment

Some of the literature on self-control in children focuses on the impact of attention shifts in facilitating these control processes. Much of this work has emphasized that self-control is enabled when emotions are “cool;” self-control failures occur when emotions get “hot” and create a drive state which is nearly irresistible. Attention can intervene in this process, by shifting a participant’s focus away from the “hot” reward, reducing the intensity of desire (Ayduk, Mischel, and Downey 2002). Specifically, the delay of gratification paradigm used to examine children’s ability to give up a small, immediate reward (e.g., 1 marshmallow now) in order to receive a later, larger reward (e.g., 2 marshmallows in 15 minutes), has explicitly investigated attention deployment as a mediator of children’s waiting time. For instance, Mischel and Ebbesen (1970) examined the presence of no rewards, the immediate reward, the delayed reward, or both rewards on children’s wait time. Children were able to wait the longest when no rewards were present, and terminated their wait most quickly when both the immediate and delayed rewards were available for them to focus upon. This pattern of results has led Mischel and his colleagues to theorize that attention is a key enabler of self-control

(Ayduk et al., 2002; Mischel, Shoda and Rodriguez 1989; Sethi et al. 2000). These theorists postulate that by attending to “hot” stimuli (e.g., the reward) self-control is undermined, but when attention is focused elsewhere or upon “cold” stimuli (e.g., a painting on the wall), self-control processes are enhanced. Often, the process of focusing on “cold” items is seen as a form of self-distraction, and children who were able to self-distraction (e.g., playing with fingers, singing a song) waited longer for the rewards than those who did not (Sethi et al. 2000). In these studies, attention is implicated as an essential component of self-control within an affective domain; however it has not been tied directly to emotions or emotional processing.

There is other evidence linking the process of diverting attention away from emotionally evocative stimuli in studies of infants and older adults. Work with infants examines the impact of orienting (directing attention) the child toward alternative stimuli when a child is experiencing distress (Harman, Rothbart and Posner 1997). By 4 months of age, infants show considerable ability to disengage the gaze from one object and move it toward another. These skills have been associated with lower negative affect in the infants, as well as higher soothability (Johnson, Posner and Rothbart 1991). Thus, infants who are able to disengage attention from aversive stimuli as well as engage attention with distractors, experience lower levels of distress.

At the opposite end of the lifespan, older adults’ emotion regulation strategies have been examined, as they generally report lower levels of negative emotion than do young adults (Mather and Carstensen 2005). This difference has been attributed to socioemotional selectivity theory (Carstensen, Isaacowitz and Charles 1999), where emotional goals become more important as time shrinks. It appears that older adults

selectively attend to positive or neutral stimuli, ignoring or distracting away from negative stimuli, which thus contributes to their elevated levels of positive affect (Isaacowitz et al. 2008). While there are some studies examining the changing patterns of gaze for older adults versus younger adults, these selective attention patterns have not been connected to changes in affective state, but rather to changes in memory for affective experiences (see Xing and Isaacowitz 2006 for a review). Socioemotional selectivity theory proposes that there are attentional changes throughout the lifespan, such that older individuals focus upon positive events and ignore negative ones, resulting in overall higher positive affect.

Summary

Attention deployment has been examined as a symptom of emotion dysregulation in two types of clinical populations: depressed patients and individuals suffering from generalized anxiety disorder. Both of these disorders are marked by patients continually focusing attention upon negative emotional stimuli which prolong and intensify disordered episodes. In the depression literature, self-focused attention and ruminative cognitions have been linked to more severe and frequent depressive periods, while patients suffering from anxiety show selective attention toward threat-related stimuli. Interventions with depressive patients indicate that inducing these individuals to adopt either an external focus or to engage in distracting activities, depressive affect can be reduced.

The developmental psychology literature has also examined attentional processes, with particular emphasis on attention's role in self-control and self-soothing. Mischel and colleagues have highlighted children's ability to self-distract as a key predictor of wait time in delay of gratification tasks. By distracting oneself away from "hot" stimuli, children are able to prolong their wait, thus attaining larger rewards. In studies of small infants (3-6 months), providing a distracting stimulus helps infants reduce distress, and by 4 months of age, infants look away from aversive stimuli, enabling self-soothing. Socioemotional selectivity theory has connected gaze shifts in older adults to their dominance of positive events in memory, thus leading to older adults' higher levels of positive affect than younger adults.

While these two sets of literature provide a foundation for examinations of attention as a mediator of emotion experience, they do not answer key emotion regulation questions. For one, none of these areas examine the behavior of "normal" adults or non-clinical populations. Additionally, very few papers connect the changes in attention to experienced emotion. In the depression literature there is good evidence that rumination is related to more intense depression, but the causal direction has often been confounded (especially given that depressives are more likely to have ruminative response styles as an individual difference). As of yet, no work connects attentional shifts to changes in on-line emotional experience, nor examines whether adults generally use attention to control their emotions. The conceptual framework described next presents a way of predicting attention shifts, whereby attention can influence experienced emotion, and that attentional shifts are employed by normal adults when encountering undesirable emotional stimuli.

2.3 Proposed Theoretical Framework

The literature reviewed above suggests some promising directions for attention as an effective emotion regulation tool. Specifically, evidence from clinical populations implies that attention and emotion are intertwined and that the way in which attention is directed toward or away from emotional stimuli can influence the emotion experience. The remainder of this chapter describes a theory of attention deployment, whereby directing attention toward an emotional stimulus increases the emotional experience while diverting attention away from said stimulus attenuates the emotional experience. From this core proposition, a theory of attention deployment is built: focusing on how the effectiveness of attention in changing the emotional experience is moderated by the specific emotions being changed.

Attention Deployment as an Emotion Regulation Strategy

From the conclusions drawn in clinical psychology, emotion regulation disorders (GAD, depression) have at least one locus within the attention system; both disorders are exacerbated by an over-attention to disorder-consistent stimuli. In contrast, children who perform well on delay-of-gratification tasks—those able to keep themselves affectively “cool”—tend to distract themselves away from the tempting stimuli. These children strategically shift their attention away from emotional cues (e.g., the marshmallow), and are thus able to exert greater levels of self-control. Older adults tend to avoid negative stimuli, which seems to be at least part of the reason they report feeling generally more

positive affect than do younger adults. These three lines of research—clinical disorders, delay-of-gratification, and socioemotional selectivity theory—all support the idea that changes in attention are related to changes in experienced emotion.

While these various literature streams indicate that attention deployment could be an effective emotion regulation strategy, none explicitly test the relationship between attention shifts and emotion experience in normally functioning adult populations. At this point, the literature can only postulate that attention deployment impacts a person's ongoing emotional experience, and that attention can be used to strategically manage the emotion episode. Thus, the primary objective of the current chapter is to empirically establish that attention shifts influence the subjective experience of emotion—providing the first clear evidence that attention deployment can indeed be used to regulate emotions. One might first ask whether individuals actually use this type of emotion regulation strategy. So beyond examining whether attention impacts emotion, this research first tests whether attention strategically changes upon encountering an emotional stimulus. These hypotheses are derived from the developmental psychology literature, where infants demonstrate the ability to shift attention away from aversive stimuli in order to self-soothe (Stifter and Moyer 1991). This hypothesis posits that that attention deployment is an emotion regulation strategy that individuals are familiar with, and use with ease.

While the first hypothesis suggests that attention strategically shifts in response to the desirability of emotional stimuli, it does not connect the changes in attention to the emotional experience. One direction in which attention influences emotion is relatively intuitive, in that directing attention toward an emotional cue will intensify the emotion

experience. Evidence for this was seen in the dysphoric patients, who continually ruminated on negative emotions, increasing the intensity and duration of depressive episodes (Just and Alloy 1997). In contrast, diverting attention away from emotional cues should diminish the emotional experience, as was seen with children in the delay-of-gratification tasks (Mischel and Ebbesen 1970). The first hypothesis measures attention shifts, while the second measures attention as a mediator of emotional experience. Both of these hypotheses appear quite straightforward, but these effects must first be cleanly established before further expanding upon the effects of attention on specific emotions, or the impact of other key marketing variables (e.g., social identity) on attention deployment itself.

Specific Emotions

Before understanding *when* an emotion will be regulated because of its perceived instrumental benefits, it is reasonable to ask if certain emotions will be more *effectively* regulated by attention deployment than others. It may be that some emotions (e.g., fear) are relatively invulnerable to attention shifts, while others (e.g., sadness) can be significantly altered via attention deployment. Thus, one can ask if particular emotion regulation strategies are especially good at regulating specific emotions, but poor at managing others. In order to investigate this question, a clear understanding of discrete emotions is necessary.

Research on specific emotions. Over the past twenty years, a substantial amount of research has explored the ways in which specific emotions (e.g., anger, fear, pride) differ—moving beyond valence to understand the underlying characteristics of each discrete emotion. Research began on what these dimensions might be, and how each emotion is distinct from others (e.g., Frijda 1986; Smith and Ellsworth 1985). From this early work, affective circumplex descriptions of emotions were developed (e.g., Frijda 1986; Smith and Ellsworth 1985), allowing researchers to compare emotions on a specific set of underlying dimensions—typically valence, certainty, self-other agency, and assorted others. Each emotion has some profile on these dimensions, which makes it distinct from other emotions. For example, fear is an unpleasant emotion, extremely uncertain, and is caused by another person or the situation. In contrast, sadness is an unpleasant emotion which is moderately uncertain, and has attributions of situational control.

In addition to these dimensions providing a descriptive means of separating discrete emotions, research has also shown that the dimensions that characterize emotions also create specific cognitive appraisal tendencies related to each emotion (Frijda et al. 1989; Lerner and Keltner 2000). Generally, appraisal tendencies are the mental processes and motivations that are affiliated with each specific emotion (Frijda et al. 1989; Lerner and Keltner 2000). Appraisal tendencies prepare an individual to take specific actions in response to the emotion experience (Frijda et al. 1989), but can also carry over onto judgments and decisions (Lerner and Keltner 2000; Tiedens and Linton 2001), coloring the cognitions in emotion-consistent manners—a process called appraisal-tendency theory. One study consistent with appraisal-tendency theory utilized a typical paradigm

for studying the endowment effect, where selling prices exceed the choice (buying) prices for the same object, merely because a person owns the object (Lerner, Small and Loewenstein 2004). Half of participants were induced to feel disgust, while the others experienced sadness. Consistent with appraisal-tendency theory, those participants feeling disgusted had reduced selling and choice prices (characteristic of the “expelling” action of disgust), while sad participants displayed lowered selling prices but raised choice prices (characteristic of the desire to “change one’s situation”). Along with studies such as this one examining the behavioral carry-over effects of emotions, other work has investigated the impact of specific emotions on information processing (Tiedens and Linton 2001), persuasion (Aaker and Williams 1998), goal activation (Raghunathan and Pham 1999), sympathy (Small and Verrochi 2009), and self-control (Zemack-Rugar et al. 2007). Especially within the marketing literature, much research has focused upon matching the message to the emotion to enhance persuasion. For example, Agrawal and colleagues (2007) examined the effect of both valence and self/other-relatedness dimensions of discrete emotions on processing of health messages. In this work, the authors found that compatibility between participants’ emotional state and the focus of the advertisement enhanced message processing (Agrawal, Menon, and Aaker 2007).

While there are many papers that go beyond valence to examine the effects of appraisal dimensions on subsequent judgments, choices, and processes, there is little evidence of work that attempts to match specific emotion regulation strategies to individual discrete emotions. Yet it is reasonable to propose that specific emotion regulation strategies will be more appropriate for certain emotions—just as certain message frames (Keller, Lipkus and Rimer 2003), consequences (Agrawal, Menon and

Aaker 2007), or self-versus-other focus (Aaker and Williams 1998) within the message influence its effectiveness. The next section describes the dimensions of emotions that may be most influential in determining whether attention deployment can successfully regulate the emotion experience.

Emotion regulation and specific emotions. The characterizations of each specific emotion can provide the basis for predicting whether attention deployment will be an effective emotion regulation strategy. In particular, there are two dimensions that appear most relevant to assessing whether attention deployment is an effective emotion regulation strategy for a specific emotion: attention and avoidance. Two of the main emotion dimension analyses have attention as a key dimension distinguishing between emotions (attending: Frijda et al. 1989; attentional activity: Smith and Ellsworth 1985). This dimension is conceptualized as the degree to which an emotion prompts the individual to pay close attention or devote further consideration to it. Thus, emotions which are characterized by high levels of this appraisal dimension are ones which motivate close, directed attention to the emotional cues—and thus attention deployment should be a less effective emotion regulation strategy. Fear demands attention (Frijda 1986)—perhaps due to its uncertainty and evolutionary value (Öhman, Flykt and Esteves 2001). Like fear, surprise is also associated with attention and may be difficult to disengage from. In contrast, disgust is related to low levels of attention (Smith and Ellsworth 1985) possibly making it easy to divert attention away from a disgusting target, but difficult to direct attention onto the disgust elicitor. Sadness falls in the middle of

attentional activity dimensions, and thus attention shifts may be used to manage emotion both by directing attention toward and diverting attention away from sad cues.

A second dimension which may be relevant to the appropriateness of attention deployment is the approach/avoid dimension of emotions. Present in various models of emotion dimensions (e.g., Carver 2001; Frijda et al. 1989), approach/avoid has been conceptualized as the desire to move towards or move away from an emotion eliciting object. While attention and physical movement are certainly different entities, it may be that within a certain situation, avoiding an object is operationalized as diverting attention away from it, while approach is directing attention toward the object. Thus, attention deployment may be an appropriate way to reduce the intensity of avoidance emotions. The prototypical avoidance emotion is disgust, with its expelling and aversive motivations. Shifting attention away from disgusting cues may therefore be a particularly effective way to manage that emotion. In contrast, approach emotions might be amenable to directed attention—increasing the intensity of emotions—but diverting attention away from them may be particularly hard. Approach emotions, such as pride or surprise, then may be particularly resistant to attention shifts as a way to reduce emotion intensity. In these ways, attention deployment may be a particularly inappropriate regulation strategy for certain emotions and management would thus use of a different strategy (e.g. cognitive change). The implication of these two dimensions is that predicting whether attention deployment will be an effective strategy depends critically on the specific emotion being assessed.

Summary

This section has presented a framework for predicting when attention deployment will be a particularly appropriate and effective emotion regulation strategy, based on the appraisal dimensions of specific emotions. In particular, the dimensions of attentional activity and avoidance were identified as key components of specific emotions which would influence the emotion's receptivity to management via attention shifts. These hypotheses continue in the tradition of "beyond valence" research on specific emotions, but extend this literature by proposing that specific emotions are better managed by specific emotion regulation strategies.

The next section discusses two sets of studies which were run to examine hypotheses one and two. Specifically, one study was created to measure whether participants spontaneously shift attention away from undesirable emotional stimuli. Secondly, another study was designed to assess whether directing participants to focus upon or distract away from emotional stimuli would change their experience of emotion. Both sets of studies incorporate an understanding of specific emotions as well.

2.4 Testing Attention Deployment

The four studies reviewed here are of two general types: measuring spontaneous attention shifts in response to emotional stimuli, and attention as an emotion regulation strategy. Two studies involve a novel perceptual identification paradigm, designed to capture attention shifts in response to emotional stimuli. The second two studies

incorporate a paradigm where participants watch films under specific attention conditions in order to assess the efficacy of attention as an emotion regulation strategy, and are based on the design of Gross and Levenson (1993). Both sets of studies were devised to test the basic element of the attention deployment strategy: do individuals naturally use attention shifts to control their responses, and do shifts in attention change the emotional experience of viewers?

Experiment	Attention Manipulation	Emotion Manipulation	Stimuli Employed
Watching Films 1	1. Concentrate 2. Distract 3. Watch (Control)	1. Sadness 2. Fear 3. Neutral	1. <i>Top Gun</i> (sad) 2. <i>Exorcist</i> (fear) 3. <i>Nature</i> (neutral)
Watching Films 2	1. Concentrate 2. Distract 3. Watch (Control)	1. Sadness 2. Fear 3. Neutral	1. Sad IAPS 2. Fear IAPS 3. Neutral IAPS
Attention + Perception 1	Measured	Pleasant/ Unpleasant	IAPS
Attention + Perception 2	Measured	1. Sadness 2. Fear 3. Neutral	1. Sad IAPS 2. Fear IAPS 3. Neutral IAPS

Table 2.1: Design and Stimuli Used in Studies 1-4

2.5 Attention Shifts in Response to Emotional Stimuli

This set of studies was designed to measure attention in order to test the first proposition: individuals focus on desirable emotional stimuli and avoid undesirable stimuli. The purpose is to capture attention shifts with measures of accuracy and response

time. The essential structure provides participants with a stream of affective experiences, which are overlaid upon a response time task. By measuring participants' responses after specific types of emotional stimuli (e.g., desirable and undesirable events), this paradigm can assess whether people strategically change their attention upon the presentation of an emotional cue. If in fact participants demonstrate a systematic pattern of attention shifts based on emotional cues, it would lend support to the proposition that attention deployment is a common emotion regulation strategy which is naturally engaged by individuals.

In the two studies described below, similar procedures and measures were employed, but the stimuli differed. Specifically, Study 1 contrasted attention shifts after positive and negative pictures, while Study 2 examined the effect of discrete negative emotions (fear, sadness vs. positive). Both studies employ a within-subjects design, where each participant engages in many trials of the same task and sees every type of picture. The key measures are accuracy and response time, which are used to assess attention.

General Procedure

This study has two parts: the response time task and the emotional stimuli presentation. Each component will be described in detail. First, the response time task is a simple perceptual identification procedure, where an individual's mission is to indicate whether an object is valid/invalid as quickly and accurately as possible. In this specific study, the perceptual objects are the capital letter "T." Participants must indicate whether

the T is right-side up (\top) or up-side down (\perp). This task poses a perceptual challenge as the letter is relatively small (two inches tall), a dark gray (80% black) on a light gray (40% black) background, and is presented quickly (115 milliseconds). Thus, if participants disengage their attention from the target location they will miss the presentation of the target altogether, or have a delayed response (longer reaction time).

Participants respond to the presentation of the letter by pressing either the right (for right-side up) or left (for up-side down) arrow keys. At the start of the study participants were given an opportunity to try the T task, with feedback, to ensure they had understood the instructions. During the task itself, however, there was no feedback about whether responses were correct or incorrect. Each T was presented for 115 milliseconds, and participants had 1500 milliseconds to register a response, at which point the program would advance to the next stimulus presentation. This “automatic advance” was done so that if participants completely missed (i.e., were not watching the target location) the presentation of a T, it would be recorded as a miss and the program would continue to the next T. Fifteen hundred milliseconds was chosen as the inter-T interval to give participants enough time to register a response, without leaving too much time in between stimulus presentations. This interval seemed adequate as the overall average response time was 460 msec, with a standard deviation of 197 msec, suggesting that the response interval was long enough to accommodate essentially all responses.

Thus, the core task which participants engaged in was a perceptual identification task. They were asked to respond to each T as quickly and accurately as possible, and were given an opportunity to try the task before the actual study started to ensure comprehension. This task creates a situation where attention can be measured, because in

order to respond quickly and accurately, attention must be maintained at the location where the target is presented. If attention shifts away from that location, accuracy will drop (discrimination errors) and response time will become longer (slower responses). Therefore, if participants are shifting their attention away from the target location, accuracy and response time will change.

To create situations where participants would be motivated to shift their attention, the T task was combined with another paradigm, referred to as a repeated recovery from threat task. The repeated recovery from threat (RRFT) is a process wherein individuals are presented with aversive and pleasant stimuli, and was originally designed to assess a person's ability to "bounce back" (recover) from various emotional events (Waugh, Fredrickson, and Taylor 2008; Waugh et al. forthcoming). Essentially, the RRFT combines warnings with pictures to create situations that arouse emotion—both positive and negative. To do so, a trial consists of a warning plus a picture. The warnings consist of a colored dot (red, yellow, or green) which participants learn about beforehand. Specifically, participants are told that red dots signal that the upcoming picture is likely to be unpleasant, green dots signal an upcoming pleasant picture, and yellow dots mean it could be either pleasant or unpleasant. Both the red and green dots are "noisy" signals, in that a red dot could be followed by a pleasant picture, but it is most likely to be an unpleasant one. Thus, participants can engage in some type of emotion regulation process based on their prediction about the upcoming emotional event. The pictures used to create affective responses were taken from the International Affective Picture System (IAPS: Lang, Bradley and Cuthbert 2005), which provides a standardized set of pictures which can reliably induce emotional reactions.

Therefore, one trial of the attention shift study would unfold in the following manner: first, participants would be engaged in the perceptual identification task—discriminating whether the letter T is right-side up, or upside down. After identifying 5-8 Ts, a warning would be presented: a colored dot (red, green, or yellow) was presented on-screen for 1500 milliseconds. The cue then disappeared, and participants resumed identifying Ts. This second set of Ts measures attention shifts in the post-cue, pre-picture period: how do participants' attentional processes change after receiving a warning about an upcoming, yet unrealized, emotional event? After responding to this set of 5-10 Ts, the picture then appeared. Pictures were presented on-screen for 2000 milliseconds. The picture was then removed, and participants responded to another set of 5-10 Ts: this is the post-cue, post-picture period, which assesses attention shifts based upon the actual emotional event. Finally, after discriminating this set of Ts, two questions appeared on-screen as manipulation checks: how do you feel right now (positive-negative) and how energized do you feel right now (calm-excited). After responding to the questions, a new trial began. Thus, each trial consisted of Ts, warning, Ts, picture, Ts, and finally two questions (see Figure 2.1). On average, participants identified 20 Ts through the course of one trial, though this number varied randomly between 15 and 30 in order to prevent participants' ability to predict exactly when a picture or cue would appear.

To summarize, these studies were designed to assess whether participants shift their attention in response to emotional stimuli. The key variable of interest is attention: are there systematic changes in attention based upon the type of emotional stimulus presented? To measure attention, participants engage in a perceptual identification task, where they have to discriminate whether the letter T is right-side up or upside down as

quickly and accurately as possible. Two measures are used to assess attention: accuracy and response time. When attention shifts away from the target, accuracy declines and response time becomes slower.

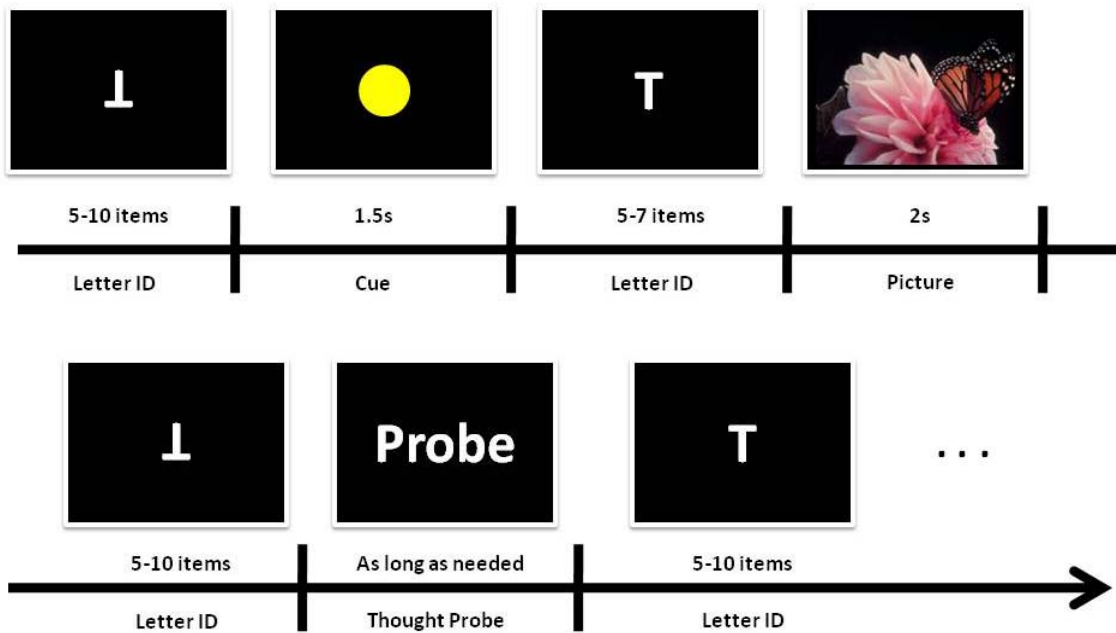


Figure 2.1: Perceptual Identification Trial Layout

To create emotional situations, a repeated recovery from threat (RRFT) task is used, whereby participants see a cue (red, yellow, or green dot) that gives some information about the type of picture that will be presented. Red dots signal a likely negative picture, green dots signal a positive picture, and yellow dots serve as a control—both positive and negative pictures are equally likely after a yellow dot (see Figure 2.2).

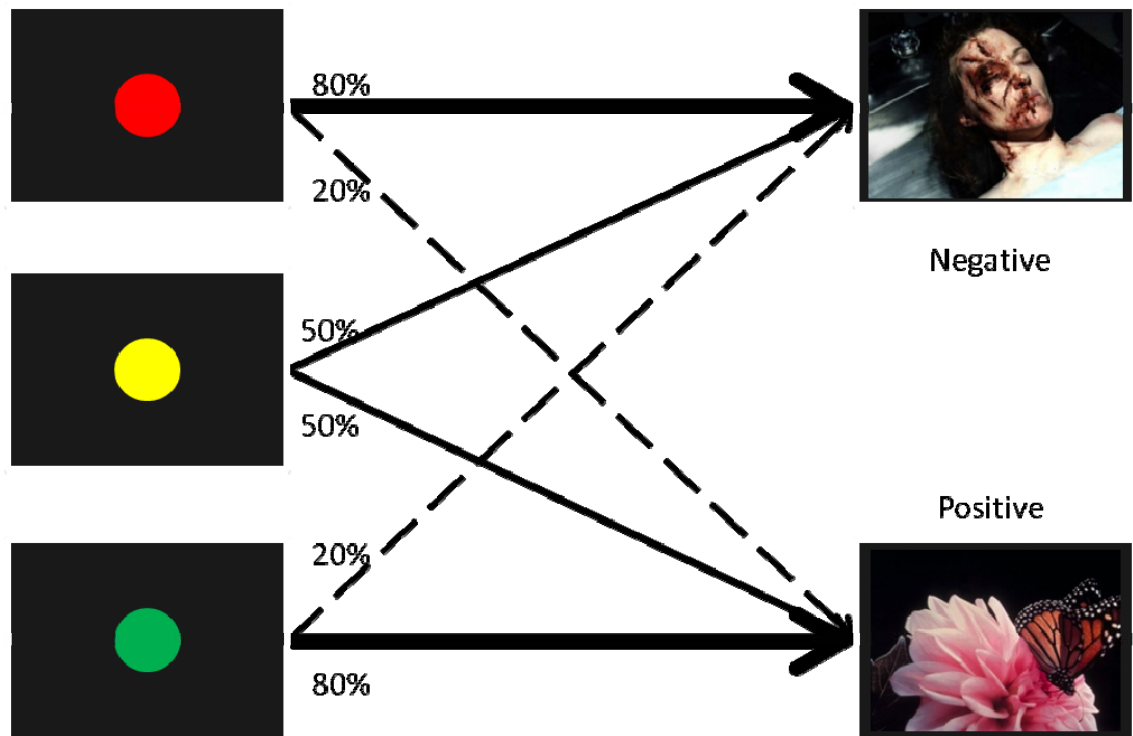


Figure 2.2: Repeated Recovery from Threat Design

There are two periods within a trial that are of interest: the post-cue period, and the post-cue post-picture period. The post-cue period is when participants have some idea that either a negative or positive event is about to occur, and may engage in some attentional shifting in response. The post-cue, post-picture period is when participants had some information about what to expect (from the cue) and then realized the emotional event (the picture).

The desirable events (green cue, desirable picture) should lead participants to focus their attention, while undesirable events (red cue, undesirable picture) should lead participants to shift attention away from the stimulus. The perceptual identification task allows the measurement of attention—lower accuracy rates and longer reaction times

signal that the participant's attention has moved away from the task. This would signify shifting away, and should be found following red (aversive) cues or undesirable pictures. Higher accuracy rates and shorter reaction times are a signal of highly focused attention, and thus are predicted to follow green (safety) cues and desirable pictures. By combining an emotional task with one which measures attention, it is possible to determine whether individuals spontaneously shift their attention in response to emotional stimuli.

The first perceptual identification study pursued these hypotheses using simple valence differences: undesirable pictures were negatively valenced (e.g., car crashes, injuries) and desirable pictures were positively valenced (e.g., flowers, bunnies). The second study investigated the effects of specific emotions; using the pictures pretested for the second attention deployment and emotion regulation study (e.g., fear, sadness). The results of each study will be discussed in turn.

Study 1: Attention Shifts

Participants and Procedure. A total of 127 participants engaged in this task, which was run on a computer in the behavioral lab. This task took approximately 15 minutes of an hour-long lab session, for which participants were paid \$10. Because of the repetitive nature of the task, participants were also given two pieces of candy at the end of the session to thank them. In this version of the perceptual identification task, there were 16 trials, five each with red and green cues, and six with a yellow cue. Eighty percent of the time, a red cue was followed by a negative picture (four trials), while the other 20% a red cue was followed by a positive picture. Similarly, 80% of the green trials

were followed by a positive picture, and 20% by a negative one. The yellow trials were evenly split between positive and negative. All of the pictures used were matched for extremity of valence, by using the IAPS validated ratings (Lang, Bradley and Cuthbert 2005). In other words, an equal number of negative pictures rated 1.5 (where 1 = extremely negative) were included as positive pictures rated 8.5 (where 9 = extremely positive). The key dependent measures in this task were accuracy rates—correctly identifying whether the T was right-side up or upside down—and reaction time—how quickly until a keypress.

Accuracy. Accuracy can first be assessed on the period in between the cue and the picture. From the ego resilience literature (Waugh et al. forthcoming) it is understood that the cue itself can cause an emotional reaction, as it carries affective value in predicting the upcoming picture. For that reason, changes in attention post-cue but pre-picture could be anticipated. Indeed, significant accuracy decrements were found following the red (aversive) cues. Specifically, participants were less accurate following a red cue ($M = 84.5\%$) than after following a green ($M = 88.2\%$) or yellow ($M = 88.3\%$) cue, both $p < .05$. However, there was no significant difference between green and yellow cues. The performance deficit after a red (aversive) cue signifies that participants were shifting their attention away from the target when anticipating a negative emotional stimulus, and thus misidentifying the T presented after the cue but before the picture—supporting hypothesis 1b.

Accuracy can also be evaluated in the post-picture period. It is important to note that in the post-picture set of Ts, participants may be affected by both the picture

(negative/positive) and by the cue (green, yellow, red). For this reason, a two-way repeated measure ANOVA can be run on the accuracy data. Because this is a repeated measure ANOVA, assumptions of sphericity must be examined (Huynh and Feldt 1970). In all analyses, sphericity was violated. Thus, the Huynh-Feldt statistics and adjusted degrees of freedom are reported, but these do not change the interpretation or significance of any of the results

First, a two-way repeated measure ANOVA was run on the accuracy of the post-picture set of Ts. A significant main effect of cue was found, ($F(1.611, 185.274) = 11.930, p < .001, \eta_p^2 = .094$), whereby on trials which presented a green cue, accuracy was higher ($M = 91.6\%$) than on trials with a red cue ($M = 87.3\%$), $p < .0001$, but green cues were only marginally different from those with a yellow cue ($M = 90.5\%$) $p = .08$. Accuracy after a red cue is also significantly different than after a yellow cue, $p < .005$. No other significant effects were found.

However, as there are 5-10 Ts between the cue and the picture, and another 5-10 Ts after the picture, some of the post-picture Ts are measured more than 10 events after the picture and more than 17 items after the cue. Eye movements are typically short saccades that happen shortly after stimulus onset (Fischer and Breitmeyer 1987), suggesting that the effect of the cue and the picture may be strongest in the moments immediately following the stimulus. So, a second analysis was run on just the first T presented after the picture. Again, this was a two-way repeated measure ANOVA with cue and picture valence as predictors. There is a significant main effect of cue ($F(1.851, 212.908) = 10.012, p < .001, \eta_p^2 = .080$), as well as a main effect of picture valence ($F(0.532, 115.000) = 8.343, p < .005, \eta_p^2 = .068$). Performance after a red cue ($M =$

76.7%) is significantly worse than after either a green ($M = 87.4\%$) or yellow ($M = 84.6\%$) cue, both $p < .005$. Accuracy after a positive picture is significantly greater ($M = 85.7\%$) than after a negative picture ($M = 80.1\%$), $p < .05$. These two main effects are qualified by a significant interaction between cue and picture, ($F(2.000, 230.000) = 9.299, p < .001, \eta_p^2 = .075$). The interaction effect is driven by the red cue condition, where participants who saw a red cue followed by a negative picture had a significantly lower accuracy ($M = 69.0\%$) than those who saw a positive picture after a red cue ($M = 84.5\%$), both $p < .001$.

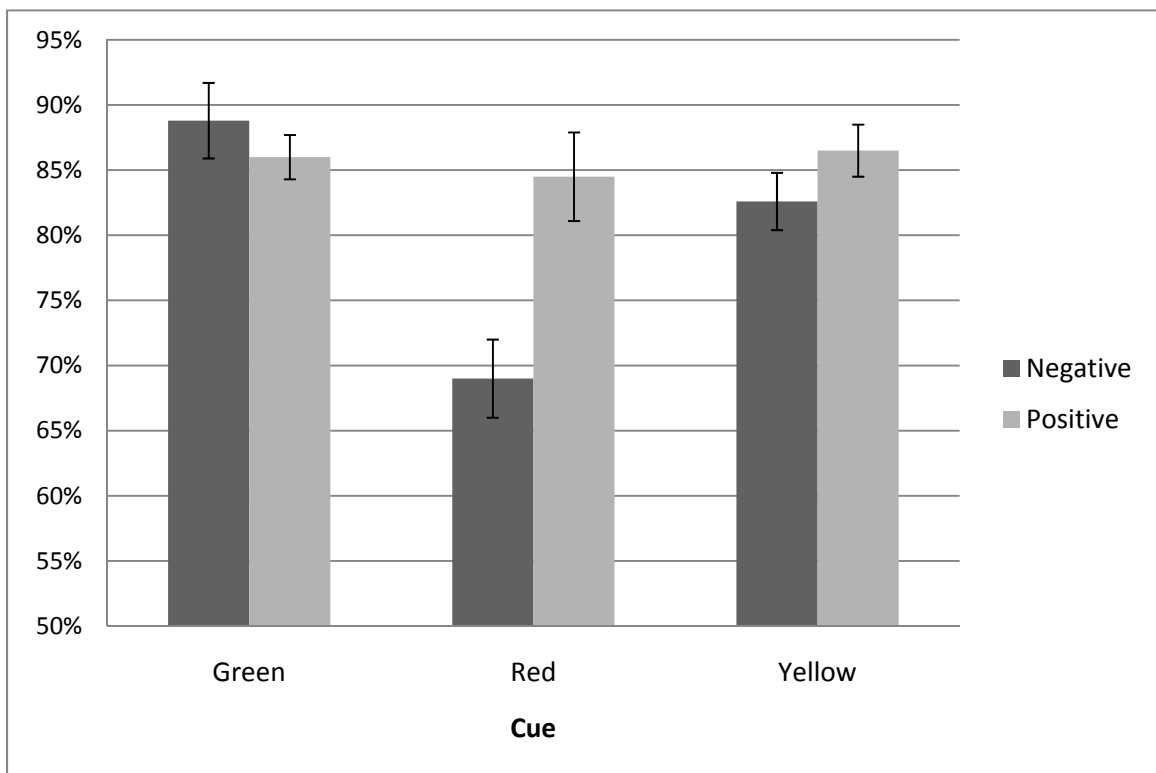


Figure 2.3: Accuracy for the First T Presented Post-Picture

From the accuracy data, there appears to be strong support for the current theory: individuals look away from undesirable stimuli. This held true for the aversive (red) cues, as well as for the negative pictures. In particular, when participants had been expecting a negative event (i.e., had seen a red cue) and realized that negative event (i.e., were presented with a negative picture), accuracy was diminished. While this cue-by-picture interaction only held true for the T presented immediately after the picture, this is precisely the time period within which individuals are continuing to have their attention diverted away from the computer, and have not yet re-focused on the T-task. Unfortunately, there does not appear to be support for individuals focusing on desirable stimuli, as there were no accuracy improvements after presentation of a green cue or pleasant picture (as compared to the yellow cue condition). While disappointing, this may also be due to a ceiling effect, as the accuracy rates are near 90%. To investigate these effects further, similar analyses may be run on the reaction times.

Reaction time. Reaction time was measured from the presentation of each T until the participant categorized each T as either right-side up or upside down. Participants had a 1500 millisecond window within which to categorize the T, at which point, if no response had been made, the program would advance and present the next item. While the missed responses (i.e., no keypress was made within the allotted time) are included in the accuracy analyses as is conventional, they are not included in the analyses of reaction time (Mulligan and Hornstein 2000). These non-responses are excluded as they would artificially inflate the estimates of response time, thus all results described are excluding these items. Non-responses occurred on fewer than 5% of all trials, consistent with mean

values previously reported by Fan et al. (2002), and their inclusion or exclusion does not substantially impact the reported results.

As with accuracy, response time can first be examined in the post-cue, pre-picture period, capturing attention shifts in response to the cue. For all analyses, there were no significant effects on reaction time in the post-cue period, possibly suggesting that individuals shifted their attention away from the cue enough to misidentify the T (seen in the accuracy results above), but not enough to impact their speed of response. In other words, participants may have seen the T appear, and thus responded with a keypress, but were not attending closely enough to tell what direction the T was in, and thus were erroneous.

Again, response time in the post-picture period will be assessed with a repeated-measure ANOVA. As with the accuracy data, assumptions of sphericity were violated so the Huynh-Feldt statistics and adjusted degrees of freedom are reported. These do not change the interpretation or significance of any of the results, however. A two-way repeated measure ANOVA was run on the reaction time of the set of Ts in the post-cue post-picture period, again only looking at correct responses. A significant main effect of picture valence was found, ($F(1.000, 111.000) = 5.095, p < .05, \eta_p^2 = .044$), where participants' reaction times were significantly faster following a positive picture ($M = 473.56$ msec) than following a negative picture ($M = 483.81$ msec). A marginally significant main effect of cue was revealed, ($F(1.981, 219.901) = 2.811, p = .063, \eta_p^2 = .025$), with reaction times significantly faster following a yellow cue ($M = 471.57$ msec) as compared to a green cue ($M = 485.27$ msec), $p < .05$. In addition to these two main effects, a significant interaction between cue and picture appeared, ($F(1.678, 186.272) =$

6.457, $p < .005$, $\eta_p^2 = .055$). The interaction result is driven by the green cue condition, where participants who saw a negative picture after a green cue were significantly slower ($M = 501.24$ msec) than those who saw a positive picture ($M = 469.30$ msec), $p < .001$.

Another two-way repeated measure ANOVA analyzed the reaction times for the first T presented after the picture, with cue and picture valence as predictors. There is a significant main effect of picture valence ($F(1.000, 85.000) = 27.604$, $p < .0001$, $\eta_p^2 = .245$). Reaction time after a positive picture is significantly faster ($M = 549.84$) than after a negative picture ($M = 608.62$). While the interaction effect is not significant, looking closely at the different conditions, follow-up contrasts show that the main effect of picture type is occurring within the green and yellow cue conditions (both p 's $< .001$)—the difference between negative and positive pictures in the red cue condition is not significant ($p = .10$).

Across these two analyses, the accuracy and reaction time data tell two slightly different versions of a similar story. Consistent with the hypothesized theory, these results demonstrate a systematic pattern of attentional shifts based on both expected and realized emotional events. Specifically, there were significant decrements in both accuracy and speed of responses after negative events—both cues and pictures. When confronted with aversive stimuli (either a warning of upcoming threat or the threat itself) participants shifted their attention away from the computer, resulting in lowered accuracy and slower response times. The greatest effects of the shift were seen immediately after presentation of the cue or picture (i.e., first T after each event). Utilizing accuracy and response time permits assessment of attention, and this study strongly suggests that individuals change their attention when they encounter emotional stimuli.

While these results are promising and connect attention shifts to the desirability of emotional stimuli, a few questions are still unanswered. For one, this research is purportedly on emotion regulation, not general positive/negative affect. The stimuli used in this study, however, cannot provide any insight into the effect of experiencing specific emotions on attention. The effects here are for clearly pleasant or unpleasant images, but the implications for sadness or fear or other emotions are uninvestigated. Secondly, the study only involves 16 trials, which is a relatively small number. For instance, the “incongruent” trials (e.g., a red cue followed by a positive picture) only occurred once for each cue, possibly inhibiting the capture of stable attention patterns. Finally, this study shows that individuals shift their attention in response to emotional events, but it does not capture the impact of that attentional shift on the experienced emotion. The second attention shift study addresses the first of these unresolved issues.

Study 2: Attention Shifts with Specific Emotions

Participants and Procedure. A total of 206 participants engaged in this task, which was run on a computer in the behavioral lab. This task took approximately 30 minutes of an hour-long lab session, for which participants were paid \$10. Because of the repetitive nature of the task, participants were also given two pieces of candy at the end of the session to thank them. This version of the perceptual identification study again utilized IAPS pictures. In order to classify the pictures as relating to specific emotions (e.g., fear, sadness), in a pretest 119 participants rated 58 negatively-valenced pictures on three scales: sad, fear, neutral. The pleasant pictures shown were selected to match the

intensity and arousal of the negative pictures, by using the IAPS ratings (Lang, Bradley and Cuthbert 2005).

To assess the effects of sadness versus fear on participants' ability to shift their attention, this study was a two group between-subjects design. Specifically, for half of the participants, all of the negative pictures were fearful, while the other half of participants saw sad pictures. Thus, comparisons can be made between these two conditions in order to evaluate the effect of specific emotions on attention deployment. As was described in the conceptual framework, fear may be resistant to attention shifts due to its attentional activity (Frijda et al. 1989) and evolutionary value (Öhman, Flykt, and Esteves 2001). Thus, we would expect that in the attention shift task, participants in the fear conditions should have equivalent accuracy and response times across the three cue types, while participants in the sad conditions should have lower accuracy and slower response times following a red cue. The key dependent measures in this task again were accuracy and reaction time, in order to assess attention shifts.

Accuracy. A three-factor mixed ANOVA with cue and picture as repeated measures and condition as the between-subjects factor as predictors was performed on the accuracy data—assumptions of sphericity were violated, so Huynh-Feldt adjusted degrees of freedom are reported. There is a significant main effect of cue ($F(1.971, 402.061) = 5.565, p < .005, \eta_p^2 = .027$), which is qualified by a significant cue by condition interaction ($F(1.971, 402.061) = 3.221, p < .05, \eta_p^2 = .016$). Follow-up contrasts on the interaction effect show that, for the fear condition, there were no significant differences in accuracy after the various cues (all $p > .50$). However, in the sad condition accuracy

was significantly better following a green cue ($M = 90.4\%$) than after either a red ($M = 87.1\%$) or yellow ($M = 88.3\%$) cues, both $p < .01$. This pattern of results supports earlier findings, suggesting that fearful stimuli prevent attention shifts, while other stimuli (e.g., sadness) allow for the engagement or disengagement of attention.

Emotion	Cue	Picture	Accuracy	Std. Error	Reaction Time	Std. Error
Fear	green	negative	88.8%	1.8%	487.24	12.34
		positive	89.1%	1.9%	455.97	8.66
	red	negative	88.6%	1.8%	465.86	8.75
		positive	88.6%	2.0%	482.60	11.91
	yellow	negative	86.9%	2.0%	458.91	9.94
		positive	90.0%	1.9%	458.72	9.03
Sadness	green	negative	91.1%	1.8%	465.12	12.34
		positive	89.8%	1.9%	460.28	8.66
	red	negative	88.1%	1.8%	454.82	8.75
		positive	86.2%	2.0%	459.37	11.91
	yellow	negative	87.6%	2.0%	450.66	9.94
		positive	89.0%	1.9%	456.45	9.03

Table 2.2: Mean Accuracy and Reaction Time

In addition to the significant cue by condition interaction, there was also a significant picture by condition interaction ($F(1.000, 204.000) = 4.262, p < .05, \eta_p^2 = .020$). Follow-up contrasts show that in the fear condition, accuracy following a positive picture was marginally better ($M = 89.3\%$) than after a negative picture ($M = 88.1\%$) $p = .063$, but within the sad condition, accuracy after a negative picture ($M = 88.9\%$) was no different than after a positive picture ($M = 88.3\%$), $p > .25$.

Finally, replicating the previous study, there is a significant cue by picture interaction ($F(2.000, 408.000) = 4.086, p < .05, \eta_p^2 = .020$), such that for negative pictures accuracy after a green cue ($M = 90.0\%$) is significantly better than after a yellow cue ($M = 87.3\%$) $p < .01$, and marginally better than after a red cue ($M = 88.3\%$), $p = .062$. For positive pictures, performance is significantly worse following a red cue ($M = 87.4\%$) than after either a green ($M = 89.4\%$) or yellow ($M = 89.5\%$) cue, both $p < .05$. The three-way interaction between condition, cue and picture was not significant.

This pattern of accuracy results is somewhat different than that which was observed in the first perceptual identification study. The most striking difference is that the fear condition showed no differences in accuracy across the three cue types, while sadness showed an improvement in accuracy following a green cue. This arrangement follows somewhat predictably from the characteristics of each of these specific emotions. Fear has survival value (from an evolutionary perspective: Öhman, Flykt and Esteves 2001), and anxiety inducing material can often prompt attention (Smith and Ellsworth 1985). Thus, when participants were anticipating a negative picture (red cue) and were presented with a fear picture, they were unable to shift attention away from the stimulus, resulting in no changes in accuracy across cues. In contrast, within the sad condition participants were able to direct attention selectively—following a green cue accuracy improved, supporting the current theory. This suggests that sadness still permits attentional control, while fear's action tendencies override any emotion regulation attempts which utilize attention. These differences in specific emotions will be discussed further, after reaction time results are reported.

Reaction time. A three-factor mixed ANOVA with cue and picture as repeated measures and condition as the between-subjects factor as predictors was performed on the reaction time data. As in Study 1, the analysis excludes non-responses, and assumptions of sphericity were violated, so Huynh-Feldt adjusted degrees of freedom are reported. There is a significant main effect of cue ($F(1.945, 396.837) = 4.264, p < .05, \eta_p^2 = .020$), such that reaction time after a yellow cue ($M = 456.19$ msec) is significantly faster than after either a green ($M = 467.15$ msec) or red ($M = 465.66$ msec) cue, both $p < .01$. This result suggests that individuals are shifting attention following the red and green (informative) cues, in anticipation of the emotional stimulus.

The main effect of cue is qualified by a significant interaction between cue and picture, ($F(2.000, 408.000) = 5.846, p < .005, \eta_p^2 = .028$). Follow-up contrasts on the interaction effect show that following a green cue, reaction time was significantly faster following a positive picture ($M = 458.12$ msec) than after a negative picture ($M = 476.18$ msec), $p < .01$. Following a red cue, the reverse is true—reaction time is marginally faster after a negative ($M = 460.34$ msec) than after a positive ($M = 470.98$ msec) picture, $p = .08$. Reaction times following a yellow cue did not vary according to picture valence. This pattern of results is generally similar to that of the first attention shift study, in that mismatches (e.g., red cue with a positive picture) are particularly harmful to responses, suggesting that participants are shifting their attention in anticipation of one event and then must change their strategy upon realization of the actual emotional event.

Finally, there is a marginally significant three-way interaction between condition, cue, and picture, ($F(2.000, 408.000) = 2.479, p = .085, \eta_p^2 = .012$). Follow-up contrasts on the interaction effect show that, within the fear condition, following a green cue,

reaction time was significantly faster following a positive picture ($M = 455.97$ msec) than after a negative picture ($M = 487.24$ msec), $p < .001$. Following a red cue, the reverse is true—reaction time is significantly faster after a negative ($M = 465.86$ msec) than after a positive ($M = 482.60$ msec) picture, $p = .053$. Reaction times within the sad condition did not differ. This pattern reflects that of the first study, in that mismatches between the cue and the picture (i.e., green cue, negative picture) led to slower response times.

Discussion

Taken together, these results suggest that different patterns of attentional shifts are occurring within the fear and sadness conditions. First, it is important to note that speed (response time) and accuracy are usually traded off in response choice tasks such as this one (Fitts 1966). In particular, if an individual emphasizes speed of response, accuracy will typically decrease, while an emphasis on accuracy will often increase the length of response time (Fitts 1966; Meyer, Smith, and Wright 1982). Across emotion conditions, the reliable cue by picture interaction emerged on both accuracy and response time. In particular, for negative pictures, when preceded by a green cue, participants were slow to respond, but more accurate than after a red or yellow cue. This represents an emphasis on accuracy, at the detriment of speed—such that participants are carefully discriminating the stimulus, but sacrificing speed of response.

Interestingly, when participants saw a positive picture, if it had been preceded by a red cue they were slower, but also more inaccurate. This result is counter to the typical speed-accuracy trade off, in that if participants slowed their response, they should be

more accurate. This was not the case, suggesting that participants had diverted attention away from the target, and were slower not because of more careful processing of the target, but because of the removal of attention, thus leading to more inaccurate responses. This pattern of results strongly supports the theory, in that participants were anticipating a pleasant picture but were presented with a negative one—presumably the most undesirable cue-picture combination. On these trials, we see both longer response time *and* lower accuracy, meaning that participants had diverted attention away from the target altogether, maintaining an emotion regulation mechanism.

In addition to the divergence in speed and accuracy via the cue by picture interaction, this study also suggests that each emotion impacted attentional processes differently. In particular, the fear condition impacted reaction times, enhancing the differences across cue conditions as discussed above. Within the fear condition, green cues followed by a negative picture were particularly slow, but red cues followed by a positive picture were slow as well. This mismatch effect was not seen in the sad condition, suggesting that in the fear condition participants were particularly “hurt” when their attention did not match the picture presented. This is consistent with a vigilance account, in that fear prompts selective attention toward threatening stimuli (Frijda et al. 1989) and that when a mismatch between the cue and picture occurred, participants had to override the shift which had been induced by the cue, thus slowing responses.

In contrast to fear’s impact on reaction time, participants’ ability to correctly discriminate the target was significantly impacted by sadness, in that it interacted with cue type. In the sad condition we see the first evidence for attentional engagement in that accuracy was highest following a green cue as compared to both red and yellow cues.

This suggests that when anticipating a positive picture, participants directed their attention onto the target, allowing them to better discriminate whether the T was right-side up or upside down following the picture. Within the fear condition, there were no differences across cues.

Why might these differences in emotion conditions be appearing? It is important to consider the underlying appraisals of each emotion. Upon presentation of a fearful picture, participants' attention was focused upon the fear-eliciting stimulus, as has been seen in many evolutionary theories of selective attention and visual predisposition toward survival-related stimuli (e.g., "detecting the snake in the grass," Öhman, Flykt and Esteves 2001). Response time is likely to be more sensitive to fear responses in that threatening stimuli should prompt a rapid response (Frijda 1986), while sadness is characterized by more deliberative processing and would be reflected in changes in accuracy (Tiedens and Linton 2001).

In addition to the two discrete emotions differentially responding to the two dependent variables (fear – response time, sadness – accuracy), there were also different effects of cue and picture within each condition. In the sadness condition, participants were less impacted by the match between cue and picture, but rather were influenced by the cue alone. Sad condition participants were better able to discriminate the target following a green cue, while fearful participants' accuracy did not differ by cue type. This result suggests that the cue prompted participants in the sad condition to shift their attention, (namely, directing attention following a green cue) while participants in the fear condition were unable to do so. In contrast, fear condition participants relied on the cues to signal what type of picture was coming (positive or fearful), and thus were more

impacted when the cue did not match the picture presented. This is why the cue by picture interaction was seen in the fear condition but not in the sad condition.

One question that could be raised based upon these results is whether exposure to the specific emotion stimuli created a feeling of sadness or fear in participants, and if it is this cumulative emotion that led to differences in performance. One could postulate, for instance, that sadness leads to deliberative processing, and thus better accuracy in general, while fear leads to avoidance and thus faster responses overall. There are various data points which would repudiate these arguments, and thus support an attentional story instead. First, there was no main effect of condition—if sadness had led to more deliberative processing of targets and fear to more avoidant responses, there should have been a main effect such that sad participants had overall higher accuracy and slower responses, while fear participants had lower accuracy and faster responses. Neither main effect was found. In addition, the specific interplay of fear, sadness, response time and accuracy requires a more detailed account than simple ambient emotions. Participants in each condition were responding in distinct manners, to both the cues and the pictures. These differences can only be accounted for via differences in attention to the target, and the accompanying ability to accurately respond to target presentation.

However, the question of experienced emotion remains unanswered after these two studies. Participants' emotional experience was not assessed with regards to specific attentional processes, so while these two studies support hypotheses 1a and 1b, they do not address whether attention shifts can influence experienced emotion. In the following two studies, attention deployment strategies were manipulated before participants were exposed to an emotional stimulus, and then emotional experience was measured post-

exposure. This design allows assessment of whether attention deployment is an effective emotion regulation strategy, influencing actual emotional experience.

2.4 Effectiveness of Attention Deployment

This set of studies was designed to test whether directing (diverting) attention toward (away from) an emotional stimulus will increase (decrease) the intensity of the subjective emotional experience. In the two studies described below, similar procedures, manipulations and measures were used, so a general procedure section will be described. For both studies, the design was a 3 (attention: concentration, distraction, control) x 3 (emotion: fear, sad, neutral) between-subjects design. Sadness and fear were chosen as the target emotions as they are commonly examined within the marketing literature (e.g., Raghunathan, Pham and Corfman 2006), as well as having distinct appraisals which may lead sadness to be more amenable to regulation via attentional shifts.

General Procedure

Participants were informed that they would be participating in a study on the computer to better understand their reactions to film clips. Following the procedure described by Gross and Levenson (1993), participants first watched a one-minute clip from a neutral film (“Sticks”; Gross and Levenson 1993) after which they filled out a scale asking them about their emotional state, thus putting all individuals in the same emotional state before any attention manipulations. After completing an emotion rating

scale (adapted from Burke and Edell 1988), participants then received the first experimental manipulation: attention instructions. Participants received one of three distinct sets of instructions regarding how they were to watch the second film: either Watch (as if you were watching television at home: control condition), Concentrate (focus carefully on the facial expressions and gestures of the actors), or Distract (focus carefully on the setting and environment, set design). These instructions were designed to encourage participants to focus on emotionally relevant stimuli (faces) or on less emotionally charged stimuli (scenes). In this way, the concentrate conditions represent directing attention toward emotional stimuli and the distract conditions represent diverting attention away from emotional cues. After reading these instructions, participants proceeded to watch the second film, generally a five-minute film clip (see Table 2.1 for specific study stimuli). These films have been used in prior research (Andrade and Cohen 2007) and have been shown to reliably evoke fear, sadness and neutral emotions.

After viewing the second emotion-inducing clip, participants filled out a set of scales: (1) self-reported emotions, (2) evaluation of the film, (3) open-ended recall of the film, (4) true-false statements about the film's content, and (5) manipulation checks. The self-reported emotions consisted of twelve items rated on a 9-point scale from not at all to extremely: happy, depressed, agitated, anxious, sad, dejected, afraid, relaxed, cheerful, angry, bored, and amused.

Attention Deployment as an Emotion Regulation Strategy: Study 1

Participants and Procedure. This study involved 235 participants who received \$10 for their participation in an hour-long session in the experimental lab. During that session, participants completed a set of studies, including this one. Participants were randomly assigned to one of three attention conditions, and they then viewed one of three emotional films. These films have been used in prior research, and have been shown to reliably elicit the following emotions (Andrade and Cohen 2007): sadness (*Top Gun*), fear (*The Exorcist*), or neutral emotions (*African Rainforest Documentary*). The key dependent variables are participants' subjective ratings of emotional experience, after viewing the film.

Manipulation checks. Two items were used to assess the degree to which participants either paid attention to the faces of characters or to the scene/set design in the film: "I mostly watched the facial expressions of the actors" and "I mostly watched the set design and film layout". The two seven-point scales were combined into one index of looking behavior ($\alpha = .61$), where more positive scores indicate an emphasis on the facial expressions (emotionally relevant stimuli) and negative scores indicate an emphasis on the scenery (less-emotional stimuli). This looking behavior score was subjected to a two-way ANOVA with emotion and attention as predictors, and significant main effects of both emotion ($F(2, 226) = 15.050, p < .001, \eta_p^2 = .118$) and attention ($F(2, 226) = 14.952, p < .001, \eta_p^2 = .117$) emerged, but the interaction was not significant. While sad

participants were, in general, more likely to pay attention to faces, so too were participants who received the concentration instructions.

Experienced emotions. A factor analysis was run on the 12 emotion items that participants responded to after viewing the emotion eliciting film. Four components were extracted: positive emotions, fear, sadness, and boredom. Results specific to each emotion are discussed in turn. The four items which loaded onto the positive emotions factor were averaged to create an index of positive affect (happy, relaxed, cheerful, amused: $\alpha = .85$). Two analyses were run on this emotion index, as well as the other emotion scores. First, the positive emotion index was subjected to a two-way ANOVA with emotion and attention as predictors. Only a significant main effect of emotion emerged ($F(2, 226) = 18.171, p < .001, \eta_p^2 = .139$), whereby participants who viewed the neutral film reported higher levels of positive emotions ($M = 4.16$) than participants in either the sad ($M = 2.80$) or fear ($M = 2.71$) conditions. Second, the positive emotion index was subjected to a two-way ANOVA with emotion and looking behavior (median split of manipulation check) as predictors. A significant main effect of emotion emerged again ($F(2, 229) = 11.448, p < .001, \eta_p^2 = .091$), but a marginal main effect of looking behavior also appeared ($F(1, 229) = 2.548, p = .112, \eta_p^2 = .011$), whereby participants who reported focusing on faces during the film reported lower positive emotions ($M = 2.84$) than those focusing on scenes ($M = 3.51$). This result is consistent with predictions, in that those who directed attention toward emotional cues (faces) felt less positive when viewing a negative film, than did those whose attention was diverted away from emotional cues (scenes).

Three items loaded onto the sadness factor, and were averaged to create a composite sadness index (depressed, sad, dejected: $\alpha = .89$). The sadness index was subjected to a two-way ANOVA with emotion and attention as predictors. Only a significant main effect of emotion emerged ($F(2, 226) = 34.072, p < .001, \eta_p^2 = .232$), whereby participants who viewed the fear ($M = 4.06$) and sad ($M = 5.61$) films reported higher levels of sadness than participants in the neutral ($M = 3.11$) condition, again, the fear and sad conditions did not differ. Second, the sad index was subjected to a two-way ANOVA with emotion and looking behavior (median split of manipulation check) as predictors. A significant main effect of emotion emerged again ($F(2, 229) = 21.690, p < .001, \eta_p^2 = .159$), and looking behavior also appeared ($F(1, 229) = 6.114, p < .05, \eta_p^2 = .026$), whereby participants who reported focusing on faces during the film reported higher sadness ($M = 5.04$) than those focusing on scenes ($M = 3.69$), consistent with the proposed theory.

Four items loaded onto the fear factor, and were averaged to create a composite fear index (agitated, anxious, afraid, angry: $\alpha = .86$). Again, two analyses are reported on this score. First, the fear index was subjected to a two-way ANOVA with emotion and attention as predictors. Only a significant main effect of emotion emerged ($F(2, 226) = 81.232, p < .001, \eta_p^2 = .418$), whereby participants who viewed the fear ($M = 5.74$) and sad ($M = 4.05$) films reported higher levels of fear than participants in the neutral ($M = 2.53$) condition, although the difference between fear and sad was not significantly different. Second, the fear index was subjected to a two-way ANOVA with emotion and looking behavior (median split of manipulation check) as predictors. A significant main effect of

emotion emerged again ($F(2, 229) = 65.613, p < .001, \eta_p^2 = .364$), while looking behavior remained insignificant ($F(1, 229) = 1.587, p = .209, \eta_p^2 = .007$), again suggesting that fear responses may be resistant to attention shifts.

While the attention manipulation itself did not seem to influence experienced emotion itself, individuals were classified on their self-reported viewing behavior (faces versus scenes) and this taxonomy does reflect the hypothesized pattern of emotional reactions. Specifically, participants who reported watching faces (emotional stimuli) experienced lower levels of positive emotion and higher levels of sadness than those participants who watched the scenes (less emotional stimuli). Fear responses seem to be relatively immune to attentional shifts—supporting the proposed framework which noted that different emotions may be more or less influenced by each specific type of emotion regulation strategy.

Overall, these results are encouraging, in that they are the first demonstration that shifting attention within an emotional experience can change the emotional experience itself. However, it is concerning that the direct manipulation of attention did not seem to drive the results. One possible reason may be that even though participants were focusing away from the facial expressions of the actors in the films, the soundtrack (listened to via headphones) as well as the scenes also managed to convey an emotional tone. Additionally, the plot may have been quite engaging during the five-minute clip, further impeding participants' ability to voluntarily shift their attention throughout the entire clip (note that in other emotion regulation studies, the film clips are generally shorter: 1-3 minutes). Finally, participants' familiarity with the emotional stimuli—nearly 50% of participants in the fear and sadness conditions had seen the films before—could have led

to demand effects, where participants over-reported the emotion that they knew the film was meant to elicit. To address these three concerns, the second attention deployment efficacy study used stimuli which were unfamiliar to all participants, for a shorter duration, and without a plot-line or musical accompaniment.

Attention Deployment as an Emotion Regulation Strategy: Study 2

Participants and Procedure. This study involved 214 participants who received \$10 for their participation in an hour-long session in the experimental lab. During that session, participants completed a set of studies, including this one. Participants were randomly assigned to one of three attention conditions (same instructions as in study one), and they then viewed one of three slideshows. These slideshows were comprised of pictures taken from the International Affective Picture System. These pictures have been rated and validated on three affective dimensions: valence, arousal, and dominance (IAPS: Lang, Bradley and Cuthbert 2005). In order to classify the pictures as relating to specific emotions (e.g., fear, sadness), in a pretest 119 participants rated 58 negatively-valenced pictures on three scales: sad, fear, neutral. These ratings were used to select the 40 pictures that comprised the stimuli in this study—one set of 20 sad pictures and one set of 20 fearful pictures. Each set of twenty pictures was used to create a slideshow, where every photograph was presented on-screen for five seconds, before advancing to the next picture. Thus, three slideshows were created to manipulate specific emotions (fear, sadness, and neutral), and the duration of each slideshow was one minute 40 seconds. All pictures included at least one person in the photograph. By creating the

emotional stimuli with the IAPS pictures, this study avoids four issues from the previous study: familiarity with stimulus, plotline, music score and duration. The key dependent variables are participants' subjective ratings of emotional experience after viewing the slideshow.

Manipulation checks. Again, the two-item manipulation check for attention was measured, and combined to create a looking behavior index. This combination, looking behavior, allowed us to classify participants as either paying attention to faces or scenes, by their own account. Looking behavior was subjected to a two-way ANOVA, and significant main effects of both emotion ($F(2, 204) = 4.858, p < .01, \eta_p^2 = .045$) and attention ($F(2, 204) = 4.413, p < .05, \eta_p^2 = .041$) emerged. While sad participants were, in general, more likely to pay attention to faces, so too were participants who received the concentration instructions.

Experienced emotions. A factor analysis was run on the 12 emotion items that participants responded to after viewing the second slideshow, as in the previous study. Three components were extracted, positive emotion, fear and sadness, and each will be discussed. Four items loaded onto the positive emotion factor and were averaged to create a positive emotion index (happy, relaxed, cheerful, amused: $\alpha = .88$). First, the positive emotion index was subjected to a two-way ANOVA with emotion and attention as predictors. A significant main effect of emotion emerged ($F(2, 204) = 92.729, p < .0001, \eta_p^2 = .476$), whereby participants who viewed the neutral slideshow reported higher

levels of positive emotions ($M = 4.31$) than participants in either the sad ($M = 2.07$) or fear ($M = 2.03$) conditions. This main effect is qualified by a significant interaction between emotion and attention, ($F(2, 204) = 3.366, p < .05, \eta_p^2 = .062$). Follow-up contrasts show that this interaction is driven by the fear condition, where participants in the concentrate condition felt more positive emotions ($M = 2.52$) than those in the watch condition ($M = 1.53$), $p < .01$. This is somewhat in contradiction to the current theory, which contends that concentration should increase the felt emotion—feeling more fear should preclude feeling more positive emotion. There is also a marginally significant difference between distract ($M = 4.66$) and concentrate ($M = 4.05$) in the neutral slideshow condition, $p = .066$.

The positive emotion index was also subjected to a two-way ANOVA with emotion and looking behavior (as in the previous study) as predictors. A significant main effect of emotion emerged again ($F(2, 207) = 75.255, p < .001, \eta_p^2 = .421$), and the effect of looking behavior remained non-significant ($F(1, 207) = 1.891, p = .171, \eta_p^2 = .009$), only directionally supporting the contention that participants who focused on faces during the slideshow reported lower positive emotions ($M = 2.56$) than those focusing on scenes ($M = 2.94$). Since the interaction between emotion and looking behavior did not emerge in this second analysis, it is unclear what the process driving the previous interaction was. These inconsistencies within the fear condition are further described in the discussion section.

Three items loaded onto the sadness factor, and were averaged to create an index of experienced sadness (depressed, sad, dejected: $\alpha = .90$), as in the previous study. This

composite score was subjected to a two-way ANOVA with emotion and attention as predictors. Only a significant main effect of emotion emerged ($F(2, 204) = 74.356, p < .0001, \eta_p^2 = .422$), whereby participants who viewed the fear ($M = 6.16$) and sad ($M = 6.64$) slideshows reported higher levels of sadness than participants in the neutral ($M = 3.52$) condition. Second, the sad index was subjected to a two-way ANOVA with emotion and looking behavior as predictors. A significant main effect of emotion emerged again ($F(2, 207) = 72.857, p < .0001, \eta_p^2 = .413$), and a marginal interaction with looking behavior also appeared ($F(2, 207) = 2.400, p = .093, \eta_p^2 = .023$). Follow-up contrasts showed that participants in the sad condition focusing on faces reported higher sadness ($M = 7.03$) than those focusing on scenes ($M = 6.18$), $p = .029$, providing further support for the proposed theory.

Four items loaded onto the fear factor and were averaged to create a fear index (agitated, anxious, afraid, angry: $\alpha = .88$), as in the previous study. The fear index was subjected to a two-way ANOVA with emotion and attention as predictors. Only a significant main effect of emotion emerged ($F(2, 204) = 101.890, p < .0001, \eta_p^2 = .500$), whereby participants who viewed the fear ($M = 5.97$) and sad ($M = 5.28$) slideshows reported higher levels of fear than participants in the neutral ($M = 2.62$) condition. Second, the fear index was subjected to a two-way ANOVA with emotion and looking behavior as predictors. A significant main effect of emotion emerged again ($F(2, 207) = 95.325, p < .0001, \eta_p^2 = .479$), while looking behavior remained insignificant ($F(1, 207) = 1.971, p = .162, \eta_p^2 = .009$). As in the previous study, this pattern of results suggests that

fear is relatively unaffected by attention shifts, which is predictable given its underlying appraisal tendencies (e.g., close attention).

Similar to the first film study, the direct manipulation of attention does not appear to have clear effects on participants' emotional experience. However, when individuals are sorted by their self-reported viewing behavior (faces versus scenes manipulation check), this categorization tends to reflect the hypothesized pattern of emotional reactions. Examining just those participants who saw the sad slideshow, those focusing on the facial expressions in the photographs reported lower levels of positive emotion (directional: $p = .117$), higher levels of general negativity (significant: $p = .013$), higher levels of fear (significant: $p = .018$), and higher levels of sadness (significant: $p = .029$) than those participants who watched the scenes. For those participants in the sad condition, at least, there is emerging support for the current theory. In contrast, attention shifts do not seem to affect the experience of fear.

Why might the manipulation of attention not be working? One possibility is that the manipulation is not adequate in shifting individuals' attention away from emotional stimuli. At the onset of the experiment, participants were instructed to watch the slideshow, as they would be answering questions about it afterward. Performance concerns could be creating a general motivation to focus upon the pictures. Additionally, the instructions to focus on the scenes may not have taken participants' attention far enough away from emotional stimuli. Indeed, many of the scenes involved squalid conditions that themselves could elicit sadness or fear. Finally, attention is tied closely to the visual system, particularly in a study such as this one, and the eyes (and attention) tend to move toward and away from stimuli in short saccades (Fischer and Breitmeyer

1987). For this reason, participants may have switched away from the emotional stimulus, and then moved back to it, in an oscillatory manner. This set of studies does not assess how participants' attention changed, and must simply rely on self-reports to assess what individuals focused upon. In the first set of studies, attention was measured directly, and demonstrated that individuals organically show a pattern of attention deployment which would be predicted by the emotion regulation literature. Specifically, individuals shifted their attention away from undesirable emotional stimuli, and focused their attention upon desirable emotional stimuli.

While the two studies reported here do not perfectly assess the efficacy of attention shifts as an emotion regulation strategy, they do offer promising insight into the process of managing emotion in the course of an ongoing emotional experience. Future studies might capture the effects of attention deployment on emotion experience by using different manipulations. For instance, Morrow and Nolen-Hoeksema (1990) manipulated dysphoric individuals' attention by inducing either a ruminative or distracted perspective and then measured the impact on depressive symptoms. Their manipulations could be adapted for non-clinical populations and non-depressive affect, as another method to manipulate attention in a systematic manner. Additionally, the degree to which individuals seek out activities or products which promise to either focus attention on or distract it away from emotional stimuli could be assessed as an index of individuals' beliefs about attention as an effective emotion regulation strategy. Either of these suggested directions could further explore the current findings, which suggest that strategically shifting attention can indeed manage an ongoing emotional experience.

Summary of Studies

The two sets of studies presented so far provide preliminary evidence for attention deployment as an emotion regulation strategy. The first set of studies, perceptual identification and repeated recovery from threat, demonstrate that participants naturally shift their attention away from undesirable emotional stimuli leading to performance decrements on a central task. The second version of this study type began to investigate the impact of discrete emotions on attention shifts. Specifically, the emotional stimuli were not categorized as simply positive or negative, but rather fearful, sad, or positive. Different patterns of attention emerged for the fear and sad pictures; fearful pictures sped up responses (alerting individuals) while sad pictures increased their accuracy (increased focal processing). In the watching films studies, participants who reported focusing on facial expressions experienced higher levels of emotion than did those participants who focused on the scenery and set design. This pattern was particularly robust for the sad emotion conditions, whereas in the fearful conditions little change in experienced emotion occurred with attentional shifts.

Taken together, these studies imply not only do individuals actively use attention shifts to avoid undesirable emotional stimuli, but also that attention deployment can be used as an effective emotion regulation strategy. Additionally, there appears to be a connection between the effectiveness of attention shifts and specific emotions: sadness was much more responsive (i.e., reduced) when individuals shifted their attention than was fear. Certainly, neither set of studies completely addresses the efficacy of attention deployment as an emotion regulation strategy, but they provide some of the first evidence

that attention shifts are tied to emotion and its experience. With this process in hand, it is now possible to investigate other related questions. For instance, when might individuals employ attention deployment? In the perceptual identification task, participants spontaneously engaged this process, presumably to influence their affective experience during the task. One might also ask if certain discrete emotions are more amenable to being regulated with an attention shift, while others prove persistent despite attention movements. The watching films studies suggested that fear may be especially difficult to regulate with attention—perhaps due to its evolutionary value (Öhman, Flykt and Esteves 2001) and its action readiness of close attention (Frijda et al. 1989). Finally, one may wonder what these attention shifts imply for marketing. As yet, none of the data reported here connects to consumer variables, such as attitudes or persuasion—questions which will be addressed in Chapter 4.

2.7 General Discussion

This chapter focuses on attention deployment as a specific emotion regulation strategy. Not only has attention deployment been under-researched in the psychology literature, but the impact of attention on key marketing variables of interest makes this strategy particularly valuable to consumer research. Two studies utilized a new experimental paradigm that allows measurement of attention in response to emotional stimuli. With a methodology that can capture individuals' attention shifts, these studies showed that individuals naturally shift their attention in response to desirable and undesirable emotional stimuli. This result suggested that attention may be relied upon to

influence consumers' responses to emotional cues. Two other studies illustrated the effect of shifting attention on emotional experience, the first demonstration that attention deployment can in fact change the experience of emotion in healthy adults. For participants exposed to sad stimuli, those individuals who shifted attention away from emotional cues (scene focus) experienced lower levels of sadness than those individuals who directed attention onto emotional cues (face focus). This study paradigm connected the strategy of attention deployment to changes in actual emotional experience. In combination, these studies provide support for the first contribution of this research paper: an explicit discussion of the attention deployment process.

While encouraging, these studies are by no means without limitations. First, the manipulation of attention in the watching films studies was only marginally successful, and the clearest effect of attention on subjective emotion was uncovered by categorizing participants based upon their self-reported viewing behaviors. The attention shift studies strongly support the contention that attention deployment occurs easily and spontaneously, but they did not measure its influence on subjective experience. Across both sets of studies, however, a story begins to emerge that attention deployment can influence felt emotion, and that this strategy comes naturally to participants.

These two sets of studies also implicate a second contribution: certain emotion regulation strategies may be more or less appropriate for managing specific emotions. In both the attention measurement and watching films studies, there were differential effects of the attention deployment strategy on sadness versus fear. Fear showed to be remarkably resistant to influence with attention shifts, while sadness acted in a malleable manner, as hypothesized. This suggests an interesting direction of research: can certain

emotions be managed better with some emotion regulation strategies than others? In general, the emotion regulation literature has had little to say about whether the success of different strategies depends on the specific emotion being regulated. The current framework proposes that the underlying appraisals of specific emotions can be used to infer which emotion regulation strategies are most appropriate (effective) for each specific emotion. Two dimensions were discussed, attentional activity and avoidance, as they have bearing on the actions involved in the attention deployment strategy at hand. However, additional appraisal dimensions may implicate other strategies. For instance, sadness is often characterized by feelings of helplessness and inability to influence one's situation (Frijda et al. 1989). These features may make sadness particularly difficult to regulate via situation selection or situation modification, which require the individual to initiate a change in circumstances. Indeed, some current work in psychology suggests that feelings of helplessness and apathy undermine motivation to engage in activities that reduce sadness (Wood et al. 2009), suggesting that it may require regulation via other specific strategies, such as attention deployment. Future research could explore the relationships between emotion regulation strategies and specific emotions, developing a typology of strategy-emotion pairings for the most effective emotion management.

As this discussion highlights, the current understanding of attention deployment and its use as an effective and appropriate emotion regulation mechanism is still in its infancy. The current chapter is the first to investigate patterns of attention shifts in non-clinical patients as they interact with emotional stimuli. Additionally, this work connects attention shifts to the ongoing experience of emotion. From this foundational process, many further research directions are possible, from examining the effect of attention

deployment on specific emotions, to whether attention deployment is the mechanism involved in clinical stress-reduction interventions, to finally relating attention deployment to general processes of executive attention control. The current work merely scratches the surface of these issues, but provides not only a solid theoretical ground from which further investigations can be built, but also by providing a unique methodology which captures attention shifts within an emotion regulation paradigm. The next two chapters expand the discussion from a particular emotion regulation strategy to understanding when an individual would even start any kind of emotion regulation process. Chapter 3 presents social identity as a motivating force behind the desirability of emotions, and Chapter 4 will then connect these processes to marketing and consumer behavior.

Chapter 3

Feeling like My Self: Emotion Profiles and Identity

“A man who is master of himself can end a sorrow as easily as he can invent a pleasure. I don’t want to be at the mercy of my emotions. I want to use them, to enjoy them, and to dominate them.” Oscar Wilde (1992, 88)

Research has shown that emotion regulation is an important and common aspect of everyday life, enabling individuals to actively manage their emotional experiences (e.g., Clore and Robinson 2000; Frijda 1986; Larsen 2000; Ochsner and Gross 2005). The ability to successfully regulate one’s emotions is associated with a variety of positive outcomes: lowered aggression following rejection (Ayduck, Mischel, and Downey 2002), healthier attachment styles (Harman, Rothbart, and Posner 1997), and shortened or less severe depressive episodes (Just and Alloy 1997). Research in this area has mainly focused on *how* individuals manage their emotions: the strategies and psychological processes engaged in the emotion regulation system (e.g., Clore and Robinson 2000; Gross 1998b). The underlying assumption in the majority of this work has been that individuals have a hedonic emotion regulation goal: to reduce or eliminate negative and unpleasant emotions (Higgins 1997; Larsen 2000).

However, there are situations when experiencing negative emotion can be helpful (Tamir 2005). Emotions are complex motivational structures, with specific appraisal

tendencies and action readiness schemas associated with each discrete emotion (Frijda, Kuipers, and ter Schure 1989), and these emotion-specific actions can be leveraged to aid performance on other tasks (Tamir, Mitchell, and Gross 2008). Thus, individuals may be motivated to regulate their emotions in order to achieve *instrumental* outcomes, rather than hedonic ones.

To date, the work on instrumental emotion regulation has focused on the task performance as the driver behind wanting to experience negative emotions. For instance, Tamir and colleagues (2008) told participants that they would be engaging in a game with other participants, and that they could choose to listen to music prior to the task beginning. Those participants that learned the game would be a competitive zero-sum game chose to listen to more angry music than those individuals who learned the game would be a cooperative win-win game. This data suggests that people have beliefs about when specific emotions can enhance specific actions—such as anger creating an aggressive mindset, appropriate for competitions. While task dimensions represent one reason could want to experience negative emotions, there may be other situations that encourage instrumental emotion regulation.

The current work will propose an alternative source for instrumental emotion regulation goals: social identity. Social identities are self-categorizations derived from group membership that individuals use to define themselves and their behaviors (Tajfel 1982). Importantly, research on social identities has found that identities are complex associative networks comprising of attitudes, beliefs, and behaviors (e.g., Kleine, Kleine, and Kernan 1993). When an identity is active, individuals are motivated to maintain consistency with the behaviors and beliefs associated with that identity. As of yet, no one

has asked if specific discrete emotions are also contained within an identity's associative network, and if so, what the motivational consequences of these associations would be.

Bridging the gap between the social identity literature and discrete emotions research, I suggest that specific emotions are associated with certain social identities. For instance, a mother is typically associated with love, warmth and joy, but the same woman as a lawyer may be expected to express aggression and even anger (Simpson and Stroh 2004). Importantly, as these emotions are incorporated into the identity structure, experiencing the emotions linked to the identity can assist in the enactment of that identity. Thus, individuals may be motivated to engage in emotion regulation in order to support their active social identity.

To address these questions, this chapter tests the basic proposition that there are associations between social identities and specific discrete emotions, and that these links create an *emotion profile* for each particular social identity. Building from the core idea of emotion profiles yoked to social identities, the research then tests the downstream effects of emotion profiles: how these relationships impact the various components of emotion experience: appraisal, contagion, motivation, and regulation. In what follows, the connections between social identities and emotions (emotion profiles) are discussed in greater detail, leading to a series of experiments which test the central proposition.

3.1 Emotion Regulation

As discussed in the introduction, theorists have described five distinct emotion regulation strategies, distinguished by the points at which they intervene in the emotion generation process. *Situation selection* is the most forward-looking type of emotion

regulation, whereby an individual approaches (avoids) circumstances which would lead to desired (undesired) emotional experiences. Once a given situation has been entered, an individual can then engage in *situation modification* where he alters aspects of the emotionally loaded external environment, such as a dieter avoiding the cookie aisle and its accompanying guilt. Within a situation, individuals may shift their attention toward and away from emotional cues, a process of selective *attention deployment*, as when people change the channel when shows become too graphic. Individuals may also alter their internal appraisal of the conditions, such as mentally distancing themselves from upsetting content (Gross 1998a). Frequently called *reappraisal*, some forms of this strategy may enhance processing of otherwise disturbing material (protective framing: Andrade and Cohen 2007). Finally, if emotion regulation did not happen at other points along the elicitation process, an individual may act directly upon the components of an emotional response: physiological, subjective and expressive reactions. Often, *response modulation* involves hiding or enhancing a facial expression, but may also include self-medicating or other behaviorally-focused actions. The response modulation strategy is typically deemed the least effective type of emotion management, as it seldom changes the experience of emotion (Gross and Levenson 1993) but rather merely hides the internal emotion states from the outside world.

Regardless of the efficacy of each strategy, these represent a variety of ways in which an individual may alter the course of an emotional experience. Thus, emotion regulation theories provide a useful framework for understanding the ways a person might manage his or her emotions in order to achieve either hedonic or instrumental outcomes. While this perspective describes a variety of strategies about *how* individuals

change emotions, it does not provide an answer to the question of *when* individuals would be motivated to do so. Rather than take a task-oriented perspective on instrumental emotion regulation, there may be elements of the individual that provide emotion regulation goals. One perspective that provides a rich theory for understanding the individual and predicting behavior is social identity theory.

3.2 Social Identity

Social identity theory proposes that individuals possess a sense of self (identity) that arises from their awareness of themselves as an individual (personal identity) and from their membership in various social groups (social identity: Tajfel 1982). Individuals rely on their social identity to provide social categorization, self-definition, and behavioral guidance (Markus and Wulf 1987). There are two essential characteristics of social identity that impact its influence on an individual's behavior: malleability and self-importance. The malleability of social identity refers to the fact that context can influence which specific identities are actively guiding behavior (Markus and Kunda 1986). An individual has a variety of identities which may be salient at any given time (e.g., sister, student, volunteer, tennis player), but elements in the person's surroundings may make her more likely to view herself in terms of one social membership over another (e.g. feeling like an athlete on a tennis court, but a student in the library), and this heightened level of identity activation will guide her behavior in identity-congruent manners (Markus and Kunda 1986; Tajfel 1982). In addition to identities varying in salience due to contextual factors, identities can also vary in self-importance or the degree to which an

individual associates that identity as part of him- or herself (Reed 2004). Critically, those identities that are more self-important are more likely to guide behavior and define the self than those that are less important (Aquino and Reed 2002).

Social identities are thus mental representations that individuals use to define themselves and, further, to guide behavior (Reed 2004; White and Dahl 2007). Much of the momentum behind research on social identities has been focused on understanding inter-group conflict and prejudice—the so-called “in-group love, out-group hate” phenomenon (e.g., Halevy, Bornstein and Sagiv 2008). As social identities arise from group membership, many of the outcomes of interest have focused on these group-level effects, such as group loyalty (e.g., Van Vugt and Hart 2004), involvement in structured organizations (e.g., Sidanius, Van Laar, Levin, and Sinclair 2004), and willingness to penalize out-groups or favor the in-group (Halevy et al. 2008). Other researchers have focused on social identity’s benefits—and costs—to the individual, from fostering a sense of belonging (Van Vugt and Hart 2004), to enhancing self-esteem and providing a buffer from threat (Ethier and Deaux 1994), or in other cases, engendering a sense of victimization and isolation (Sidanius et al. 2004). For instance, Ethier and Deaux (1994) followed Hispanic students during their first year at a predominantly white university, and examined the strength of students’ identification with their ethnic heritage as a predictor of downstream outcomes. Students who had an initially high level of identification with their ethnic roots were more likely to join Hispanic student organizations, had higher self-esteem, and ultimately strengthened their identification with the ethnic group. In contrast, those students with lower Hispanic identification perceived their ethnicity as a threat (hindering their ability to fit into the social context),

had lowered self-esteem, and ultimately attempted to reduce their connections to the ethnic identity.

In addition to social judgments and interpersonal outcomes, other work has emphasized that individuals can use products to define their identities, and thus consumption acts can become one form of self-definition (Escalas and Bettman 2005; Laverie, Kleine, and Kleine 2002). For instance, Escalas and Bettman (2005) found that individuals formed more self-brand connections with brands that were related to their identity than with brands irrelevant to their identity, implying that the brands became incorporated into the associative network of that particular identity. Additionally, consumers not only select products that match their self-image, but also avoid those products that are inconsistent with their self-image (Berger and Heath 2007; White and Dahl 2007).

Both of these streams emphasize that when an identity is salient, it activates associated attitudes, behaviors, and beliefs—which then influence individuals' responses, behaviors, and attitudes at both the individual and group levels. But these areas have overlooked whether particular emotions are associated with specific identities, and whether the pursuit of these specific emotions can influence consumption. The next section introduces a new construct, *emotion profiles*, and describes why social identities may have associations to specific emotions which then guide behavior and emotion regulation.

3.3 Emotion Profiles

Research has demonstrated that emotions can be represented within memory as nodes interconnected with broader associative networks (Bower 1981). Additionally, social identities have been conceptualized as associative networks, with interconnections between the social group and attitudes, behaviors, and beliefs (Kleine, Kleine, and Kernan 1993). The current research posits that certain emotions are connected to specific social identities in an associative network. Why might emotions be connected to identities? There are two possible reasons: one, there may be identity “prototypes” which are affiliated with specific discrete emotions (e.g., Mike Tyson is an athlete and is always angry), secondly, certain discrete emotions may have action tendencies (Frijda 1986; Frijda, Kuipers, and ter Schure 1989) which correspond to the goals of that identity (e.g., anger leads to the desire to overcome obstacles and punish others—qualities which may aid athletes during competition). These two ways that emotions are affiliated with identities are not mutually exclusive, and both suggest that specific emotions may be seen as instrumental to the expression of a particular identity, leading to a set of emotional prescriptions or *emotion profiles* associated with that social identity.

For instance, a mother should be warm and caring, but that same woman in the boardroom is expected to be coolly professional and possibly even aggressive (Simpson and Stroh 2004). Notably, conforming to the salient emotion profile enhances enactment of the current identity—a woman who is warm and caring is more “motherly” than one who is aggressive (Smith-Lovin 1990). Being warm enhances a woman’s match with the mother identity both because it is part of the prototypical mother identity (Cuddy, Fiske,

and Glick 2001) and because warm emotions may augment feelings of affiliation and care (Smith-Lovin 1990)— key goals for a mother. In this way, conforming to the salient emotion profile is a way in which emotions can be used instrumentally to enhance identity-consistency. Two separate research domains support the associations between identities and emotions and the existence of emotion profiles, whereby an active identity ordains what emotions can or cannot be expressed, and at what intensity (cf. “feeling rules” in Hochschild 1979)¹.

While the concept of emotion profiles is novel, cross-cultural psychology provides some evidence supporting identity-emotion associations. Research has identified differences in the perception (Matsumoto 1993), expression (Markus and Kitayama 1991), and desirability (Triandis 1989; Tsai 2007) of discrete emotions based on cultural variations in the self-concept. Thus, self-concepts associated with different cultures distinctly value different types of affect (Tsai 2007). These diverging affective profiles seem to stem from a desire to conform to specific norms (Markus and Kitayama 1991). Cultural identification is not necessarily a social identity, though it may be so when individuals consider their membership in a national, ethnic, or religious group a component of their self-concept. Importantly, these research streams suggest that

¹ Note the use of the term “emotion profile” rather than “feeling rule” as in Hochschild’s (1983) emotion labor work and the accompanying research in organizational behavior. The term emotion profile has been chosen for two reasons: first, to suggest that there are a set of emotions which may be associated with each individual identity rather than a one-to-one emotion-identity relationship which may be implied in the term feeling rule. Secondly, feeling rules are generally seen as organizationally created and supported norms, which are external to the individual and proscribe the appropriate emotions that are to be expressed by the employee while executing the job. In contrast, emotion profiles are conceptualized as associated with the identity that is internal to the individual, and may be idiosyncratic to that individual’s perceptions of the identity itself. In order to separate the theoretical underpinnings of these ideas, the term emotion profile will be used.

emotions are tied to the self, and that these associations create a motivation to conform to or preference for these cultural norms.

For instance, Tsai's work (2007; Tsai, Knutson, and Fung 2006) has demonstrated that individuals with interdependent self-concepts (emphasis on the self as a member of the community; East Asian cultures) tend to value emotional calm (low arousal positivity) as ideal. In contrast, independent participants' (emphasis on the self as an autonomous individual; Western cultures) ideal emotional state is one of elation and excitement—high arousal positivity. This research has emphasized that discrepancies between ideal and actual affect are correlated with depression and anxiety (Tsai et al. 2006), as well as lowered general life satisfaction (Suh, Diener, Oishi, and Triandis 1998). In consumer psychology, culturally-based emotion preferences have also been connected to message persuasion (Aaker and Lee 2001; Aaker and Williams 1998).

Along with social psychology, organizational behavior and sociology have examined the ability to conform to the emotion norms of a job as a component of workplace success. Hochschild's seminal work (1983) led the way in understanding that emotion is often central to a worker's job, particularly in service industries (e.g., flight attendants, salespeople). This area of study has been termed "emotional labor," as appropriate emotion expression becomes a component of an individual's job description and execution. Within the emotion labor realm, emotion expression is explicitly seen as instrumental: conforming to an organization's emotion profile (known as a "feeling rule" in this literature) is essential to job execution. While occupations are not necessarily social identities—though they can be—they do involve constellations of attitudes, beliefs, and actions associated with the occupation. In this way, it may be reasonable to conclude

that a parallel exists between the organizationally enforced feeling rules associated with different jobs and emotion profiles associated with specific social identities.

Indeed, research in organizational behavior has begun to emphasize the role of “gender identities” in the enactment of emotional labor. For instance, when studying human resource managers, Simpson and Stroh (2004) suggest that the female gender has an emotion profile promoting the suppression of negative affect and the enhancement of positive affect. In contrast, male emotion profiles suggest suppression of all affect, with the possible exception of negative affect. When individuals are forced to adopt an emotion profile that is inconsistent with their gender (e.g., a woman who must conform to male emotion profiles) a state called *emotional dissonance* results (Jansz and Timmers 2002). Emotional dissonance is similar to cognitive dissonance (Festinger 1957) in that it is a feeling of psychological tension and discomfort, and has motivational characteristics, as the experience of negative tension impels an individual to reduce the discomfort. Because emotional dissonance results from experiencing an emotion that is in violation of an emotion profile, individuals will be motivated to either change the emotion profile or change the emotion. As emotion profiles are associated with identities, and presumably formed through learned norms (Hochschild 1983), changing the profile may be difficult. In contrast, individuals are quite familiar with and adept at changing their emotions: the psychological process known as emotion regulation, described above.

Summary

Emotion regulation outlines a variety of strategies people may use to select and manage their ongoing emotional experiences. Some emotion regulation strategies are

forward-looking, where an individual chooses to enter a situation because it provides the opportunity to experience a desirable emotion. Other strategies influence the current emotional state, allowing an individual to reduce unwanted emotions, or enhance desirable ones. Finally, some strategies simply mask the internal emotional state, providing the external appearance of another emotion—despite a different subjective experience. While all of these strategies provide tools for an individual to select and alter their emotions, the emotion regulation literature has little to say about *when* a person may want to use these self-regulatory procedures.

The framework proposed in the present research suggests that an individual's identity activates a specific emotion profile: these profiles constrain the set of desirable emotions consistent with that identity. Research from cross-cultural psychology and organizational behavior suggests that emotion profiles are acquired through learned norms (Hochschild 1983), and that conforming to these profiles can enhance the enactment of key behaviors (Simpson and Stroh 2004). Thus, emotions can be used instrumentally; inducing or amplifying emotions that conform to an identity's emotion profile enhances identity consistency. In contrast, if a person experiences an emotion that is inconsistent with the active emotion profile, emotional dissonance can result—characterized by negative feelings of discomfort and tension (Jansz and Timmers 2002). This dissonant state motivates the individual to engage in emotion regulation processes to change or reduce the violating emotion, thereby diminishing the conflict and tension. In this way, identities provide a motivating force to engage in both up-regulating and down-regulating of emotions.

3.4 The Present Research

In sum, there is theoretical evidence to expect that associations between social identities and specific emotions exist. Social identities contain well-established associations between constructs that are consistent with the manifestation of that identity—previously limited to attitudes, behaviors and beliefs. However, there is some precedent relating specific emotions to roles that the individual might exhibit, suggesting that these emotion-identity connections may indeed be part of the social identity network. If these emotion profiles exist, all dimensions of the emotion experience should be affected by what identity is currently active: appraisal of emotion-relevant stimuli, emotional contagion and social judgments, information processing and persuasion, motivation, and even regulating emotion experiences in order to match the active emotion profile. The main objective of this chapter is to test these propositions, and this is executed in the studies reported below.

The first two pretests seek to establish that emotion profiles exist: there are unique associations between specific emotions and social identities, and that these emotion profiles influence social judgments. From this foundation, the next four studies examine the influence of emotion profiles on various aspects of the emotion experience.

Experiment 1 examines an individual's sensitivity to emotion-related stimuli, and tests if individuals are more responsive to stimuli which are consistent with the identity's active emotion profile. Experiment 2 tests whether emotion profiles influence emotional contagion—both whether and to what intensity emotions are “caught” from observing another individual. Experiment 3 focuses on persuasion, and the degree to which attitudes

and behavioral intentions are influenced by whether the emotion in an advertisement is consistent or inconsistent with the active identity emotion profile. Experiment 4 looks at the motivational effects of emotion, and tests whether effort exerted on a tiring task is influenced by the identity's emotion profile.

Following these four studies, the final two look at emotion profiles and emotion regulation. If an individual experiences an emotion profile-consistent emotion, he or she should try to up-regulate or enhance that emotion experience, and would then have higher attitudes toward products positioned as enhancing that emotion. In contrast, if an individual experiences an emotion profile-inconsistent emotion, he or she should engage in down-regulation to try and reduce that emotional experience, and would thus have higher attitudes toward products positioned as reducing the emotion. Experiment 5 investigates whether individuals will strategically regulate their emotions to maintain consistency with the emotion profile, when presented with emotion-eliciting stimuli. Finally, Experiment 6 asks if individuals will select a product that will enhance a negative emotion, if that emotion is consistent with the active emotion profile.

Throughout these empirical tests, the prediction is an interaction between the active social identity and the emotion experience: when individuals experience an emotion which is consistent with the active identity's emotion profile, outcomes will be enhanced, but if they experience emotions which are inconsistent with the active emotion profile, outcomes will be reduced. Ultimately, this work addresses whether emotions are implicated within the self-concept and how that influences emotional and social outcomes.

Pretest 1: Do Emotion Profiles Exist?

In order to discern whether individuals believe that specific emotions are associated with certain social identities, a pretest was run. In this pretest, participants were asked to assess the usefulness of a specific emotion for a set of social identities. Usefulness was chosen as the construct of interest, as it captures the essence of emotions being used instrumentally—in the service of other goals (Tamir 2005). Eighty-seven undergraduates from a large northeastern university participated in the pretest, which was part of an hour-long lab session, along with other studies. For their participation, individuals were paid \$10.

In the pretest, participants were randomly assigned to a condition, where they were presented with one specific emotion from a set of fourteen emotions (anger, disgust, fear, happiness, sadness, pride, guilt, boredom, challenge, disappointment, fascination, hope, relaxation and worry). The fourteen emotions were chosen to include both positive and negative emotions, the five basic emotions (Ekman 1992), as well as more secondary-appraisal types of emotions (Lazarus 1991), in order to represent a broad swath of emotion types, without overtaxing participants. There were no a priori hypotheses about whether primary or secondary emotions would be more or less likely to form associations with identities, but those questions could be tested with a wide set such as this. Participants were asked to rate the usefulness of their assigned emotion for ten different identities (athlete, student, artist, volunteer, party host, business person, environmentalist, romantic partner, politician, and friend) on a scale from 1 (*not at all helpful*) to 7 (*extremely helpful*). The ten identities were selected on the basis of a

previous pretest that asked participants from a similar sample to both generate identities in an open-ended format as well as rate a set of 30 provided identities. The ten chosen for this pretest were those identities rated most common amongst the representative sample.

	Athlete	Businessperson	Artist	Volunteer
anger	5.25 _a	2.75 _b	3.75 _b	2.42 _b
disgust	4.00 _a	3.73 _a	4.82 _a	3.82 _a
fear	4.75 _a	3.92 _a	3.50 _{a,b}	2.08 _b
guilt	2.25 _a	3.13 _a	3.50 _{a,b}	4.94 _b
happiness	5.46 _a	4.15 _b	5.00 _a	6.77 _c
pride	6.08 _a	5.17 _a	4.50 _a	5.67 _a
sadness	1.45 _a	1.91 _a	5.09 _b	3.82 _b
boredom	2.38 _a	2.94 _{a,b}	4.31 _b	3.63 _b
challenge	6.17 _a	6.00 _a	4.50 _b	3.58 _b
disappointment	3.46 _{a,b}	4.38 _a	3.77 _{a,b}	3.23 _b
fascination	4.36 _a	4.55 _a	6.64 _b	5.55 _a
hope	5.75 _{a,b}	4.92 _a	5.17 _a	6.50 _b
relaxation	3.67 _a	4.00 _{a,b}	5.75 _b	4.92 _{a,b}
worry	3.64 _{a,b}	4.00 _{a,b}	2.73 _b	4.73 _a

Table 3.1: Emotion Profiles²

The purpose of the pretest was to establish that individuals see connections between an identity and specific emotions, as well as discover the emotional profile associated with a variety of identities relevant to our student participants. In all, fourteen emotions were evaluated with regards to ten distinct social identities (see Table 3.1 for a sample of the results). While some emotions were undifferentiated across identities (e.g., happiness was useful for all identities), many were seen as benefitting one identity more than others. For instance, anger was seen as quite useful for an athlete ($M_{athlete} = 5.25$),

² Note: within each row, means with different subscripts differ at the $p < .05$ level.

but not so for other identities ($M_{all\ others} = 2.52$, all $p < .05$). Indeed, anger was not rated above the midpoint of the usefulness scale for any other identity. Similarly, sadness appears to be associated with the artist ($M = 5.09$) and volunteer ($M = 3.81$) identities, but not with any others ($M = 2.49$) all $p < .05$. This data supports the contention that social identities include more than behaviors, cognitions, and beliefs, but implicate specific emotional states as well.

Discussion. The pretest data provides two important pieces of evidence. First, it represents preliminary support for the current theory; some specific emotions are seen as particularly useful for certain social identities but not others. While the data do not state why these associations exist, or how they come to be learned, many of the associations follow from emotion theory. For instance, anger may be useful for athletes because its external locus of control (Frijda 1986) focuses attention on the obstacles impeding goal pursuit, and thus may inspire competition and motivation to overcome barriers to progress. In contrast, sadness may be useful for volunteers because it involves a sense of loss and the motivation to change circumstances (Frijda 1986)—indeed, recent work has shown that the expression of sadness on victims' faces in charity advertisements promotes sympathy and helping behavior (Small and Verrochi 2009). Interestingly, some of the emotions were undifferentiated across identities: happiness was perceived as useful for all identities, while boredom and relaxation were seen as relatively useless. It is noteworthy that these three emotions (happiness, boredom and relaxation) all lack specific action tendencies (Frijda 1986) and are characterized by more diffuse affective states. Their lack of identity-specific associations may be due to these characteristics, or

the restricted set of identities provided to participants. At the very least, however, these results provide a set of emotion profiles that can be leveraged to test the theory described here.

Specifically, the pretest data afford two emotion profiles that are of particular interest: athlete-anger, volunteer-sadness. These social identities had strong associations to each of these emotions and, importantly, had contrasting profiles. In other words, anger was seen as useful for the athlete, but not so for volunteers, while sadness is useful for volunteers but not for athletes. These contrasting profiles allow a more parsimonious test of the theory, as individuals with a salient athlete (volunteer) identity should prefer to experience anger (sadness), and should regulate their emotions to avoid sadness (anger).

Pretest one thus provides a useful starting point for understanding the associations between emotions and social identities. However, the design of this pretest focused solely on the usefulness of these emotions toward specific identities—no other assessments were made. So while anger may be useful for athletes, it is unclear whether angry athletes are perceived well or poorly. Specifically, is there more to the association besides just usefulness? Pretest two attempts to assess (for the athlete-anger and volunteer-sadness profiles) whether other concepts are influenced by the emotion profile, or whether usefulness alone captures these associations.

Pretest 2: Emotion Profiles and Social Judgments

In order to further understand the concepts implicated in the emotion profiles identified in pretest one, a second pretest was run. In this pretest, participants read a

vignette about an unknown individual and were then asked to judge that person and his behavior along a variety of dimensions, including: appropriateness, authenticity, performance, and likeability. These measures were meant to capture the types of person-judgments that might be influenced by emotion profiles: how correct is that person's behavior (appropriateness: cf. Bodenhausen, Kramer, and Süsler 1994), how deeply held is his identity (authenticity), how likeable is he (Adolphs, Tranel, and Damasio 1998), and how well will he enact that identity (see e.g., Funder 1987). All of these characteristics are social judgments that may be used in forming an impression of another individual—will they be influenced by emotion profile-consistency? One hundred eight individuals participated in the pretest, which was part of an hour-long behavioral lab session, along with other studies. For their participation, individuals were paid \$10.

The pretest used a 2 (identity: athlete, volunteer) by 2 (emotion: anger, sadness) between-subjects design. Participants read one of four vignettes:

Athlete: Ryan is on his way to the stadium to play against his school's rival team. On his way to the stadium, Ryan listens to a playlist of songs that make him feel *angry (sad)*. He always listens to that playlist on his way to a game. He thinks of the songs as his "athlete soundtrack."

Volunteer: Ryan is on his way to the local soup kitchen to volunteer in the cafeteria. On his way to the charity, Ryan listens to a playlist of songs that make him feel *angry (sad)*. He always listens to that playlist on his way to the soup kitchen. He thinks of the songs as his "volunteer soundtrack."

After reading the vignette, participants were asked to rate Ryan on a variety of dimensions: appropriateness of his behavior (single-item), authenticity (five items), performance (single-item), and likeability (three items). After completing the measures, participants were thanked, debriefed, paid and dismissed.

Results. Participants were first asked to rate how appropriate Ryan's behavior was on a sliding scale from 0 (*extremely inappropriate*) to 100 (*extremely appropriate*). These ratings were subjected to a two-way ANOVA with identity (athlete, volunteer) and emotion (anger, sadness) as predictors. There was a main effect of identity ($F(1, 153) = 5.566, p < .05, \eta_p^2 = .035$), such that Ryan's behavior was seen as more appropriate as an athlete than as a volunteer (47.77 vs. 37.23). However, this main effect is qualified by a significant interaction between emotion and identity, ($F(1, 153) = 19.153, p < .001, \eta_p^2 = .111$). Follow-up contrasts showed that participants who evaluated Ryan the athlete thought his behavior was more appropriate when he was listening to angry music than when he was listening to sad music (61.59 vs. 33.95), ($F(1, 153) = 18.750, p < .001$). Participants who evaluated Ryan the volunteer, on the other hand, thought his behavior was marginally more appropriate when he listened to a sad playlist rather than an angry one (43.03 vs. 31.28), ($F(1, 153) = 3.427, p = .06$).

After providing the appropriateness ratings, participants were asked to assess the perceived authenticity of Ryan's behavior. Participants indicated their agreement with a 1 (*disagree completely*) to 9 (*agree completely*) scale, where the prompts asked: Ryan's behavior is characteristic of an athlete, Ryan is an authentic athlete, Ryan genuinely cares about being an athlete, Ryan is good at being an athlete, Ryan is a model athlete. Factor analysis revealed that these five items all loaded onto one factor, thus an authenticity index was created by averaging all items ($\alpha = .806$). This authenticity index was subjected to a two-way ANOVA with identity and emotion as predictors. There was a significant main effect of identity, ($F(1, 153) = 15.523, p < .001, \eta_p^2 = .092$), where the athlete ($M = 4.765$) was seen as more authentic than the volunteer ($M = 3.897$: see Table

3.2). This main effect is qualified by a significant interaction between emotion and identity, ($F(1, 153) = 9.597, p < .005, \eta_p^2 = .059$). Follow-up contrasts showed that participants who evaluated Ryan the athlete thought his behavior was more authentic when he was listening to an angry playlist versus a sad one (5.252 vs. 4.278), ($F(1, 153) = 9.656, p < .005$). Participants who evaluated Ryan the volunteer, on the other hand, only directionally thought his behavior was more authentic when he was listening to a sad playlist rather than an angry one (4.092 vs. 3.697), ($F(1, 153) = 1.608, p < .25$).

		Appropriate	Authentic	Perform Better	Likeable	N
Athlete	Angry	61.59	5.25	6.59	4.90	39
	<i>SD</i>	30.76	1.44	1.67	1.92	
	Sad	33.95	4.28	5.18	4.39	39
	<i>SD</i>	31.70	1.63	2.72	1.71	
Volunteer	Angry	31.28	3.70	4.33	3.62	39
	<i>SD</i>	21.79	1.25	2.44	1.46	
	Sad	43.03	4.09	4.90	4.24	40
	<i>SD</i>	27.44	1.18	2.02	1.48	

Table 3.2: Emotion Profiles and Person Judgments

After providing the authenticity ratings, participants were asked to evaluate whether Ryan would *perform well*, along a 9-point scale. This question was meant to replicate the results from the first pretest. The performance question was subjected to a two-way ANOVA with identity and emotion as predictors. There was a significant main effect of identity, ($F(1, 153) = 12.481, p < .001, \eta_p^2 = .075$), where the athlete ($M = 5.88$) was seen as performing better, in general, than the volunteer ($M = 4.62$). This main effect is qualified by a significant interaction between emotion and identity, ($F(1, 153) = 7.585, p < .01, \eta_p^2 = .047$). Follow-up contrasts showed that participants who evaluated Ryan the

athlete thought he would perform better when the music was angry rather than sad (6.59 vs. 5.179), ($F(1, 153) = 7.672, p < .01$). Participants who evaluated Ryan the volunteer, only directionally, thought would perform better the music was sad versus angry (4.90 vs. 4.33), ($F(1, 153) = 1.254, p < .30$).

Finally, participants were asked to indicate how *likeable* Ryan was on three items, which were 9-point scales anchored by: bad/good, unfavorable/favorable, and dislike/like. Factor analysis showed that all three items loaded onto one factor, so the scores were averaged to create a likeability scale ($\alpha = .891$). Ryan's likeability was subjected to a two-way ANOVA with identity and emotion as predictors. There was a significant main effect of identity, ($F(1, 153) = 7.296, p < .01, \eta_p^2 = .046$), where the athlete ($M = 4.645$) was liked more, in general, than the volunteer ($M = 3.937$). This main effect is qualified by a significant interaction between emotion and identity, ($F(1, 153) = 4.523, p < .05, \eta_p^2 = .029$). Follow-up contrasts showed that participants who evaluated Ryan listening to angry music liked him better when he was an athlete than when he was a volunteer (4.8971 vs. 3.624), ($F(1, 153) = 11.581, p < .001$). Participants who evaluated Ryan in the sad conditions, however, saw no differences between the athlete or volunteer (4.393 vs. 4.242), ($F(1, 153) < 1$).

Discussion. The first pretest assessed whether participants believed that certain emotions are *useful* to specific social identities, and found that there are indeed associations between identities and emotions: revealing emotion profiles for each identity. Building upon the findings from the first pretest, the second attempted to understand what the identity-emotion association means. In this pretest, two identities

were used (athlete and volunteer) along with two emotions (anger and sadness). Across a variety of judgments, participants evaluated the individual who expressed an identity-consistent emotion (e.g. athlete-anger, volunteer-sadness) as better than the individual expressing an identity-inconsistent emotion. Specifically, angry athletes and sad volunteers were seen as more likable, more authentic, more appropriate, and performing better than sad athletes or angry volunteers. These results provide further support for the existence of identity-specific emotion profiles, and suggest that experiencing identity-consistent emotions has implications for a variety of social judgments.

While the first two pretests present evidence for associations between identities and emotions, and suggest that these emotion profiles influence judgments, neither pretest examined actual emotion experience or an induced social identity. Therefore, the studies which follow assess the influence of identity-specific emotions (emotion profiles) on consumer outcomes. Experiment 1 assesses the impact of emotion profiles on attention to relevant emotional stimuli, Experiment 2 examines emotional contagion, Experiment 3 looks at persuasion, and Experiment 4 tests performance differences. Following these four studies, the final two investigate emotion regulation, as a strategy to obtain emotion profile-consistency and avoid emotion profile-inconsistency.

With emotion profiles empirically established and theoretically positioned, the remaining studies endeavor to assess the impact of activating an emotion profile on the emotion process. Specifically, theorists have discussed the varying dimensions of an emotional experience as including (but not restricted to) the following: attentional changes, social functions, motivational readiness, information processing adjustments, and regulation or coping (e.g., Frijda 1986; Gross 1998b; Higgins 1997; Lazarus 1991;

Tiedens and Linton 2001). If emotion profiles are a true component of a social identity's associative network, they should influence all these components of emotion. Thus, the studies which follow test the effect of social identity (activating an emotion profile) on these dimensions of the emotion experience.

Experiment 1: Emotion Profiles and Appraisal

For an individual to experience an emotion, he or she must first experience the situation or context that would trigger the emotional event. Specifically, theorists propose that the individual must appraise cues within the situation for both relevance and valence, before an emotional reaction occurs (Frijda 1986; Lazarus 1991). Thus, for emotions to arise, the individual should attend to and appraise the situation in an emotional manner. Specifically, Frijda (1986) proposes that, "One and the same event can give rise to a variety of emotions in behavior and in experience, depending upon how it is appraised, what aspects are emphasized or focused upon or overlooked..." (p. 195). Thus, the first experiment examines whether an active emotion profile will influence what cues are attended to versus overlooked.

Participants were first primed with a specific identity (athlete, volunteer, or control), in order to activate a certain emotion profile. Following this task, participants then engaged in an identification task, where they responded as quickly as possible to letter strings, categorizing them as either a word or non-word. Importantly, of the stimuli that were real words (as opposed to random letter strings) they were of three types: anger-related words, sadness-related words, or non-emotional neutral words. If emotion profiles

influence the attention and appraisal portions of the emotional process, athletes should be more sensitive, and respond faster, to anger-related words, while volunteers should be more sensitive, and respond faster, to sadness-related words. The emotion profiles should have no bearing on reaction times to either the neutral or non-word sets.

Participants and Procedure. Experiment one had 116 participants who are students and staff at a large northeastern university, with an average age of 21 years (age range 18-37), and 60% were females. Participants were paid \$10 for their participation in an hour of studies, including this one. Throughout all studies there were no significant effects of gender, so this factor will not be discussed further.

The first part of the experiment involved a writing task, where participants were instructed to write about a time when they performed well as either an *athlete* or as a *volunteer*. In the control condition, participants were asked to describe what they had done the previous day. Participants were given 5 minutes to write about the specific memory. Following the essay writing task, participants were asked to elaborate on the behavior, and to list at least 3 (and up to 10) things that they would do to demonstrate that they are an *athlete/volunteer*. In the control condition, they were asked to list at least 3 (and up to 10) things they planned to do tomorrow. These instructions were taken from previous literature on social identities (Reed 2004), and are shown to reliably activate the social identity and its accompanying associative network.

Following the writing task, in an ostensibly unrelated second experiment, participants were told that they would be participating in an attention task. This task was performed on the computer, and was adapted from tasks used for semantic priming or

priming assessment (e.g., Ferguson and Bargh 2004). Each trial consisted of a letter string (3-7 letters long) presented in the center of the screen. The target word remained on-screen until the participant classified it as “WORD” or “NON-WORD” by pressing one of the corresponding keys. Following the response, a focal target (+++) was presented in the center of the screen for 1500ms, before presentation of the next letter string. Participants were told that they would see both word and non-word (jumbled letters) letter strings and they should categorize the string as either a word or non-word as quickly and accurately as possible. One hundred letter combinations were presented, where 25 words were anger-related, 25 were sadness-related, 25 were neutral words, and the remaining 25 were non-word letter strings. The emotion words were taken from the Affective Lexicon (Clore, Ortony, and Foss 1987) and matched for length with the neutral and non-words. The neutral words were taken from the Affective Norms for English Words (ANEW: Bradley and Lang 1999). Before starting the actual task, participants completed 6 practice trials. Once participants completed the 100 trials, they were thanked, debriefed, paid and dismissed.

Results. Analyses were run on correct responses only (the error rate was 3.5%). Response times (RTs) that were slower than 3000 ms or faster than 250 ms were excluded (Ferguson 2007). Analyses were run on log-transformed RTs, but Figure 3.1 and the means reported are untransformed values.

The average RTs toward each word type (averaged across the 25 angry, 25 sad, 25 neutral or 25 non-words) were entered into a repeated-measures ANOVA with word type (angry, sad, neutral, non-word) as a within-subject variable and identity (athlete,

volunteer, control) as a between-subject variable. Assumptions of sphericity were violated $\chi^2(5) = 102.191, p < .001$: thus corrected degrees of freedom will be reported, using the Huynh-Feldt method (1970). A significant main effect of word type was found ($F(2.606, 294.516) = 138.425, p < .001, \eta_p^2 = .551$) such that RTs to the non-word stimuli were longer ($M = 737.27$) than the other three word types ($M_{all\ others} = 597.98$). This main effect was qualified by a significant interaction between identity and emotion, ($F(5.213, 294.516) = 4.624, p < .001, \eta_p^2 = .076$), illustrated in Figure 3.1. A series of planned contrasts were performed to decompose this interaction effect.

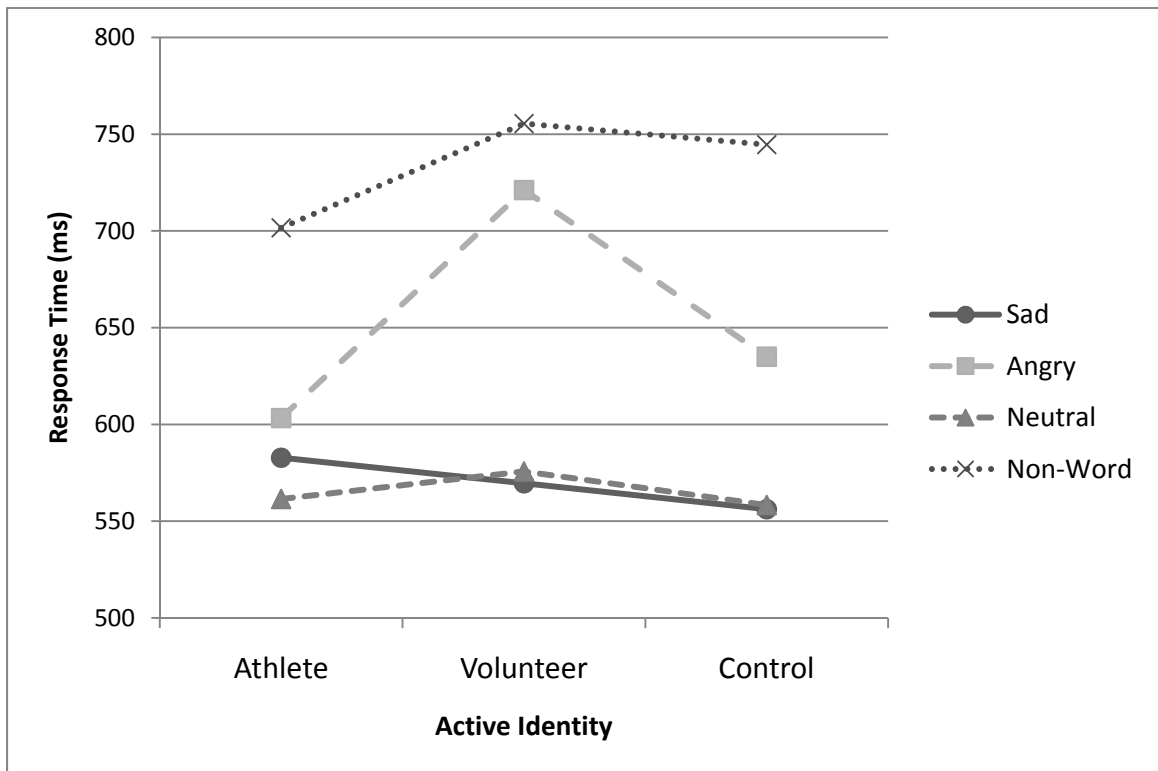


Figure 3.1: Emotion Profiles and Appraisals

Participants with active athlete identities responded significantly faster to anger-related words ($M = 603.30$) than did participants with active volunteer identities ($M = 721.13$), ($F(2, 113) = 3.138, p < .05, \eta_p^2 = .053$). While there was no difference between athlete and volunteers' speed at identifying sadness-related words (582.79 vs. 569.58), volunteers' response times to sadness-related words were significantly faster than anger RTs ($M_{sad} = 569.58, M_{anger} = 721.13$), ($F(3, 111) = 53.301, p < .001, \eta_p^2 = .590$).

Discussion. The findings from the current study demonstrate that emotion profiles influence one of the basic dimensions of emotion experience: appraisal. In this experiment, participants with an active identity were more sensitive to stimuli that matched the emotion profile of that identity. Specifically, participants with an active athlete identity responded more quickly to words that were related to anger (consistent with the athlete emotion profile) than did participants with an active volunteer identity. In contrast, participants with active volunteer identities responded more quickly to sadness-related words than to either neutral or non-word stimuli, again suggesting a greater sensitivity to emotion profile-consistent cues. This study demonstrates that emotion profiles are not merely beliefs about other individuals, but rather influence the very components of the emotion process itself, beginning with appraisals of relevant environmental stimuli

While these results build upon the two pretests and actually activate a social identity (athlete or volunteer), participants were merely exposed to emotion elicitors. There is no evidence for the emotion profile influencing the emotion *experience*, and thus an alternative explanation is that the associations between the social identity and the

emotion are merely semantic, but do not involve the emotion system. Experiment 2 is designed to both activate an identity and provide an emotion-eliciting experience. In particular, Experiment 2 will investigate how emotion profiles enhance or inhibit emotional contagion—a social function of emotion.

Experiment 2: Emotion Profiles and Emotional Contagion

As seen in the second pretest, emotion can have extensive implications for social judgments. In that pretest, individuals were evaluating someone else's emotion choices, and assessing how it fit with or violated the relevant emotion profile. But emotions can serve other social functions—in particular, the facial display of emotion. While the expression of emotion (primarily facial expression) does not serve a fundamentally functional purpose in the sense that the physiological or action readiness components of emotion do (such as prepare the person to avoid a threat: Öhman, Flykt, and Esteves 2001), emotion expression does serve to reveal the emotional state of the person to other individuals (Frijda 1986; Ekman 1992). Along with communicating information, the expression of emotion can also produce emotional convergence between the expresser and the observer: an event known as *emotional contagion* (Hatfield, Cacioppo, and Rapson 1992; Neumann and Strack 2000). Importantly, the degree to which various types of behavioral contagion occur tends to vary depending on who the observer and expresser are (Chartrand and Dalton 2009). Specifically, mimicry occurs to a greater degree when the observer is interacting with a member of their in-group. For instance, participants who were made to feel as if they were less central to the in-group at time 1 demonstrated

more mimicry when interacting with an in-group member during time 2, than did participants who felt central to the in-group during time 1 (Williams, Cheung, and Choi 2000). It seems that individuals seek to re-establish group membership through mimicry.

Following this line of reasoning, emotion profiles should influence a particular type of mimicry: emotional contagion. Specifically, when an emotion profile has been activated via a salient social identity, individuals should be more likely to respond to (catch) expressions which are consistent with the active emotion profile, while proving resistant to the influence of expressions which are inconsistent with the emotion profile. Experiment 2 is designed to test this hypothesis by exposing participants to a facial expression of emotion and then assessing emotional state for evidence of emotional contagion.

Participants and Procedure. One hundred sixty-nine students and staff from a large northeastern university took part in this study during a one-hour experimental session containing various studies in exchange for \$10. The average age was 24 years (age range 18-66) and 56% were female.

As in Experiment 1, participants first engaged in a writing task to prime one social identity (athlete, volunteer, control). Following this task, participants moved to a different study on the computer, where they were told that the experimenter was interested in how individuals react to pictures of unknown people. A photograph was presented for 20 seconds, showing one of four possible faces: angry male, angry female, sad male, sad female. These pictures have been validated for emotional expressiveness on a similar sample (Beaupré and Hess 2005). After viewing the photograph, participants

were asked to rate their current emotional state, as well as the emotion expression of the individual in the photograph (Small and Verrochi 2009). Both of these emotion ratings were taken on a 9-point scale where 1 (*not at all*) and 9 (*extremely*). The 13 emotion items that were rated (both for the self and the person in the photograph) were: happy, sad, angry, calm, bored, warm, frustrated, touched, depressed, agitated, anxious, cheerful, and dejected. After completing these ratings participants were debriefed, thanked, and paid.

Results. The 13 emotion items were broken into two indices: anger (3 items: angry, frustrated, agitated) with reliability $\alpha = .835$, and sadness (3 items: sad, depressed, dejected) with reliability $\alpha = .774$. Similar indices were created for ratings of the individual in the picture, anger (3 items: $\alpha = .809$) and sadness (3 items: $\alpha = .818$). A two-factor ANOVA was run on both the ratings of the person in the picture's anger and sadness, only a main effect of emotion was found, whereby the pictures with the individual expressing anger were rated as angrier than those expressing sadness (6.39 vs. 4.74) and those expressing sadness were seen as sadder than those expressing anger (6.47 vs. 4.49), both $p < .001$. Across all analyses there were no effects of expresser gender, so this variable will not be discussed further.

As discussed above, an active emotion profile should lead the viewer to be more receptive (to better "catch") the emotion of an expresser who is manifesting an emotion profile-consistent emotion. To test this hypothesis, the ratings of experienced (self) anger were subjected to a two-way ANOVA with emotion expression (of the person in the picture: anger or sadness) and identity as predictors. A main effect of emotion was found,

($F(1, 163) = 9.625, p < .01, \eta_p^2 = .056$) such that participants experienced greater levels of anger when they viewed a photograph expressing anger ($M = 4.13$) than a photograph expressing sadness ($M = 3.20$). However, this main effect is qualified by a significant interaction between identity and emotion, ($F(2, 163) = 32.123, p < .001, \eta_p^2 = .283$) shown in Figure 3.2. Follow-up contrasts show that athletes who viewed an angry photograph reported experiencing higher levels of anger ($M = 5.25$) than both volunteers ($M = 2.18$) or control participants ($M = 4.12$), $p < .01$. Participants with an active volunteer identity experienced little emotional contagion, in that their experienced anger after viewing an angry expression was significantly lower than the control condition (2.18 vs. 4.12; $F(1, 163) = 19.880, p < .001$). This pattern of data suggests that individuals with an active athlete identity, for whom anger is an appropriate and desirable emotion, responded to exposure to an angry photograph with a high degree of emotional contagion, as evidenced by the significantly higher levels of reported anger. Volunteers, on the other hand, for whom anger is neither desirable nor useful, seemed to reject emotional contagion, as evidenced by their lower-than-control levels of experienced anger.

A similar set of analyses were run on the self-reported experience of sadness. Sadness ratings were subjected to a two-way ANOVA with emotion expression and identity as predictors. No main effects of either emotion or identity were found. However, there was a significant interaction between identity and emotion, ($F(2, 163) = 28.799, p < .001, \eta_p^2 = .261$). Follow-up contrasts demonstrate that individuals with an active volunteer identity responded strongly to the presentation of a sad picture, such that ratings of experienced sadness were higher for volunteers ($M = 4.51$) than either athletes

($M = 2.19$) or control participants ($M = 3.17$), both $p < .001$. As above, athletes showed significantly dampened response to the emotion profile-inconsistent stimuli, with lower levels of sadness as compared to the control condition ($F(1, 163) = 20.437, p < .001$). Again, this demonstrates that individuals are more likely to “catch” the emotion which corresponds to the emotion profile of their active identity, rejecting the experience of an emotion profile-inconsistent emotion.

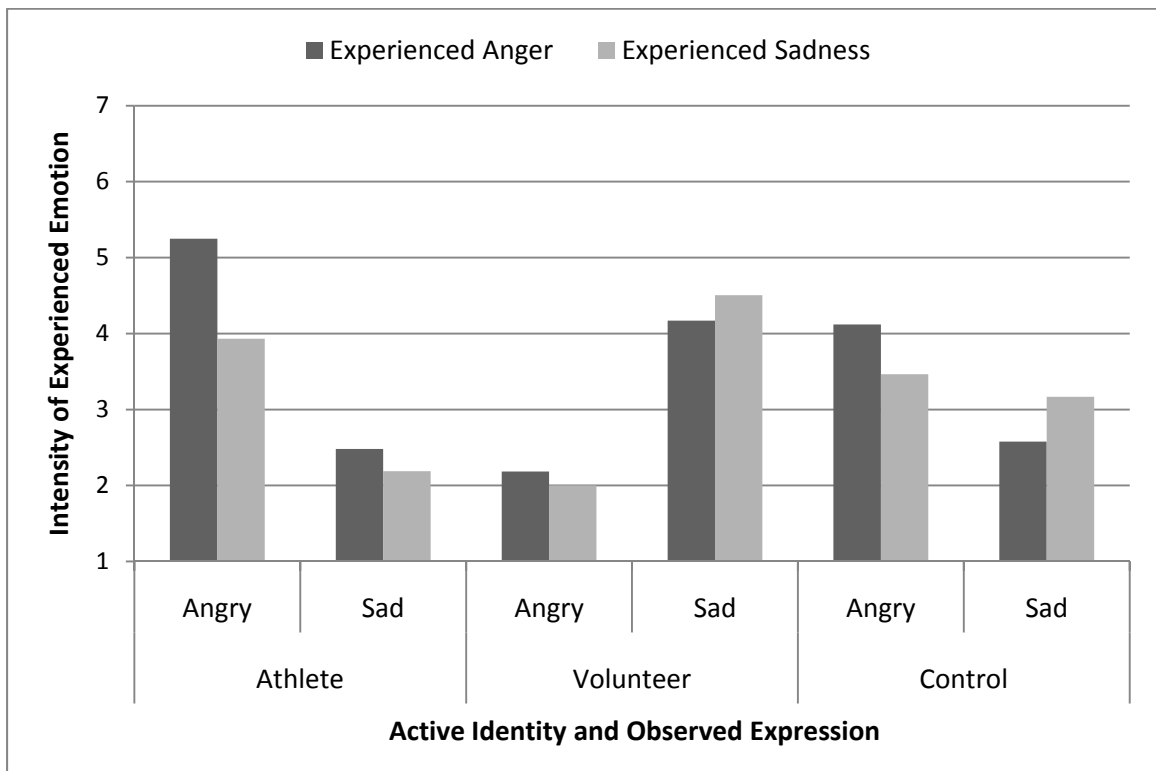


Figure 3.2: Emotion Profiles and Contagion

A third analysis was run on general negativity, by creating an index of all 7 negative emotion items ($\alpha = .885$). This index was subjected to a two-way ANOVA with identity and emotion expression as predictors. No significant main effects of emotion

expression or identity were found, however a significant interaction between identity and emotion expression emerged, ($F(2, 163) = 36.341, p < .001, \eta_p^2 = .308$). Follow-up contrasts demonstrate that participants with an active athlete identity responded only to pictures of angry facial expressions ($M = 4.65$) but not to sad pictures ($M = 2.45$), ($F(1, 163) = 37.060, p < .001, \eta_p^2 = .185$). On the other hand, participants with active volunteer identities only responded to pictures of sad facial expressions ($M = 4.37$) but not to angry ones ($M = 2.14$), ($F(1, 163) = 33.059, p < .001, \eta_p^2 = .169$). Additionally, participants with an active athlete identity experienced greater levels of negative emotion when viewing an angry photograph than the control condition ($M = 3.89$), as did volunteers viewing a sad photograph versus control ($M = 2.98$).

Discussion. This study tested the hypothesis that emotion profiles would influence an individual's ability to experience emotional contagion, and the intensity of the emotion "caught." For both the athlete and volunteer conditions, the data supports this hypothesis, in that the athletes only experienced emotional contagion when presented with an angry emotion expression, and the volunteers only experienced contagion when presented with a sad expression. In both cases, the intensity of the caught emotion was greater than the control condition: athletes experienced more anger than control participants when viewing an angry expression, and volunteers experienced more sadness than control participants when viewing a sad expression. These results support both aspects of the current hypothesis: participants only responded to emotion expressions which were consistent with their active emotion profile. Despite being able to correctly recognize the emotion expression in the picture (demonstrated in the manipulation check

ratings), participants were emotionally unaffected by those expressions which would have violated the active emotion profile.

Taken together with the results on person-judgments from the second pretest, these data imply that emotion profiles could have profound effects on social interactions. Not only do individuals judge others by their conformity or violation with a salient emotion profile, but individuals seem to only respond to others who are expressing an emotion which is consistent with their emotion profile. Given that mimicry and emotional contagion are social mechanisms generally seen as increasing interpersonal relationships and harmony (Chartrand and Dalton 2009), an active emotion profile could either enhance this process, or in the case of an emotion mismatch, seriously hamper it.

While Experiment 2 demonstrates the effect of emotion profiles on contagion, it did not capture the functionality of these emotion profiles, where the emotion is seen as particularly *useful* for the active identity. Returning to the idea that emotions can be used instrumentally to assist in the pursuit of other goals (Tamir 2005), the next experiment examines whether experiencing an emotion profile-consistent emotion will enhance performance on an effortful task.

Experiment 3: Emotion Profiles and Effortful Performance

Given the evidence that social identities incorporate emotions, the question remains whether experiencing an emotion profile-consistent emotion will enhance performance, as suggested in the organizational behavior literature (Simpson and Stroh 2004). To assess performance, participants engaged in a real-effort task: clicking a mouse

button for three minutes. This task has been used in prior literature (Ariely, Bracha, and Meier 2009) to measure the amount of effort an individual is motivated to exert. As described above, experiencing emotion profile-consistent emotions enhances an individual's motivation both by increasing his alignment with the salient identity and by freeing up resources that would otherwise be devoted to regulating inconsistent emotions. Thus, the prediction is that participants will exert more effort (click more) when they experience emotion profile-consistent emotions.

The study used a 3 (identity: athlete, volunteer, control) by 2 (emotion: anger, sadness) between subjects design. We expect that participants primed with an athlete identity will exert more effort when they experience anger, while participants primed with volunteer identity will exert more effort when they experience sadness. Therefore, the prediction is an interaction between identity and emotion condition.

Participants and Procedure. One hundred ninety-seven individuals participated in this study, where the average age was 21 years (age range 18-31) and 51% were female. Study participants were randomly assigned to one of the six conditions (athlete-anger, athlete-sadness, volunteer-anger, volunteer-sadness, control-anger, and control-sadness). Participants were paid \$10 for their involvement in a one-hour lab session containing multiple studies, of which this was one.

As in the previous studies, participants first completed a "writing task" where they wrote about a time that they performed as an athlete (volunteer). Again, those participants in the control condition simply wrote about their day yesterday.

After writing about the focal identity, participants proceeded to the ostensibly unrelated second task. In the “doing work” task, participants were told that they would be clicking a button for three minutes (Ariely et al. 2009). The task was somewhat challenging as every second the position of the button changed randomly on the computer screen, so participants had to track the location of the button to achieve a high level of performance. While they executed that task, they would be listening to music. The music was one of two soundtracks, which had been pretested to reliably elicit either anger or sadness. The two soundtracks were pretested by 47 participants and rated for the emotions that they evoked in the listener (7-point scale, 1=*not at all* to 7=*extremely*). The angry soundtrack was rated as more angry ($M = 4.83$) than the sad songs ($M = 2.61$), $p < .01$, and the sad soundtrack was seen as sadder ($M = 3.86$) than the angry songs ($M = 2.37$), $p < .01$. The two sets of songs were equally unfamiliar to participants (0-100 scale: $M_{angry} = 8.79$, $M_{sad} = 2.37$), $p > .40$.

Thus, the music that played during the click task represents the emotion induction. After completing the clicking task, participants were debriefed, thanked, and paid.

Results. A two-way ANOVA with identity and emotion conditions as predictors tested the click data. There were no significant effects of either emotion or identity. However, the predicted interaction between emotion and identity emerged, ($F(2, 191) = 8.111$, $p < .001$, $\eta_p^2 = .078$) illustrated in Figure 3.3. Follow-up contrasts showed that participants with a salient athlete identity exerted more effort when they heard the angry soundtrack than the sad soundtrack (434.29 vs. 304.20), ($F(1, 191) = 9.972$, $p < .01$). In contrast, those with an active volunteer identity exerted greater effort when listening to

the sad soundtrack than the angry one (403.14 vs. 296.94), ($F(1, 191) = 6.367, p < .05$).

In the control condition, there was no difference between participants who heard the angry versus the sad music, $p > .9$. Additionally, within those participants who heard the angry soundtrack, people primed with an athlete identity performed better than the volunteer and control conditions (both $p < .05$), while within the sad soundtrack conditions, volunteers performed significantly better than athletes ($p < .05$) but not significantly differently from the control condition ($p > .2$).

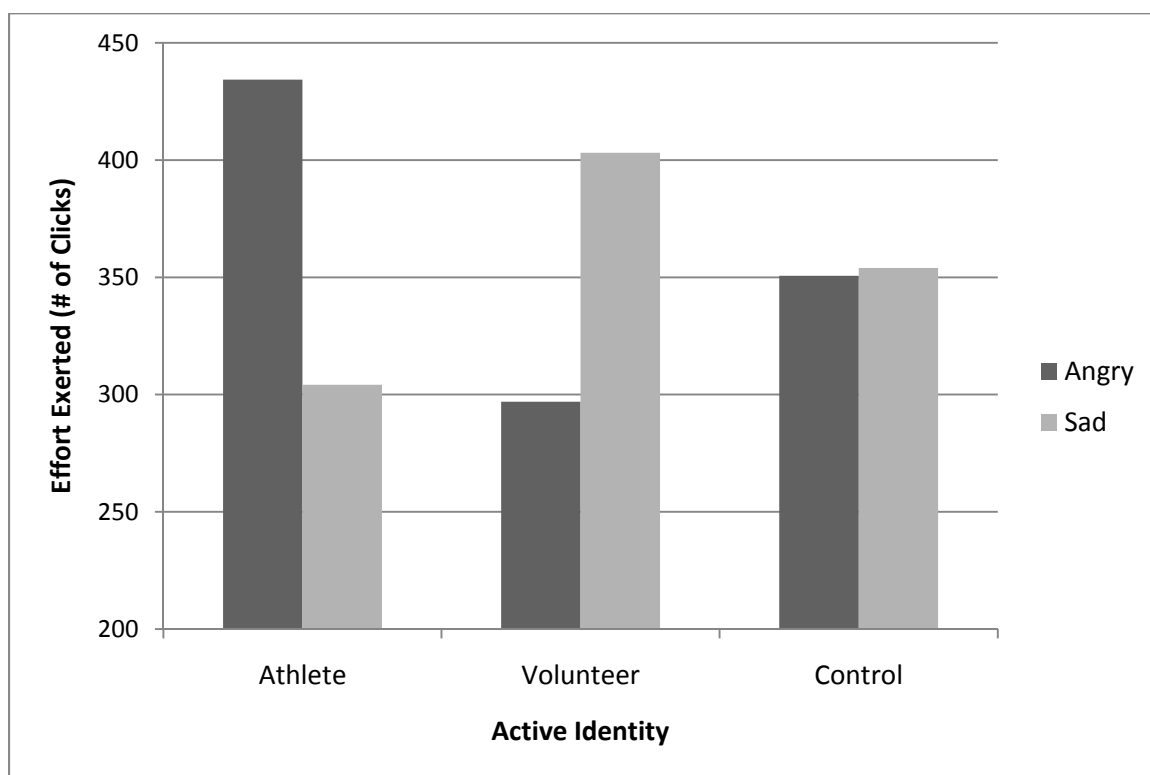


Figure 3.3: Emotion Profiles and Effortful Performance

Discussion. Experiment 3 finds support for the proposed link between social identity, emotion and effort. As expected, participants with an active athlete identity

exerted more effort while listening to angry music than did those participants with an active volunteer identity. In contrast, individuals with salient volunteer identities performed better while listening to sad music than those with athlete identities. Using a different emotion induction procedure (music) than in Experiment 2, this experiment shows convergent support for the proposed process: emotion profiles influence the spectrum of emotion effects.

To this point, the set of studies have demonstrated the power of emotion profiles on the process of emotion generation and experience. The second pretest showed that emotion profiles influence person-judgments, such that the appropriateness, authenticity, and usefulness of a behavior are evaluated differentially depending on what identity the target person is enacting. Additionally, a gestalt evaluation of liking for that target other is also influenced by the degree to which their emotional behavior matches (or mismatches) the emotion profile associated with their active identity. Experiment 1 demonstrated that when an individual has an active identity, he or she is more sensitive to stimuli in the environment that are consistent with the emotion profile of that identity—demonstrating a relationship between emotion profiles and the appraisal processes of emotion. Experiment 2 continued along this line of reasoning, providing evidence that emotional contagion only occurs for individuals who are exposed to an expression which is consistent with their active emotion profile. For instance, participants with an active athlete identity showed little to no emotion contagion when they viewed someone expressing sadness; however they experienced high levels (higher than both volunteer and control) of anger when viewing a person expressing anger. Importantly, athletes were able to correctly identify when the individual was expressing sadness (and volunteers

when the photograph was angry), but while emotion recognition occurred, they did not respond with emotional convergence. This reinforces the findings of Experiment 1, that individuals are more sensitive to those stimuli which are consistent with the active emotion profile.

Experiment 3 examines some of the downstream effects of emotional experience: motivation. Experiment 3 tests the effect of emotion profiles on the motivational aspects of an emotion experience. Entirely consistent with the previous studies, the last also shows an effect of emotion profiles, such that performance (effort exerted) was enhanced when an individual was in the emotion state consistent with the active emotion profile. Additionally, this experiment moves away from subjective rating scales and shows an effect of emotion profiles on a real behavioral outcome: effort exerted during a challenging task.

Although Experiment 3 provides evidence that emotion profiles have implications for actual behavior, it leaves two research questions still unanswered. First, it does not address whether individuals would attempt to use emotion regulation to change their emotions to achieve consistency with the identity's emotion profile. In the first four studies, participants were put into an emotion condition, and then behavior was observed. They had no opportunity to try and manage their emotions; for instance, if a person with an active athlete identity was in the sad music condition, he or she simply had no choice but to listen to the music. Experiment 4 thus employs a paradigm that both allows participants to modulate their emotional responses and measures the degree of emotion regulation a participant is employing when presented with emotional stimuli. Secondly, the previous studies do not investigate whether an individual will choose to increase their

experience of a negative emotion (anger, sadness) if it is consistent with their active emotion profile. Experiment 5 will therefore provide participants with product positioned as either intensifying or reducing an emotional state, and then assess preference and willingness to pay for that product.

Experiment 4: Emotion Profiles and Emotion Regulation

The fourth experiment is designed to demonstrate that individuals engage in emotion down-regulation when they are presented with stimuli that would violate the identity's emotion profile, but that when an individual encounters consistent emotional stimuli, emotion regulation is used to enhance or maintain the emotion. In order to assess these differences in emotion regulation, a novel paradigm is developed, which measures whether an individual is using attention deployment upon presentation of a target stimulus. Attention deployment is one of several emotion regulation strategies that have been proposed in the literature (e.g., Gross 1998b), but unlike other strategies, attention deployment has been the focus of relatively few investigations. However, the allocation of attention is a basic psychological process that has evolutionary ties to emotion (Öhman et al. 2001), and should thus provide a ripe area for exploring emotion regulation strategies. In this study the task that participants engage in permits measurement of attention—thus, if attention shifts away from the target when the emotional stimulus is inconsistent with the emotion profile, it is evidence of emotion down-regulation, supporting the proposed theory.

The study has three parts: identity activation, attention task, and follow-up measures. The study began by informing participants that they would be completing two tasks, a writing task and then a perceptual task. The overt purpose of the experiment was to assess whether individuals could remember the details of their essays after engaging in a mentally demanding task. In fact, the writing task was the identity activation prime and the “perceptual” task is the emotion regulation measurement portion.

Participants were randomly assigned to one of two identity conditions: athlete or volunteer. As in the earlier studies, participants were instructed to write about a time that they performed as an athlete or as a volunteer (Reed 2004).

Once participants had completed the identity activation task, they progressed to the attention task. Instructions told participants that their goal during this task was to quickly and accurately identify whether the letter T was right-side up or up-side down. The task is difficult as the letter is small (3/4 inch tall), presented briefly (115 ms), and at a low contrast (80% black letter presented on a 40% black background). Thus, for participants to correctly identify the letter’s orientation, they must be directing their attention to the letter’s location. The computer recorded the participants’ responses (accuracy), which can be used to assess how much attention they are devoting to the target location. Therefore, participants’ ongoing responses to the letter are the key dependent variable, as they capture the degree of attention an individual is directing to the stimulus presentation. Systematic decreases in the accuracy data would indicate that participants are shifting attention away from the target’s location; using attention deployment to strategically regulate their emotions.

In order to create situations where participants may shift their attention in order to control their emotional experience, participants were informed that during the task, they would see some photographs. All pictures were taken from the International Affective Picture System (IAPS: Lang, Bradley, and Cuthbert 2005) and have been validated for their ability to induce emotions. Two types of pictures were presented to participants: positive pictures (e.g., flowers, bunnies) and sad pictures (e.g., crying child, funeral procession). Thus, the pictures provide emotional stimuli—which may prompt participants to shift their attention away from the target location to reduce unwanted emotions.

In addition to the pictures, participants were warned before a picture appeared: a red warning would tell them that the upcoming picture was likely to be unpleasant; a green warning suggests that the upcoming picture will be pleasant, while a yellow warning says it could be either pleasant or unpleasant. These warnings are meant to provide participants with the opportunity to prepare for the upcoming picture. Thus, if participants do not want to experience the unpleasant (sad) emotions, they may strategically shift attention away from the target location when they see a red warning, as they anticipate an undesirable emotional event.

An important component of this design is that the “unpleasant” pictures were all sad photographs: consistent with the volunteer identity’s emotion profile but inconsistent with that of the athlete identity (see Figure 3.4). This means that there should be an interaction between the identity prime and both the warnings and the pictures. For athlete identities, sad emotions violate the active emotion profile, and these participants should engage in emotion regulation: avoiding the sad pictures. Participants with an active

athlete identity should thus shift attention away from the target both when they expect an unpleasant picture (red warning) and when they actually see a sad photograph. These attention shifts will be manifested as lowered accuracy following red warnings and sad pictures, relative to green or yellow warnings and positive pictures. In contrast, for participants whose volunteer identity is active attention should *not* shift away from sad pictures, and thus accuracy should remain high for Ts following red warnings and sad pictures.

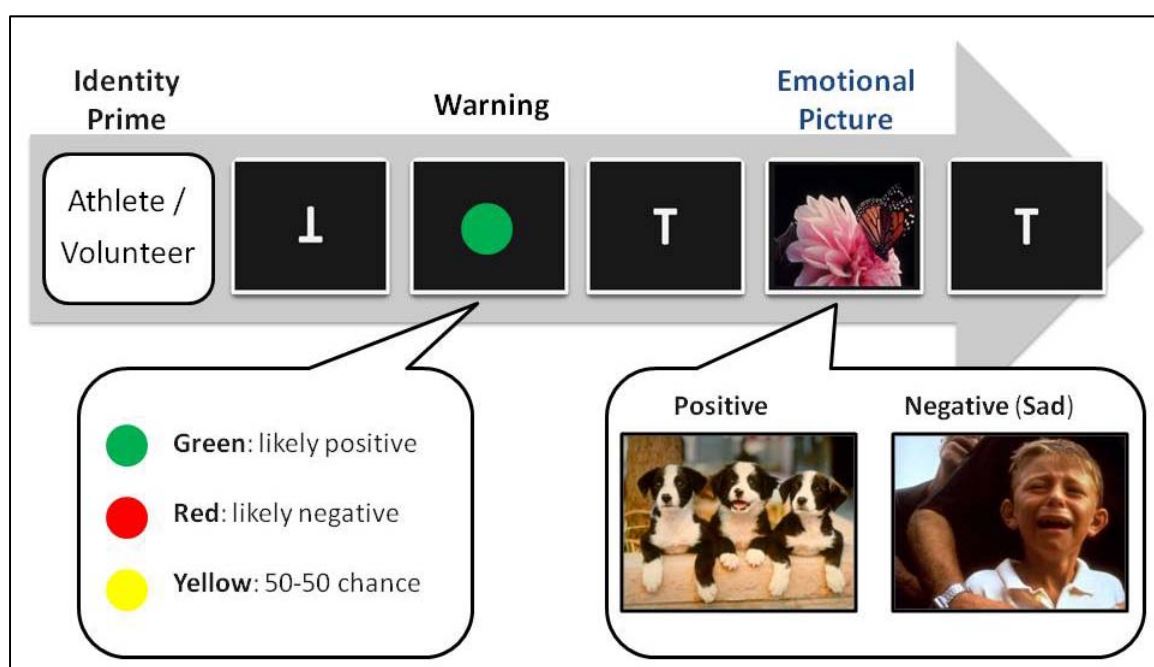


Figure 3.4: Procedure for Study 4

Taken together, the study is a mixed design with one between-subjects factor 2 (identity: athlete, volunteer) and two within-subjects factors: 3 (warning: red, green, yellow) x 2 (picture: positive, sad). The prediction is a three-way interaction, such that

those participants with an active athlete identity will shift attention away from red warnings and sad pictures, while participants with active volunteer identities will not show a drop in accuracy following red warnings and sad pictures. Accuracy will not differ amongst identities for positive pictures, or for green and yellow warnings.

Participants and Procedure. Experiment 4 had 52 participants who are students and staff at a large northeastern university, with an average age of 22 years (age range 18-63), and 55% were females. Participants were paid \$10 for their participation in an hour of studies, of which this was one.

Participants completed a total of 16 trials within the attention task, where one trial consisted of a set of T identifications (5-7 Ts), a warning (red, yellow or green circle), more T identifications (3-5 Ts), a picture (positive or sad) and a final set of T identifications (3-7 Ts). Note that the number of Ts presented during each interval varied; this was done intentionally, so that participants could not predict when a warning or picture would be presented, and thus the warnings retained their informational properties. Once participants finished the 16 trials, they were asked some follow-up questions, debriefed, thanked and paid.

Results. A three-way mixed repeated measure ANOVA was run on the accuracy of identifying the T that immediately followed the picture. Because this is a repeated measures test, a test for sphericity must be run in order to assess whether the variances across the repeated measures factor are equivalent. If sphericity is violated, the conclusions from an uncorrected repeated measure ANOVA can be invalidated.

Mauchly's sphericity test (1940) was run and the test was not significant $\chi^2 (2) = .195, p > .90$: sphericity was not violated, thus uncorrected degrees of freedom will be reported.

A main effect of identity was significant ($F (1, 50) = 5.676, p < .05, \eta_p^2 = .102$), such that participants with an active volunteer identity were more accurate ($M = 86.3\%$) than those with an active athlete identity ($M = 74.3\%$). No other main effects were significant. This main effect is qualified by a significant interaction between identity and the warning, ($F (2, 100) = 3.278, p < .05, \eta_p^2 = .062$). As predicted, follow-up contrasts show that following a red warning participants with active athlete identities performed significantly worse than those with active volunteer identities (64.6% vs. 88.9%), ($F (1, 50) = 8.579, p < .01$). Performance was not significantly different for the two identity conditions following either the green or yellow warnings, both $p > .30$.

In addition to the significant interaction between identity and warning, there was also a marginally significant interaction between identity and picture type ($F (1, 50) = 3.633, p = .062, \eta_p^2 = .068$). Follow-up contrasts show that upon seeing a sad picture, participants with active athlete identities performed significantly worse than those with active volunteer identities (70.9% vs. 89.1%), ($F (1, 50) = 9.333, p < .01$). There were no significant differences between the two identities when they saw a positive picture, $p > .30$.

These two two-way interactions are qualified by the predicted three-way interaction between identity, warning, and picture type ($F (2, 100) = 2.960, p = .056, \eta_p^2 = .056$) illustrated in Figure 3.5. Follow-up contrasts show that within the athlete identity condition, when participants saw a positive picture that had been preceded by a red warning, performance declined ($M = 66.7\%$) compared to positive pictures preceded by

green warnings ($M = 84.8\%$), ($F(2, 49) = 3.407, p < .05$), and marginally so compared to yellow warnings ($M = 81.8\%$), ($F(2, 49) = 2.671, p = .079$).

For athlete identities, performance was not significantly different between the green and yellow warnings preceding positive pictures, $p > .60$. Similarly, when participants with active athlete identities saw a sad picture which had been preceded by a red warning, performance declined ($M = 62.5\%$) relative to sad pictures preceded by either green ($M = 75.7\%$) or yellow ($M = 74.2\%$) warnings, ($F(2, 49) = 3.315, p < .05$). These results suggest that participants with active athlete identities realized that a red warning signaled an upcoming sad emotional event (inconsistent with the athlete's emotion profile), and thus shifted attention away from the target location, decreasing their accuracy. Evidence for this strategic attention shift was found even when participants actually saw a positive picture.

In contrast to the results for the athlete identity condition, participants with active volunteer identities had a markedly different pattern of data. On trials where these participants saw a positive picture that had been preceded by a red warning, performance *increased* relative to pictures which had been preceded by a green warning (94.7% vs. 76.8%), ($F(2, 49) = 4.175, p < .05$). There were no significant differences between the red and yellow warnings or yellow and green, both $p > .15$. When participants with an active volunteer identity saw a negative picture, however, there were no significant differences between the three types of warnings, all $p > .20$.

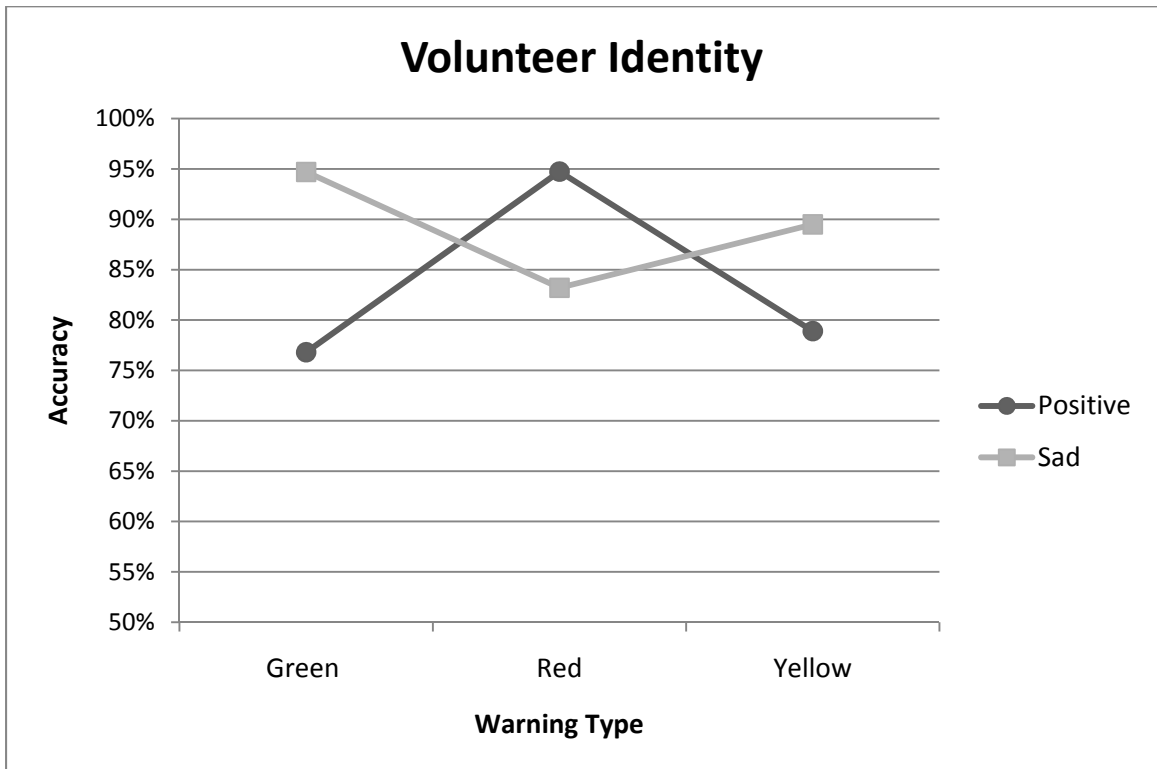
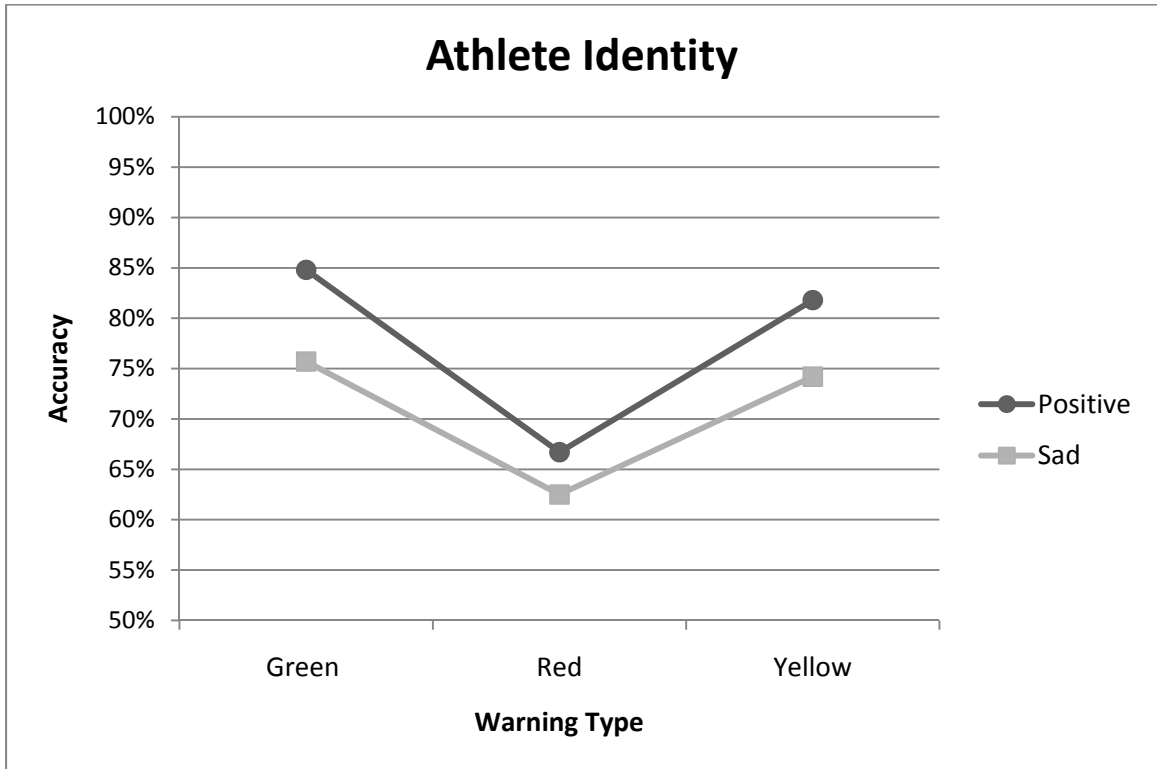


Figure 3.5: Emotion Profiles and Attention Deployment

These results suggest that, unlike participants with active athlete identities, those with salient volunteer identities did not see the red warnings and sad pictures as emotional events to be avoided. Because sadness *is consistent with* a volunteer's emotion profile, there was no need for individuals in the volunteer identity condition to shift their attention away from the target location—emotion regulation was unnecessary, and unused, as evidenced by the accuracy results.

Discussion. Experiment 4 finds support for the proposition that individuals engage in emotion regulation to enhance emotions that are consistent with the active identity's emotion profile or to decrease emotions that are inconsistent with the emotion profile. Participants who had an active volunteer identity did not shift attention away from the sad pictures, implying that these participants were directing their attention onto the picture in order to maintain or enhance their experience of sadness. In contrast, participants with an active athlete identity showed significant performance decrements following sad pictures and red warnings, as they shifted their attention away from these stimuli in order to reduce the inconsistent feelings of sadness. Not only does this experiment support the theory that emotion regulation is employed to enhance emotion profile consistency, but it shows that individuals can strategically regulate their emotions in service of identity consistency goals. This emotion regulation can be seen as strategic because the warnings had an effect on participants' attention shifts: they formed an expectation of the upcoming picture (consistent or inconsistent with emotion profile) and shifted their attention accordingly. The largest drops in accuracy—the largest attempts to reduce emotional experience—were observed in participants with active athlete identities,

who saw a sad picture, after a red warning. That red warning prepared athlete participants for the sad picture, and they allocated their attention accordingly: in a strategic manner to support the athlete emotion profile.

By utilizing a novel paradigm that measures emotion regulation, Experiment 4 demonstrates that the emotion profile associated with an active identity can dictate the strategic use of emotion regulation. Participants actively managed their emotional state in order to conform to the identity's emotion profile. This highlights a unique contribution of the current theory: emotion regulation can be used strategically to enhance identity consistency.

While experiment four provides further support for the proposed theory, it has not connected these processes to actively enhancing a negative emotional state (Tamir et al. 2008). Thus, Experiment 5 employs an experimental design demonstrating that the motivation to be consistent with salient emotion profiles can drive an individual to choose a product that will enhance the intensity of a negative emotion, directly in contrast to the hedonic principle (Higgins 1997) and providing a stringent test of the current theory.

Experiment 5: Emotion Profiles and Emotion Regulating Products

The final experiment is designed to show that products which are positioned as enhancing a negative emotion which is consistent with the active emotion profile will be preferred. Experiment 5 has a 3 (identity: athlete, volunteer, control) x 2 (emotion: anger, sadness) x 2 (product positioning: enhance, reduce emotions) between-subjects design,

where the emotion is induced incidentally, and a product is positioned as either increasing or decreasing emotions within an advertisement (Williams and Drolet 2005).

The proposed theory predicts that the athletes will prefer the products that reduce emotion if they are experiencing sadness, but not anger, and volunteers will prefer that which decreases anger, but not sadness. Other theories, such as mood repair (Labroo and Mukhopadhyay 2009) and emotion regulation (Gross 1998b), would predict that preferences for the emotion regulating product should not differ based on either the salient identity or the specific emotion: all participants are in negative states, thus all should want to decrease their emotions. This unique prediction highlights the core contribution of the current work, emphasizing consistency with identity-specific emotion profiles as a driver of emotion regulation.

This study also demonstrates that products can be framed as emotion regulators (Williams and Drolet 2005), and that consumers prefer those products that regulate emotions in an identity-consistent manner. Importantly, this study reveals that the benefits of identity targeted advertisements and products can be attained without ever mentioning the identity. By simply capitalizing upon the emotion profile associated with the specific identity, product preferences can be altered.

Participants and Procedure. Two hundred twenty-four individuals participated in this experiment, where the average age was 24 years (age range 18-59) and 59% were female. Participants were paid \$10 for their involvement in a one-hour lab session containing multiple studies, of which this was one.

Participants were told that they would be participating in two unrelated studies: a writing task, and a “divided attention” study. The procedure is as follows: first, participants were primed with either the athlete, volunteer, or neutral identity, as in Experiments 1-4. Next, participants were told that they would be participating in a “divided attention” study, where they would be asked to do two things simultaneously. This experiment contained both the emotion manipulation and the product evaluation.

To induce the target emotion in participants, a facial and bodily feedback procedure was used. Following the procedure described by Flack and colleagues (Flack, Laird, and Cavallaro 1999), participants were instructed to position their face and body into specific orientations that correspond to either anger or sadness. These types of expressive emotion manipulations have been shown to not only induce mild to moderate levels of emotion, but also are specific to the target emotion (e.g., anger position induces anger only, not general negativity: Duclos et al. 1989). Participants received the following instructions, taken from Flack and colleagues’ (1999) validated manipulations:

Anger: Push your eyebrows together and down. Clench your teeth tightly and press your lips together. Put your feet flat on the floor directly below your knees, and put your forearms and elbows on the table. Now clench your fists tightly, and lean your upper body slightly forward.

Sadness: Lower your eyebrows down toward your cheeks. With your mouth closed, push up lightly with your upper lip. Sit back in your chair, resting your back against the back of the chair, and draw your feet loosely under your chair. You should feel no tension in your legs or feet. Drop your head, letting your rib cage fall, and letting the rest of your body go limp. You should feel just a slight tension up the back of your neck and across your shoulder blades.

Participants were given 15 seconds to arrange their body in the correct position, and were asked to maintain the position until told to stop.

At this point, participants were presented with a product that they would get to test and evaluate. Individuals were shown a short video about a fictional product, AudioClear White Noise Headphones. While the video played, white noise was generated in participants' headphones, as a sample of what using the AudioClear product would be like. Importantly, participants received one of two infomercials: enhance or reduce emotions. In the enhance emotions condition, participants read that the AudioClear product would intensify their emotional experiences, "tightening the connection between their mind and body." In the reduce emotions clip, participants read that the product would reduce their emotions, "making their minds calm and rational." Thus, the product was positioned as either up-regulating (enhancing) or down-regulating (reducing) emotions.

After viewing the advertisement, participants evaluated the headphones on a set of measures, including attitude toward the brand, purchase intention, and willingness to pay. Additionally, participants rated their current emotional state, in order to assess the impact of product positioning and trial.

Results. The two measures of attitude toward the product (1= *dislike intensely* to 9=*like intensely*) and purchase intention (1=*definitely would not buy* to 9=*definitely would buy*), were combined to form a single index of brand attitude ($\alpha = .878$). A three-way ANOVA with identity, emotion and product positioning as between-subjects factors was run on the brand attitude measures. A main effect of identity was found ($F(2, 212) = 4.867, p < .05, \eta_p^2 = .044$), such that participants with an active volunteer identity had

significantly higher attitudes toward the headphones ($M = 4.69$) than participants in the control condition ($M = 3.72$). No other contrasts were significant.

However, this main effect was qualified by the predicted three-way interaction between identity, emotion, and product positioning ($F(2, 212) = 8.432, p < .001, \eta_p^2 = .074$). Follow-up contrasts show that those participants with an active athlete identity experiencing anger have no preference for the reducing headphones versus the enhancing ones (4.03 vs. 4.63), ($F(1, 212) = .907, p > .30$). In contrast, participants with an active athlete identity who are experiencing sadness significantly prefer the reducing headphones to the enhancing ones (5.21 vs. 3.25), ($F(1, 212) = 7.757, p < .01$). Thus, for participants with active athlete identities, when they are experiencing an inconsistent emotion (sadness), they prefer a product that promises to reduce the inconsistent emotions (see Figure 3.6).

For those participants with active volunteer identities, however, the pattern is different. When these participants experience the emotion profile inconsistent emotion of anger, they have significantly higher attitudes toward the product positioned as reducing emotions versus the enhancing headphones (5.04 vs. 3.71), ($F(1, 212) = 4.343, p < .05$). When participants with an active volunteer identity are experiencing the emotion profile-consistent emotion of sadness, however, they have significantly higher attitudes toward the product positioned as *enhancing* their experience of sadness versus reducing it (5.74 vs. 4.30), ($F(1, 212) = 5.416, p < .05$). Thus, these participants are attempting to increase their experience of sadness—further boosting their emotion profile-consistency. Those participants in the control condition merely show no preference differences for either product, regardless of the emotion they are experiencing, all $p > .50$.

A similar three-way ANOVA was run on the willingness to pay data, with identity, emotion, and product positioning as predictors. A significant main effect of identity emerged, ($F(2, 212) = 3.603, p < .05, \eta_p^2 = .033$), such that participants in the control condition were willing to pay significantly less ($M = \$16.34$) for the product than either those individuals with active athlete ($M = \$24.97$) or volunteer ($M = \25.64) identities, both $p < .05$. No other contrasts were significant.

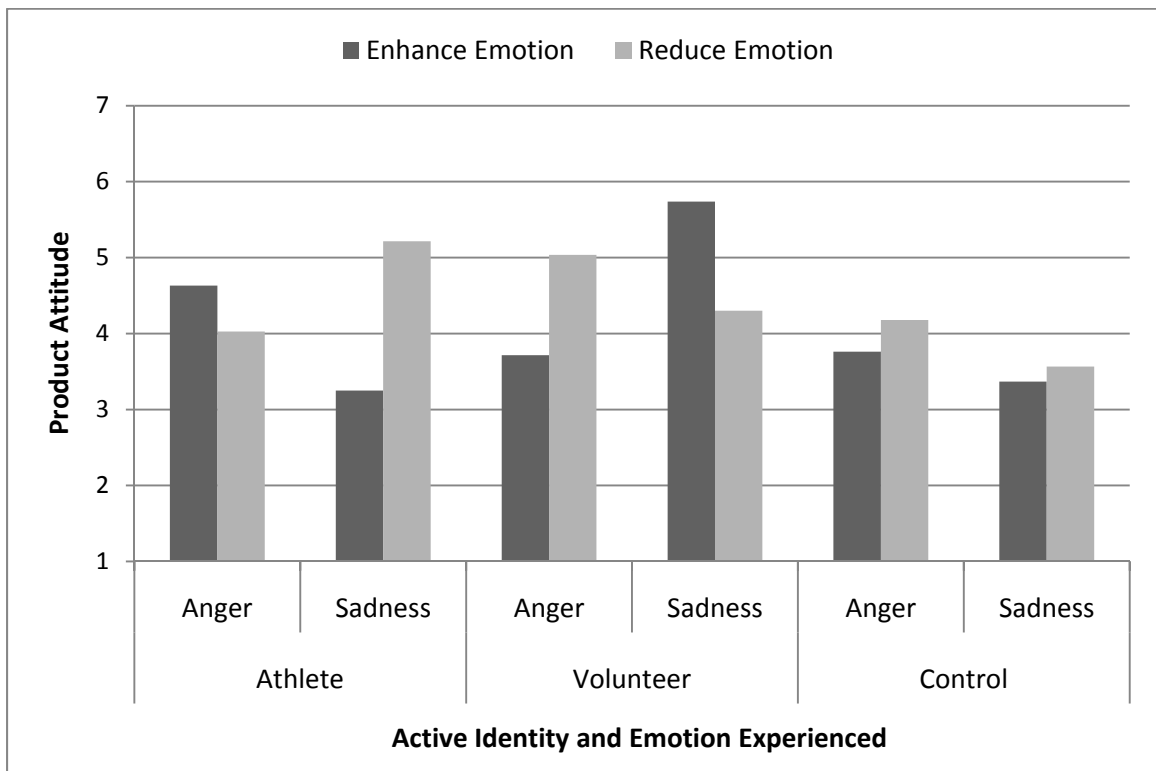


Figure 3.6: Emotion Profiles and Emotion Regulating Products

Along with the significant main effect of identity, there was also a marginally significant three-way interaction between emotion, identity, and product positioning, ($F(2, 212) = 2.852, p = .060, \eta_p^2 = .026$). Follow-up contrasts show that participants with

an active volunteer identity who are experiencing sadness are willing to pay significantly more for the product positioned as enhancing emotions ($M = \$37.05$) versus as reducing emotions ($M = \$18.35$), ($F(1, 212) = 6.204, p < .05$). This result follows from the attitude data, in that participants with an active volunteer identity place greater value on the product which enhances their experience of emotion profile-consistent emotions (sadness). No other contrasts were significant.

After collecting the attitude and willingness to pay measures, participants also filled out an emotion scale containing fourteen items. An index of participants' felt anger was created with two items, angry and annoyed ($\alpha = .708$). This index was subjected to a three-way ANOVA with identity, emotion, and product positioning as predictors. There was a significant main effect of emotion ($F(1, 212) = 13.433, p < .001, \eta_p^2 = .060$), whereby participants in the anger condition experienced more anger ($M = 3.55$) than those in the sad condition ($M = 2.69$), replicating earlier findings on the effectiveness of these manipulations (Flack et al., 1999). Interestingly, a main effect of product positioning was also found ($F(1, 212) = 6.127, p < .05, \eta_p^2 = .028$), such that participants who experienced the product positioned as enhancing emotions felt more anger ($M = 3.40$) than those who tried the product positioned as reducing emotions ($M = 2.87$), perhaps suggesting that the product positioning manipulation was quite effective and believable, in that it changed actual emotion experience.

Similarly, three items (sad, depressed, upset) were combined to create a sadness index ($\alpha = .857$), which was analyzed with a three-way ANOVA. While there was no main effect of emotion condition ($F(1, 212) = 1.598, p > .2$), there was again a main effect of product positioning ($F(1, 212) = 6.630, p < .01, \eta_p^2 = .030$). As in the anger

analysis, participants who tried a product positioned as enhancing emotions experienced higher levels of sadness ($M = 3.00$) than those who tried the reducing emotions product ($M = 2.48$). Together, these results suggest that the same product experience (listening to 35 seconds of white noise) can have markedly different effects on a consumer's emotions, based on how the product is positioned. These are some of the first results showing that not only can products be positioned as emotion regulators (Williams and Drolet 2005), but that when positioned as such, these products impact consumers' actual emotional experience.

Discussion. Experiment 5 replicates the earlier studies in support of the proposed theory: individuals engage in emotion regulation to enhance emotions which are consistent with the identity's emotion profile or to decrease emotions that are inconsistent with the emotion profile. Using a different emotion manipulation from previous studies (facial and bodily feedback), this study again shows that participants with active athlete identities attempt to eliminate sadness, while those with active volunteer identities try to reduce anger.

In addition to these findings, Experiment 5 provides another contribution: products positioned as emotion regulating can have actual impact on individuals' subjective experience of emotion. While other researchers have suggested that consumers may purchase products in order to change their emotional state (e.g., Labroo and Mukhopadhyay 2009), this is one of few studies to show that product trial actually regulates emotion experience.

It is worth noting that this study positioned the product as either reducing or enhancing emotions. From the proposed theory, the prediction would be that participants with active athlete identities would prefer the product which enhanced anger, as was observed with participants in the active volunteer condition experiencing sadness. The data did not show this pattern of preference for emotion enhancement for athletes in the emotion profile-consistent conditions. One reason for this may be that the elimination of negative emotions is a particularly salient goal (Gross et al. 2006; Tamir et al. 2008). In order for participants to express preference for the emotion enhancing product, they would need to overcome this goal entirely, and pursue a solely instrumental (versus hedonic: Higgins 1997) emotion experience. As participants did not need to execute the salient identity after product evaluations (e.g., they were not expecting to perform athletically), the instrumental component of the emotion may have been less valuable. Additional studies that make the identity goals more salient (e.g., participants anticipate a task that engages the specific identity) may increase the instrumental value of emotions and manifest higher preferences for emotion enhancing products in the emotion profile-consistent conditions. Despite the lack of preference for emotion enhancing products in the athlete condition, the fact that participants preferred the emotion reducing product only in the emotion profile-inconsistent conditions represents a sharp departure from existing emotion regulation research, and presents a unique contribution of the current theory.

3.5 General Discussion

Taken together, the results from the pretests and five studies suggest three novel findings. First, social identities are not merely collections of attitudes, beliefs, and behaviors, but also include connections to specific emotional states. The pretest data support this contention, providing “emotion profiles” for a variety of social identities, and demonstrating a variety of social judgments where expressing consistent or inconsistent emotions changes personal evaluations. Experiments 1 through 3 looked at the effects of emotion profiles on the emotion experience, demonstrating that these identity-relevant constructs can influence appraisal (Experiment 1), emotion contagion (Experiment 2), and motivation (Experiment 3). The final two studies connected emotion profiles to strategic emotion regulation: Experiment 4 created a situation where individuals must shift their attention in order to maintain consistency with an active emotion profile. Changes in attention were measured, demonstrating that individuals use the attention deployment strategy to decrease emotions that are inconsistent with the emotion profile or maintain those that are consistent with it. In Experiment 5, participants were asked to express their preference for products framed as emotion regulators, managing to avoid inconsistent emotions.

Across five different types of emotion manipulations, these studies demonstrate that individuals can use emotions instrumentally, to achieve identity consistency, and that they can strategically regulate their emotions in order to coincide with a salient emotion profile. Finally, Experiment 5 also revealed that products framed as emotion regulators can have actual impact on consumers’ emotional states. These two elements—that

identities have emotion profiles, and that individuals regulate their emotions in order to maintain consistency with emotion profiles—tell of a new source for emotion regulation goals (social identity), and describe a process by which emotion regulation is employed to achieve identity-consistent outcomes. In the final essay, these emotion profiles are connected to consumer outcomes: persuasion, choice, and consumption.

Chapter 4

Me, My Self, and Emotion: Emotion Profiles and Consumption

“He who reigns within himself, and rules passions, desires, and fears, is more than a king.” John Milton

When do *consumers* want to change their emotional experience? While the consumer behavior literature has typically treated consumers as passively experiencing emotion—emotion is induced in the individual, from which a series of downstream events occur—there is substantial evidence that people can and do manage their ongoing emotional experiences (Andrade and Cohen 2007; Gross and Thompson 2007). Known as *emotion regulation*, this is the self-management process where individuals manipulate either the emotion antecedents or the subjective, physiological, and behavioral elements of the emotional response (Gross 1998). Generally, people try to change their emotions when they feel bad, as when a person eats a chocolate bar after reading a sad story (cf. Study 4: Labroo and Mukhopadhyay 2009).

Building on the concept of emotion profiles described in the previous chapter, this work examines the consequences of social identities associated with emotions for consumers, marketers, and marketing outcomes. The theory behind emotion profiles is briefly reviewed, and then studies connecting this concept to downstream marketing outcomes are presented.

Research in marketing has highlighted the effect of identity on advertising effectiveness (Forehand and Deshpandé 2001), preference formation (White and Dahl 2007), and consumption (Berger and Heath 2007). These streams emphasize that when an identity is salient, it activates associated attitudes, behaviors, and beliefs—which then influence consumers’ response to marketing activities. But this area has overlooked whether particular emotions are associated with specific identities, and whether the pursuit of these specific emotions can influence consumption. The next section introduces a new construct to consumer behavior, *emotion profiles*, and describes why social identities may have associations to specific emotions which then guide behavior and consumption.

4.1 Emotion Profiles in Consumer Behavior

Emotion regulation theory outlines a variety of strategies consumers may use to select and manage their ongoing emotional experiences. Some emotion regulation strategies are forward-looking, where an individual chooses to enter a situation because it provides the opportunity to experience a desirable emotion. Other strategies influence the current emotional state, allowing an individual to reduce unwanted emotions, or enhance desirable ones. Finally, some strategies simply mask the internal emotional state, providing the external appearance of another emotion—despite a different subjective experience. While all of these strategies provide tools for a consumer to select and alter their emotions, the emotion regulation literature has little to say about *when* a person may want to use these self-regulatory procedures.

The framework proposed in the present research suggests that an individual's identity activates a specific emotion profile: these profiles constrain the set of desirable emotions consistent with that identity. Research from cross-cultural psychology and organizational behavior suggests that emotion profiles are acquired through learned norms (Hochschild 1983), and that conforming to these profiles can enhance the enactment of key roles (Simpson and Stroh 2004). Thus, emotions can be used instrumentally, as inducing or amplifying emotions that conform to an identity's emotion profile enhances identity consistency. In contrast, if a person experiences an emotion that is inconsistent with the active emotion profile, emotional dissonance results—characterized by negative feelings of discomfort and tension (Jansz and Timmers 2002). This dissonant state motivates the individual to engage in emotion regulation processes to change or reduce the violating emotion, thereby diminishing emotional dissonance. In this way, identities provide a motivating force to engage in emotion regulation.

If emotion profiles exist, the degree to which an individual is experiencing emotions which are consistent or inconsistent with the active emotion profile should have significant consequences for various consumer outcomes. Specifically, when an individual has an active identity, its emotion profile would also be activated, and the individual should thus prefer emotional experiences which are consistent with that emotion profile. So if the person is presented with an opportunity to select between emotional experiences, he or she should choose those options which provide an emotional encounter that conforms to the active identity's emotion profile. In addition to choice, individuals should also be more persuaded by communications that have an emotional tone that is consistent with the identity's emotion profile—in this way, the

marketing communication is achieving identity-targeting (White and Dahl 2007) through emotional advertising. Finally, due to the emotional dissonance which arises from experiencing an identity-inconsistent emotion, individuals will be motivated to regulate their emotions in order to achieve or enhance emotion profile-consistency. Thus, if individuals are presented with a product that assists them in these emotion regulation goals, that product should receive higher attitudes and greater levels of consumption than a product which impedes their emotion regulation goals. Therefore, the activation of identities and their associated emotion profiles should lead to differences in choice, persuasion, and product preferences.

4.2 Emotion Profiles and Consumption: Studies

In order to test the proposed framework, two pretests and four studies are described. Specifically, the following hypotheses are investigated: first, that there are associations between specific social identities and discrete emotions, and second, that consistency with the active identity's emotion profile will lead to enhanced marketing outcomes: more positive attitudes, greater choice, and higher consumption. Once these emotion profiles have been identified, the current framework predicts that there will be differences in outcomes if an individual experiences an emotion that is consistent or inconsistent with their active identity's emotion profile. In particular, experiencing an emotion profile-consistent emotion will enhance outcomes, such as attitude toward an advertisement and consumption of products that improve emotion profile-consistency. When experiencing an emotion profile-inconsistent emotion, these outcomes will be

diminished, leading to lowered persuasion and consumption. Thus, the prediction is an interaction between social identity and emotion experience on attitudes toward an emotional advertisement and selection of emotional experiences. In addition to the effect of emotion profiles on consumer outcomes, we also predict that individuals will be motivated to engage in emotion regulation based on an identity's emotion profile. If an individual experiences an emotion profile-consistent emotion, he or she will try to up-regulate or enhance that emotion experience, and would have higher attitudes toward products positioned as enhancing that emotion. In contrast, if an individual experiences an emotion profile-inconsistent emotion, he or she would engage in down-regulation to try and reduce that emotional experience, and would thus have higher attitudes toward products positioned as reducing the emotion.

Over the course of two pretests and three studies, these hypotheses are tested. Pretest 1 uncovers the associations between specific social identities and discrete emotions, identifying a set of emotion profiles. Pretest 2 then looks at how individuals understand these emotion profiles, and whether emotion profile-consistency or inconsistency influences judgments of marketing messages. Study 1 then looks at the effect of an active identity on persuasion arising from an emotional advertisement. Study 2 gives individuals an opportunity to select emotional content which is either consistent or inconsistent with their active emotion profile. Study 4 then measures the degree to which individuals engage in emotion regulation to reduce emotion profile-inconsistent emotions, or enhance emotion profile-consistent ones. Throughout these empirical tests, the prediction is an interaction between the active social identity and the emotion experience: when individuals experience an emotion which is consistent with the active

identity's emotion profile outcomes will be enhanced, but if they experience emotions which are inconsistent with the active emotion profile outcomes will be reduced. Ultimately, this work addresses whether emotions are implicated within the self-concept and how that influences consumer outcomes.

Pretest 1: Associations between Specific Emotions and Social Identities

In order to discern whether individuals believe that specific emotions are associated with certain social identities, a pretest was run. In this pretest, participants were asked to assess how useful experiencing a set of emotions would be for a single target identity. Usefulness was chosen as the construct of interest, as it captures the essence of emotions being used instrumentally—in the service of other goals (Tamir 2005). One hundred eight undergraduates participated in the pretest, which was part of an hour-long behavioral lab session, along with other studies. For their participation, individuals were paid \$10.

In the pretest, participants were randomly assigned to a condition, where they were presented with one social identity from a set of ten identities (artist, athlete, romantic partner, businessperson, environmentalist, friend, party host, politician, student, volunteer). They were asked to rate the whether someone with that identity would find experiencing particular emotions useful, from a set of ten emotions (anger, disgust, fear, guilt, disappointment, sadness, hope, worry, relaxation, pride) on a scale from 1 = not at all helpful to 7 = extremely helpful.

	Anger	Sadness	Fear	Guilt	Hope
Artist	5.10 _a	5.29 _a	4.10 _b	4.00 _c	5.95 _a
Athlete	4.38 _a	2.54 _b	2.79 _b	2.58 _b	6.29 _c
Romantic Partner	2.65 _a	2.78 _a	3.04 _a	2.43 _a	6.04 _b
Businessperson	2.67 _a	1.95 _a	2.38 _a	2.19 _a	5.33 _b
Environmentalist	4.10 _a	2.67 _b	3.52 _a	2.81 _b	6.43 _c
Friend	1.77 _a	2.41 _b	2.41 _b	2.68 _b	5.76 _c
Party host	1.41 _a	1.55 _a	1.64 _a	1.45 _a	5.36 _b
Politician	3.27 _{a,d}	2.45 _b	3.27 _a	2.45 _{b,d}	6.55 _c
Student	2.57 _a	2.95 _a	3.19 _a	3.24 _a	6.38 _b
Volunteer	1.85 _a	2.90 _{b,d}	2.20 _{a,d}	2.10 _a	6.80 _c

Table 4.1: Emotion Profiles³

The purpose of the pretest was to establish that individuals see connections between an identity and specific emotions, as well as discover the emotional profile associated with a variety of identities relevant to our student participants. In all, ten identities were evaluated with regards to ten distinct emotions (see Table 4.1 for a subset of the results). While some identities were seen as reaping little benefit from experiencing an emotion (e.g., businesspeople are seen as relatively unemotional, with generally low ratings across emotions), many identities had one or two emotions that were seen as being quite useful. For instance, athletes were seen as individuals for whom experiencing anger was quite useful ($M = 4.38$), to the extent that it was the most useful negative emotion, all $p < .05$. In contrast, volunteers appear to benefit from experiencing sadness ($M = 2.90$) to the exclusion of all other negative emotions, $p < .05$.

The pretest data provides two important pieces of evidence. First, it represents preliminary support for the current theory, in that some specific emotions are seen as

³ Note: within each row, means with different subscripts differ at the $p < .05$ level.

particularly useful for certain social identities but not others. While the data do not state why these associations exist, or how they come to be learned, many of the associations follow from emotion theory. For instance, anger may be useful for athletes because its external locus of control (Frijda 1986) focuses attention on the obstacles impeding goal pursuit, and thus may inspire competition and motivation to overcome barriers to progress. In contrast, sadness may be useful for volunteers because it involves a sense of loss and the motivation to change circumstances (Frijda 1986)—indeed, recent work has shown that the expression of sadness on victims' faces in charity advertisements promotes sympathy and helping behavior (Small and Verrochi 2009).

Interestingly, some of the emotions were undifferentiated across identities: hope was seen as useful for all identities, while relaxation was seen as relatively useless. It is noteworthy that these emotions lack specific action tendencies (Frijda 1986) and are characterized by more diffuse affective states. Their lack of identity-specific associations may be due to these characteristics, or the restricted set of identities provided to participants. While both the athlete and volunteer identities were seen as benefitting from hope and pride, these two positive emotions were not specific to these identities. Indeed, the average rating for hope was consistently high, regardless of which identity was being evaluated. This may be consistent with some work that posits the positive emotions are more diffuse affective states, lacking clear appraisal dimensions and action tendencies (Frijda 1986). Due to the broadness of these emotions, they may not match with a particular identity.

In contrast to the positive emotions, negative emotions are highly differentiated and contain specific appraisal tendencies and action readiness states (Frijda 1986;

Raghunathan, Pham, and Corfman 2006), which may be underlying the specific emotion profiles that emerged for each identity. To that point, the remaining discussion will focus on the negatively valenced emotions. Focusing on negatively valenced emotions also avoids a potential confound when examining emotion regulation and choosing emotion states: if an individual chooses to experience or enhance their experience of a positive emotion, is it due to the fact that the emotion matches their identity's emotion profile, or because it is hedonically pleasing? For positive emotions, it is difficult to disentangle these two explanations. For negative emotions, in contrast, it cannot be due to the hedonically pleasing components of the emotion, as by definition negative emotions are unpleasant. Thus, the remaining discussion and empirical tests will focus on negative emotions which are associated with specific identities. This does not preclude the association of specific positive emotions with identities, but allows for more parsimonious tests of the current theory. At the very least, however, these results provide a set of emotion profiles that can be leveraged to test the theory described here.

Specifically, the pretest data afford two emotion profiles that are of particular interest: athlete-anger, volunteer-sadness. These social identities had strong associations to each of these emotions and, importantly, had contrasting profiles. These contrasting profiles allow a more parsimonious test of the theory, as individuals with a salient athlete (volunteer) identity should prefer to experience anger (sadness), and should regulate their emotions to avoid sadness (anger). Pretest one thus provides a useful starting point for understanding the associations between emotions and social identities. However, the design of this pretest focused solely on the usefulness of these emotions toward specific identities—no other assessments were made. So while anger may be useful for athletes, it

is unclear whether combining cues relevant to the athlete identity with angry emotional components would be evaluated well. Specifically, is there more to the association besides just usefulness? One starting point for understanding the implications of emotion profiles would be to examine advertising messages. Both identity-relevant marketing and emotional appeals have received great attention in recent research (e.g., Agrawal, Menon, and Aaker 2007; White and Dahl 2007) and practice (e.g., Burger King's "I'm a Man!" campaign, 2009), suggesting that examining how emotion profiles (the confluence of identity and emotion) impacts advertising effectiveness. Pretest two attempts to assess (for the athlete-anger and volunteer-sadness profiles) whether marketing concepts are influenced by the emotion profile, with a particular focus on the judgments of advertisements that incorporate both the identity and its corresponding emotion profile.

Pretest 2: Emotion Profiles and Advertising Judgments

In order to further understand the concepts implicated in the emotion profiles identified in pretest one, a second pretest was run. In this pretest, participants read a short description of a fictional company that was either an athletic equipment company or a volunteer organization. Following the brand description, participants were shown mock-ups for a print advertisement and a radio spot, which were manipulated via color and music choices to create either an angry or sad emotional tone. Participants were then asked to evaluate the effectiveness, persuasiveness, design elements of the marketing materials, and appeal to the targeted audience. Questions regarding the success of the ad at targeting the relevant market were included in order to see whether consistency with

the emotion profile would impact the main dimension of identity-marketing success: ability to strategically target a selective sub-market (Reed 2004). In all these measures were meant to capture the types of advertising judgments that might be influenced by emotion profiles: does the emotional tone match the target market, will the target market be persuaded by these materials, and how effective will these materials be in creating new growth. All of these characteristics are judgments that may be used in forming an impression of an advertisement—will they be influenced by emotion profile-consistency?

One hundred ninety-six individuals participated in the pretest, which was part of an hour-long behavioral lab session, along with other studies. The average age of participants was 21 (age range 18-30), and 61% were female. For their participation, individuals were paid \$10. The pretest used a 2 (brand identity: athlete, volunteer) by 2 (ad emotion: anger, sadness) between-subjects design. Participants read one of two brand descriptions:

Athlete: Pinnacle is an athletic company that provides uniforms and equipment to college and professional sports teams. Their brand name comes from the idea that top athletes are at the pinnacle of success—the top level, the unbeatable. Reflecting that, their slogan is “Raise Up,” suggesting that the athletes who use their brand will be able to rise above all other competitors.

Volunteer: Pinnacle is a charitable organization that provides food and volunteers to homeless shelters and soup kitchens. Their brand name comes from the idea that volunteers are at the pinnacle of caring—the top level, the most caring. Reflecting that, their slogan is “Raise Up,” suggesting that the volunteers who work with their company can help raise the spirits and lives of those they aid.

Following the brand description, participants also read about the marketing materials they would view:

Anger: For their print campaign, Pinnacle has designed a red-and-black layout. In the radio advertisements, the introduction to the ad begins with some heavy-metal music and then a voice-over describes the company and its locations. On the next

page we will show you an example layout of the print campaign, and allow you to listen to a sample of the music for the radio advertisement.

Sadness: For their print campaign, Pinnacle has designed a light blue and gray layout. In the radio advertisements, the introduction to the ad begins with some quiet jazz music and then a voice-over describes the company and its locations. On the next page we will show you an example layout of the print campaign, and allow you to listen to a sample of the music for the radio advertisement.

These two components were combined to form four unique brand vignettes. From these brand vignettes, participants went to the next page of the study and were presented with a mock-up print ad, which were either red and black in the angry condition or blue and gray in the sad condition. All components of the ad (text boxes, clip art, brand logo) were the same, only the colors were different, leveraging research on the emotionality of colors which suggests that individuals have distinct color-emotion associations, such as red-angry (“seeing red”) and light blue-sad (“feeling blue;” Valdez and Mehrabian 1994). In addition to the mock print ad, participants could also push a button to hear a 10 second sample of the music which would play during the radio advertisement. These songs had been identified in a pretest, such that the angry song was rated as significantly angrier ($M = 4.69$) than the sad song ($M = 2.64$), $p < .01$, and the sad song was rated as significantly sadder ($M = 4.73$) than the angry song ($M = 3.31$), $p < .01$. Both songs were equally unfamiliar and equally favorable, both $p > .50$.

From these simulated marketing materials, participants were asked to rate the materials on a variety of dimensions: overall effectiveness (single-item), how much growth will the firm experience due to these ads (single item), advertising evaluations (seven items), and success of targeting (two items). After completing the measures, participants were thanked, debriefed, paid and dismissed.

Results. Participants were first asked to make an overall rating of how *effective* they thought the advertisement would be on a sliding scale from 0=extremely ineffective to 100=extremely effective. These ratings were subjected to a two-way ANOVA with identity (athlete, volunteer) and emotion (anger, sadness) as predictors. No significant main effects arose. However, a significant interaction between emotion and identity was revealed, ($F(1, 192) = 24.758, p < .001, \eta_p^2 = .114$). Follow-up contrasts show that participants who evaluated the volunteering company believed that the sad advertisements would be more effective than the angry ads (29.48 vs. 15.74), ($F(1, 192) = 15.550, p < .001$). In contrast, those who evaluated the athletic company believed that its advertisements would be more effective if they were angry, rather than sad (26.80 vs. 16.02), ($F(1, 192) = 9.569, p < .005$).

After providing the effectiveness ratings, participants were then asked to estimate how much Pinnacle's market would grow (in percent) following the introduction of these ads. Participants were asked to enter a number from 0-100%. These growth estimates were subjected to a two-way ANOVA with identity and emotion as predictors. There were no significant main effects of either emotion or identity, however a significant interaction between the two emerged: ($F(1, 192) = 16.612, p < .001, \eta_p^2 = .080$), seen in Table 4.2. Follow-up contrasts show that when participants were evaluating an athletic brand, they thought angry advertisements would grow the market more than sad advertisements (9.37% vs. 3.78%), ($F(1, 192) = 8.892, p < .005$). On the other hand, when participants were evaluating a volunteering company, they believed the advertisements would grow the market more when they were sad versus angry (10.46% vs. 5.24%), ($F(1, 192) = 7.739, p < .01$). It is important to note that participants were not

allowed to enter negative numbers, however, several did write in their open-ended comments that they believed these ads would damage Pinnacle’s market, implying negative growth (e.g., “This advertisement does not suit the brand identity of Pinnacle,” “The advertisement sends the wrong message and also speaks to the wrong audience.”). Future studies employing this design might allow participants to indicate negative growth, in addition to any positive advertising effects.

		Overall Effectiveness	Growth Created	Judgments of Campaign	Success of Targeting	N
Athlete	Angry	26.80	9.37	3.10	33.60	49
	<i>SD</i>	20.48	10.29	1.49	22.92	
	Sad	16.02	3.78	2.06	12.64	49
	<i>SD</i>	14.91	3.47	1.35	15.15	
Volunteer	Angry	15.74	5.24	2.04	16.78	50
	<i>SD</i>	13.50	6.25	1.00	14.97	
	Sad	29.48	10.46	3.68	32.09	48
	<i>SD</i>	19.22	13.82	1.47	18.13	

Table 4.2: Emotion Profiles and Advertising Judgments

From that question, participants moved on to a set of judgments about the advertisement. These questions allowed participants to indicate their agreement with a 1=disagree completely to 9=agree completely scale, where the prompts asked: (1) the ad design fits with Pinnacle, (2) the print advertisement is persuasive, (3) the radio ad is persuasive, (4) the ad campaign is believable, (5) the campaign fits the target market, (6) I like this campaign, and (7) the tone of the ad fits the message. Factor analysis revealed that these seven items all loaded onto one factor, thus an index was created by averaging all items ($\alpha = .934$). This ad judgment index was subjected to a two-way ANOVA with

identity (athlete, volunteer) and emotion (anger, sadness) as predictors. Again, there were no significant main effects of either emotion or identity, but a significant interaction between the two emerged, ($F(1, 192) = 52.822, p < .001, \eta_p^2 = .216$). Follow-up contrasts showed that participants evaluating the athletic company's marketing materials thought they were better when they created an angry tone rather than a sad one (3.102 vs. 2.058), ($F(1, 192) = 16.001, p < .001$). Participants who evaluated the volunteer company saw the sad advertisements as more fitting than the angry ones (3.676 vs. 2.037), ($F(1, 192) = 39.414, p < .001$).

Finally, participants were asked to indicate how successful the advertisement was at targeting the relevant consumer segment on two items, which were two 100-point scales: will/will not persuade the target market, and successfully/unsuccessfully targets the relevant market. Factor analysis showed that both items loaded onto one factor, so the scores were averaged to create a targeting scale ($\alpha = .914$). This index was subjected to a two-way ANOVA with identity and emotion as predictors. There were no significant main effects, however a significant interaction between emotion and identity emerged, ($F(1, 192) = 49.383, p < .001, \eta_p^2 = .205$). Follow-up contrasts showed that participants who evaluated the athletic company believed its targeting was more successful when the advertisements were angry rather than sad (33.602 vs. 12.643), ($F(1, 192) = 32.982, p < .001$). Participants who evaluated the volunteer brand, on the other hand, believed its targeting was better when the ads were sad, not angry (32.094 vs. 16.780), ($F(1, 192) = 17.600, p < .001$).

Discussion. The first pretest assessed whether participants believed that certain emotions are *useful* to specific social identities, and found that there are indeed associations between identities and emotions: revealing emotion profiles for each identity. Building upon the findings from the first pretest, the second attempted to understand what the implications of these identity-emotion associations are. In this pretest, two identities were used (athlete and volunteer) along with two emotions (anger and sadness). Here, identity was manipulated at the brand level, such that the company would be seen as a signal of a particular identity (athlete or volunteer) due to its product line and positioning statement. Using music and color to manipulate the emotional content of advertisements, participants were asked to evaluate a single advertisement. Across a variety of judgments, participants evaluated the brand which utilized an identity-consistent emotion in its advertising (e.g. athlete-anger, volunteer-sadness) as better than the brand expressing an identity-inconsistent emotion. Specifically, angry athlete ads and sad volunteer ads were seen as more effective, creating more market growth, were more persuasive, and better at targeting the relevant market segment than sad athletic brands or angry volunteer companies. These results provide further support for the existence of identity-specific emotion profiles, and suggest that experiencing identity-consistent emotions has implications for a variety of marketing judgments.

While the first two pretests present evidence for associations between identities and emotions, and suggest that these emotion profiles influence judgments, neither pretest examined actual emotion experience or an active social identity. Therefore, the studies which follow assess the influence of identity-specific emotions (emotion profiles) on consumer outcomes. Study one assesses the impact of emotion profiles on persuasion,

study two examines how emotion profiles drive the selection of emotional experiences, and study three connects the theory to emotion regulation, consumer preferences and consumption.

Study 1: Emotion Profiles and Persuasion

The first pretest suggested that there are connections between specific emotions and individual social identities, while the second demonstrated that these emotion profiles impact judgments of brands' advertising copy. In particular, in the second pretest, companies who utilized an emotion profile-consistent emotion were judged as more persuasive and more effective. The first study thus builds on these results, investigating whether emotional advertisements that are consistent with an identity's emotion profile will be more effective than ads which are inconsistent with that profile. Importantly, this study moves to the individual consumer as the social actor, where he or she has an active identity and then encounters an emotional stimulus—what are then the downstream effects of emotion profile-consistency or inconsistency?

This study builds upon research within consumer behavior that looks at the impact of specific emotions on advertising effectiveness (e.g., Edell and Burke 1987). Recent work on emotions and persuasion has emphasized that compatibility between the persuasion target and the specific emotion enhances persuasion (Agrawal, Menon, and Aaker 2007). For instance, Agrawal and colleagues (2007) looked at whether an advertisement was self- or other-focused (e.g., about “me” or about “my family”), and how discrete emotions with self- or other-focused appraisal dimensions influenced the

match between the target and persuasion. The authors found that indeed, advertisements that were self-focused and contained a self-focused emotion (e.g., pride) enhanced the relevance and importance of the advertisement, versus ads which were self-focused but contained an other-focused emotion (e.g., empathy). Following this theory of enhanced compatibility, study 1 seeks to test whether advertisements which match the emotion profile of the active identity are seen as more persuasive.

The study used a 3 (identity: athlete, volunteer, control) by 2 (emotion: anger, sadness) between subjects design. The prediction is that participants primed with an athlete identity will have more positive attitudes and higher behavioral intentions towards an angry advertisement, but participants primed with a volunteer identity should have higher attitudes when presented with a sad advertisement. Additionally, the emotion profile-consistent advertisement should be seen as more relevant, as it more effectively communicates with the target market, similar to the results in study 1. The control participants should not differ in their responses to the two advertisements.

Participants and Procedure. Eighty-three participants completed this study, where the average age was 20 years (age range 19-32), and 52% of the participants were female. Individuals were randomly assigned to one of the six conditions (athlete-anger, athlete-sadness, volunteer-anger, volunteer-sadness, control-anger, control-sadness). Participants were paid \$10 for their involvement in an hour-long lab session, in which this study was one of multiple experiments.

Participants first engaged in a “writing task” which included an identity prime. They were instructed to write about a time when they performed as an athlete (volunteer),

and were asked to describe it in such detail that someone reading the story would experience it as if it were happening to them. This type of writing task is common in the social identity and consumer behavior literatures (e.g., Reed 2004), and has been shown to reliably increase the salience of the target identity. Individuals in the control conditions were simply asked to write about their day yesterday.

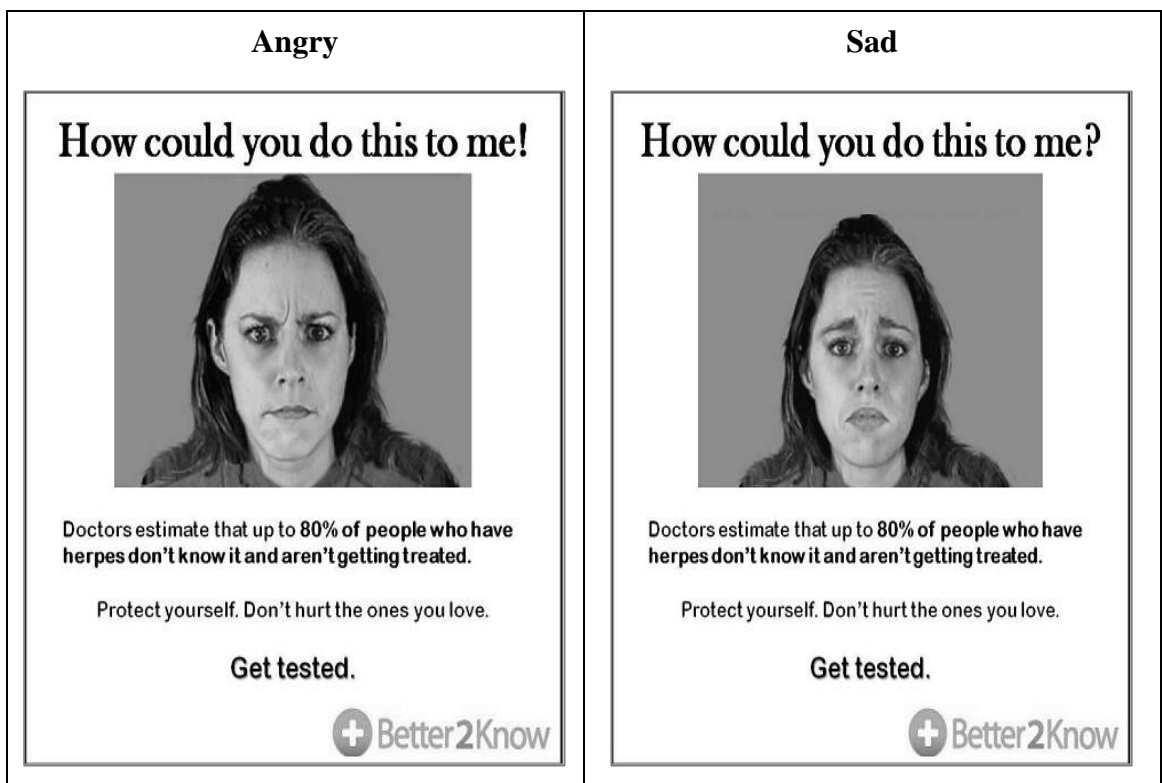


Table 4.3: Emotional Advertisements

Immediately following the writing task, participants were then presented with an ostensibly unrelated “advertising evaluation” study. In this study, participants were told that they would be reading a print advertisement, and then evaluating it on a variety of dimensions. The ad (see Table 4.3) was promoting STD testing, a relevant topic for

undergraduate lab participants, yet equally unrelated to either the athlete or volunteer identities. To manipulate the emotion of the advertisement, two copy changes were made. In the angry ad, the headline read “How could you do this to me!” and in the sad ad, it read “How could you do this to me?” In addition to the headline, the picture in the angry ad was of a woman expressing anger, while the sad ad was the same woman expressing sadness. The pictures were taken from a validated set of facial expressions (Beaupré and Hess 2005).

After viewing the advertisement, participants were then asked to evaluate the ad on a set of scales: attitude toward the advertisement, relevance, and behavioral intentions. Once they had completed these measures, participants were debriefed, thanked, paid and dismissed.

Results. Participants were first asked to rate their attitude toward the advertisement on a 10-item scale (good, pleasant, nice, irritating, interesting, annoying, positive, favorable, believable, effective: Williams and Drolet 2005). Each item was presented as a 100-point sliding scale from 1= not at all to 100= extremely. The ten items were subjected to a factor analysis, and one factor emerged, thus the items were averaged to create one index of Aad ($\alpha = .82$). A two-way ANOVA was then run on the Aad ratings, with identity and emotion as predictors. A significant main effect of identity emerged ($F(2, 77) = 6.631, p < .01, \eta_p^2 = .147$), such that the ratings from the volunteer participants were significantly lower ($M = 30.96$) than either the athlete ($M = 44.91$) or control conditions ($M = 40.66$), both $p < .05$. However, this main effect was qualified by a significant interaction between emotion and identity ($F(2, 77) = 8.895, p < .001, \eta_p^2 =$

.188). As predicted, for those participants with an active athlete identity, attitude toward the advertisement was higher when the ad was angry than when it was sad (51.89 vs. 37.94), ($F(1, 77) = 7.974, p < .01$). In contrast, participants with an active volunteer identity rated the sad advertisement as higher than the angry ad (40.17 vs. 23.71), ($F(1, 77) = 9.757, p < .01$). In the control condition, there was no difference between the angry ($M = 41.29$) and the sad advertisements ($M = 40.03$), $p > .75$, consistent with the hypothesized effect of emotion profile-consistency on advertising effectiveness.

		Attitude toward Advertisement	Relevance	Intentions to Change Behavior	N
Athlete	Angry	51.89	3.79	4.21	14
	<i>SD</i>	14.45	1.64	2.67	
	Sad	37.94	2.68	2.93	14
	<i>SD</i>	10.63	1.40	1.77	
Volunteer	Angry	23.71	1.86	1.86	14
	<i>SD</i>	9.96	1.17	1.51	
	Sad	40.17	3.14	3.91	11
	<i>SD</i>	12.49	1.52	2.55	
Control	Angry	41.29	3.53	3.40	15
	<i>SD</i>	15.61	1.87	1.88	
	Sad	40.03	3.07	3.33	15
	<i>SD</i>	13.94	1.66	2.35	

Table 4.4: Emotion Profiles and Persuasion

In addition to attitude toward the advertisement, participants also completed a two-item 7-point measure of ad relevance (meaningful, relevant: Williams and Drolet 2005). These two items loaded onto one factor, and were averaged to create a relevance index ($\alpha = .540$). This measure was subjected to a two-way ANOVA with emotion and identity as predictors. There were no significant main effects of either identity or

emotion, but the hypothesized interaction emerged: ($F(2, 77) = 4.063, p < .05, \eta_p^2 = .095$). Follow-up contrasts showed that for participants with an active volunteer identity, the sad advertisement was seen as significantly more relevant than the angry advertisement (3.14 vs. 1.86), ($F(1, 77) = 4.149, p < .05$). In the athlete condition, the angry advertisement was marginally more relevant than the sad advertisement (3.79 vs. 2.68), ($F(1, 77) = 3.531, p = .064$). Again, in the control condition there was no difference between the angry ($M = 3.53$) and sad advertisements ($M = 3.07$), $p > .40$.

Finally, participants were also asked to indicate the likelihood that seeing this ad would change their behavior (1= not at all likely to get tested, 7= extremely likely to get tested). This single-item measure of behavioral intentions was subjected to a two-way ANOVA with emotion and identity as predictors. There were no significant main effects of either emotion or identity. However, a significant interaction between emotion and identity emerged ($F(2, 77) = 4.021, p < .05, \eta_p^2 = .095$). As with both aAd and relevance, participants with an active volunteer identity indicated a greater likelihood to change their behavior after viewing a sad advertisement than after viewing an angry ad (3.91 vs. 1.86), ($F(1, 77) = 5.628, p < .05$), seen in Table 4.4. Those participants with an active athlete identity were marginally more likely to change their behavior after viewing an angry ad than after a sad ad (4.21 vs. 2.93), ($F(1, 77) = 2.511, p = .11$). Again, in the control condition there were no differences between angry ($M = 3.40$) and sad ($M = 3.33$) advertisements, $p > .90$.

Discussion. Study 1 finds support for the hypothesized influence of emotion profiles on persuasion. As predicted, participants with an active athlete identity showed

more favorable attitudes, higher relevance, and increased likelihood of behavior change when they were presented with the advertisement that was angry: consistent with the athlete identity's emotion profile. In contrast, participants with an active volunteer identity showed more favorable outcomes (aAd, relevance, and behavioral intentions) when presented with a sad advertisement, which is consistent with the volunteer emotion profile. Control participants were equally affected by the angry and sad advertisements. Taken together, the ads which were consistent with the active identity's emotional profile had more persuasive impact than those ads which were inconsistent with the active profile.

Interestingly, this study demonstrates an effect of identity salience on advertisements which contained no reference to the active identity. Traditional research on identity in consumer behavior demonstrates identity-consistency effects for brands, products and advertisements which overtly match the active identity (e.g., "Olympic athletes use Brand X!"). However, study 1 made no such claims, but instead leveraged the central proposition: when an identity is active so too is its emotion profile. By incorporating an emotion which is consistent with the emotion profile, identity relevance was achieved, and greater persuasion resulted.

While study 1 demonstrates the effect of emotion profiles on persuasion, it did not assess whether individuals would choose to experience identity consistent emotions. Returning to the idea that consumers can actively manage their emotional experiences, study two allows participants to select from a set of emotional experiences, which may or may not be consistent with their active emotion profile. As such, the next study provides

a first look at a form of emotion regulation motivated by emotion profiles: situation selection (Gross 1998).

Study 2: Emotion Profiles and Choice

One way that individuals can manage their emotional experiences is through what situations they select to engage in during their day-to-day lives. If given the opportunity, individuals should select interactions and experiences which are aligned with the emotion profile of their active identity—athletes selecting angry experiences, and volunteers choosing more sad experiences. The current study asks participants to listen from songs chosen from an array of eight alternatives, four of which were pretested as angry songs and four sad songs. Participants were instructed to “create a playlist” from these songs which they would listen to while waiting for another study to begin. Thus, the prediction is that participants will select stimuli which contain emotion profile-consistent emotions, and avoid those stimuli which are emotion profile-inconsistent.

In addition to choosing amongst emotional stimuli, the experiment was also designed to assess how much participants would value each type of emotional experience. To that end, participants were re-presented with the list of songs and asked to provide a ticket price they would be willing to pay to attend a 2 hour concert that that band headlined. This measure assesses the willingness-to-pay for specific emotional experiences, and provides a continuous measure (bounded at \$0) with which to validate the discrete choice task.

The study used a 3 group (identity: athlete, volunteer, control) design, with choice stimuli of two types (emotion: anger, sadness). We expect that participants primed with an athlete identity will select more angry songs, while participants primed with volunteer identity will select more sad songs. Therefore, the main dependent variable is the songs chosen and whether the distribution of songs (sad songs versus angry songs) varies between identities. The prediction is that participants with an active athlete identity will select fewer sad songs (more angry songs) than participants with an active volunteer identity. Additionally, participants with an active athlete identity should be willing to pay more money to see an angry band perform than a sad band, but just the reverse for participants with active volunteer identities.

Participants and Procedure. One hundred and three individuals participated in this study, where the average age was 20 years (age range 18-30) and 53% were female. Study participants were randomly assigned to one of the three conditions (athlete, volunteer, control) and were exposed to all eight emotional songs (4 angry, 4 sad). Participants were paid \$10 for their involvement in a one-hour lab session containing multiple studies, of which this was one.

As in study one, participants first completed a “writing task” where they wrote about a time that they performed as an athlete or volunteer (Reed 2004). Again, those participants in the control condition simply wrote about their day the day before.

After writing about the focal identity, participants proceeded to the ostensibly unrelated second task. In the “music preferences” task, participants were told that they would be selecting 4 songs to create a playlist that they would listen to while waiting to

start the next study in the session. To create the playlist, participants were presented with 8 songs: each song was labeled with a letter (i.e., Song A, Song B, etc.), and had a button where participants could listen to a 15-second sample of each particular song. Four of the eight songs were sad songs and the other 4 were angry songs. These had been pretested to reliably elicit either anger or sadness. In the pretest 47 participants rated the emotions they experiences while listening to a 15-second excerpt of the song (7-point scale, 1=not at all to 7=extremely). They rated each song across fifteen emotions: happy, depressed, angry, proud, upbeat, excited, sad, inspired, relaxed, annoyed, cheerful, upset, anxious, hopeful, and energized. The angry songs were rated as more angry ($M = 4.83$) than the sad songs ($M = 2.61$), $p < .01$, and the sad songs was seen as sadder ($M = 3.86$) than the angry songs ($M = 2.37$), $p < .01$. The two sets of songs were equally unfamiliar to participants (0-100 scale: $M_{angry} = 8.79$, $M_{sad} = 2.37$), $p > .40$, and did not substantially differ across the remaining emotions.

Thus, the songs provided to participants represent the emotional situation, from which they could select a set that either matched or mismatched their active emotion profile. Following the choice task, participants were presented with the full list of songs (and their accompanying 15-second samples) and asked to provide a willingness to pay for tickets to see each band perform. After completing the WTP task, participants were debriefed, thanked, and paid.

Results. The first variable of interest is whether the identity which was activated in the writing task impacted the number of songs chosen, of a particular type. To examine this, the number of sad songs chosen was subjected to a binomial regression, with the

maximum number of sad songs a participant could have chosen set to 4. In this regression, identity was included as a predictor, with three levels. For dummy-coding the three levels, the control condition was the left-out level, and thus significance tests of the beta-weights will be run in comparison to the control condition. The Wald Chi-Square test revealed a significant effect of identity on the number of sad songs selected, ($\chi^2(2) = 16.806, p < .001$). Importantly, the coefficient for the athlete participants was significant ($\beta = -.558, \chi^2(1) = 4.588, p < .05$) and negative, implying that for individuals with an active athlete identity, they had a significantly lower likelihood of choosing a sad song than did participants in the control condition.

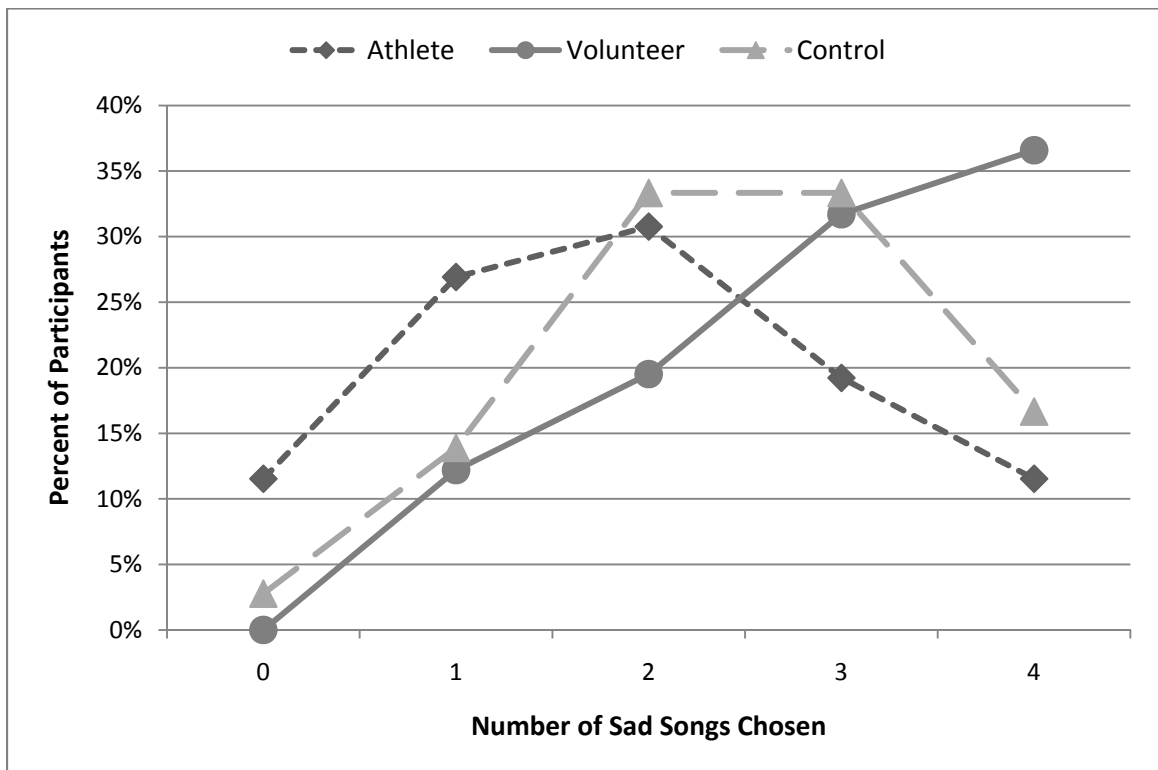


Figure 4.1: Emotion Profiles and Choice

In contrast, the coefficient for the participants with an active volunteer identity was significant ($\beta = .522$, $\chi^2(1) = 4.505$, $p < .05$) and positive, indicating that volunteers had a significantly *higher* probability of choosing a sad song than did those participants in the control condition, illustrated by the choice proportions in Figure 4.1. Since the beta for the athlete condition is significantly different from zero and negative, but the beta for the volunteers is significantly different from zero and positive, these two conditions are also significantly different from each other, suggesting that as volunteers are most likely to choose sad songs, athletes are the least likely to choose the sad songs, fully consistent with the proposed theory.

This finding was further confirmed by examining the willingness-to-pay information. Participants were asked to provide a WTP for tickets to see each band play, rating all eight songs. These ticket prices were then averaged to create an average ticket price for the sad bands and the angry bands. Finally, the premium for sad songs was calculated by subtracting the WTP-angry from WTP-sad. This sad premium was subjected to a one-way ANOVA with identity as a predictor, and a significant effect of identity was found, ($F(1, 100) = 11.127$, $p < .001$, $\eta_p^2 = .182$). Follow-up contrasts show that the sad premium was significantly different across the three identity conditions, such that participants with an active athlete identity would pay significantly less to see sad bands ($M = -\$24.54$) than either the control ($M = \$6.03$) or volunteer participants ($M = \$26.46$), all $p < .05$.

Discussion. Study two finds preliminary support for the proposed link between social identity, emotion and choice. As expected, participants with an active athlete

identity selected to listen to more angry music and avoid sad music, while participants with an active volunteer identity chose more sad music and avoided the angry songs. These findings are consistent with the proposed theory, such that individuals are attempting to select emotional experiences which maintain or enhance consistency with the active emotion profile: experiences of anger for those with athlete identities, but experiences of sadness for those with volunteer identities.

In addition to the choice data, participants also exhibited differences in the values placed upon these different emotional experiences. In particular, volunteers were willing to pay significantly more for those experiences which would deliver a sad affect-laden experience over an angry one, to the tune of more than a \$25 premium for the sad experiences. Athletes, on the other hand, were seeking out angry affective experiences, and thus showed a preference of nearly \$25 for angry music tickets over the sad bands. Not only were participants choosing to experience specific types of emotions by selecting those songs which were consistent with their active emotion profile, but they were also willing to pay significantly more for those experiences which were consistent with the active emotion profile. Clearly, the activation of identities and their associated emotion profiles has important implications for both the selection and valuation of affective experiences.

Although study two provides evidence that emotion profiles have implications for actual choice, it leaves two research questions still unanswered. First, it does not address whether individuals would attempt to use emotion regulation to change their currently experienced emotions to achieve consistency with the identity's emotion profile. What happens when an individual is actively experiencing a consistent or inconsistent emotion

and has the opportunity to regulate that ongoing emotional experience—will emotion regulation operate to achieve or maintain emotion profile-consistency? Study three employs a paradigm that allows participants to modulate their emotional responses during an affective experience. Additionally, the previous study began to connect emotion profiles to consumer decisions (choice, WTP), but did not assess actual consumption. Study three will provide participants with an emotion regulating product, and assess whether attitudes toward and amount consumed of the target product are affected by the product's ability to align participants' emotions with their active emotion profiles.

Study 3: Emotion Profiles and Emotion Regulating Products

The final study is designed to show that products which are positioned as enhancing emotion profile consistency will be preferred, and that individuals will actually consume more of those products which better align their emotional state with the active emotion profile. Study three has a 3 (identity: athlete, volunteer, control) x 2 (emotion: anger, sadness) x 3 (product positioning: enhance emotions, reduce emotions, control) between-subjects design, where the emotion is induced incidentally, and a product is positioned as either increasing or decreasing emotions within an advertisement (Williams and Drolet 2005).

The proposed theory predicts that the athletes will prefer products that reduce emotion if they are experiencing sadness, but not anger, and volunteers will prefer products that decrease anger, but not sadness. Other theories, such as mood repair (Labroo and Mukhopadhyay 2009) and emotion regulation (Gross 1998), would predict

that preferences for the emotion regulating product should not differ based on either the salient identity or the specific emotion: all participants are in negative states, thus all should want to decrease their emotions. This unique prediction highlights the core contribution of the current work, emphasizing consistency with identity-specific emotion profiles as a driver of emotion regulation.

This study also investigates whether products can be framed as emotion regulators (Williams and Drolet 2005), and that consumers will prefer those products that regulate emotions in an identity-consistent manner. Additionally, this study extends study 1 to determine whether *products* can be positioned as identity-relevant without mentioning the identity, but simply through positioning the product as aiding the consumer in achieving the emotional goals of the identity: emotion profile-consistency.

Participants and Procedure. Two hundred eighty-nine individuals participated in this study, where the average age was 24 years (age range 18-66) and 54% were female. Individuals were randomly assigned to one of the 18 conditions. Participants were paid \$10 for their involvement in a one-hour lab session containing multiple studies, of which this was one.

Participants were told that they would be participating in two unrelated studies: a writing task, and a product evaluation study. The procedure is as follows: first, participants were primed with either the athlete, volunteer, or neutral identity, as in studies 1 and 2. Next, participants were told that they would be participating in a product evaluation study, where they would be asked to do first watch a movie clip and then try a product. The cover story for this particular study was that often people eat and drink at

home, while watching television, and that this study was meant to understand how that process works. This second part of the experiment contained both the emotion manipulation and the product evaluation.

When participants sat down at their cubicle to participate in this study, a cup covered by a lid was sitting on a “placemat” in each cubicle. The printed placemat indicated that participants should leave the cup alone until otherwise instructed. Each cup was numbered, as a way to subsequently track the amount of beverage consumed by each participant. Thus, the sequence each participant experienced was: sit in cubicle, engage in the writing task (identity prime), then complete a product evaluation study—at which point they were instructed to try the beverage.

As in Studies 1 and 2, the identity induction was a writing task (Reed 2004). After this task, participants started an ostensibly new study. This study first presented participants with a 45-second movie clip, pretested to reliably elicit either anger or sadness. After viewing the movie clip, participants were told that they would be trying a new beverage, and were asked to enter the number printed on their cup into the computer so that they could receive information about the flavor of the product they would try. All participants received approximately 200 grams of Revolution Tea’s Orange Chocolate Green Tea. However, depending on condition the tea was described in one of three ways via an advertisement presented on the computer (see Table 4.5). Specifically, the tea was positioned as either enhancing emotions, reducing emotions, or having nothing to do with emotions. To reflect these three positioning statements, the name of the tea was either IntensiTea (enhance emotions), TranquiliTea (reduce emotions), or HerballiTea (no emotion consequences).

Condition	Advertisement
<p>Enhance Emotions (IntensiTea)</p>	 <p>IntensiTea</p> <p>An energizing blend of herbs and spices enhances the mind and emotions.</p> <p>Increase the connection with your feelings; hear the voice of your mind.</p> <p>Drink IntensiTea and boost insightful emotions.</p> <p>Feel. Experience the world fully.</p> <p>Increase your emotional insights: IntensiTea.</p>
<p>Reduce Emotions (TranquiliTea)</p>	 <p><i>TranquiliTea</i></p> <p>A soothing blend of herbs and spices calms the mind and emotions.</p> <p>Reduce the distractions of your turbulent feelings; still the noise of your mind.</p> <p>Drink TranquiliTea and eliminate distracting emotions.</p> <p>Focus. See the world clearly.</p> <p><i>Increase your mental control: TranquiliTea.</i></p>
<p>No Emotion Regulation (HerbaliTea)</p>	 <p>HerbaliTea</p> <p>A blend of herbs and spices enhances your health.</p> <p>Increase your water consumption and balance your body.</p> <p>Drink HerbaliTea and boost your body's functioning.</p> <p>Drink. Experience true health.</p> <p>Increase your health: HerbaliTea.</p>

Table 4.5: Emotion Profiles and Emotion Regulating Products

Once participants were presented with the product information, they were asked to taste the tea, drinking as much or little as they desired. Following the tasting of the tea, they were asked to evaluate the product on a set of measures, including attitude toward the brand, persuasiveness of the advertisement, and thoughts about the product. Finally, they were instructed to place their cup back on the placemat, to be disposed of by the lab assistants. After this, participants were debriefed, thanked, paid and dismissed.

Prior to the start of the experimental session, each teacup was weighed and its starting weight recorded (generally set to be around 200 g). At the end of each session, all of the teacups were collected and re-weighed. This final weight was subtracted from that unique cup's starting weight to obtain the amount of tea consumed by each participant.

Results. The amount of tea consumed (in grams) was subjected to a three-way ANOVA with identity, emotion, and product positioning as predictors. There were no significant main effects or two-way interactions, however a significant three-way interaction of identity, emotion, and product positioning emerged ($F(4, 271) = 2.483, p < .05, \eta_p^2 = .035$), seen in Figure 4.2. Decomposing this effect, there were three contrasts which support the proposed theory. First, those participants with an active athlete identity who were experiencing anger consumed more of the tea positioned as enhancing their emotions (IntensiTea, $M = 52.93\text{g}$) than that tea positioned as reducing their emotions (TranquiliTea, $M = 14.15\text{g}$), $p = .056$. On the other hand, participants with an active volunteer identity who were experiencing anger drank significantly more of the tea positioned as *reducing* their emotions (TranquiliTea, $M = 72.14\text{g}$) than either the enhance

emotions (IntensiTea, $M = 34.93g$), $p = .058$ or control (HerbaliTea, $M = 40.23g$) products, $p = .074$. No other contrasts were significant.

After drinking some of the tea, participants were asked to evaluate the tea on two 9-point scales anchored with 1= Disagree Completely, 9= Agree Completely: “I like this tea” and “I would purchase this tea.” These two scales loaded onto one factor, and as such were averaged to create an attitude towards the tea index ($\alpha = .911$). This attitude index was subjected to a three-way ANOVA with identity, emotion, and product positioning as predictors. No significant main effects emerged, but a significant two-way interaction between identity and product positioning did appear, ($F(4, 271) = 2.524$, $p < .05$, $\eta_p^2 = .036$). Decomposing this two-way interaction showed that participants with an active athlete identity preferred the enhance emotions (IntensiTea) product more ($M = 5.143$) than control participants ($M = 3.850$), ($F(2, 271) = 3.187$, $p < .05$), while participants with an active volunteer identity preferred the reduce emotions (TranquiliTea) product more ($M = 5.366$) than the control participants ($M = 4.193$), ($F(2, 271) = 2.220$, $p < .05$).

Importantly, this two-way interaction is qualified by a significant three-way interaction between identity, emotion, and product positioning, ($F(4, 271) = 4.286$, $p < .005$, $\eta_p^2 = .059$). Follow-up contrasts show that for the participants who had an active athlete identity, they had marginally higher attitudes toward the enhance emotions product when they were experiencing anger ($M = 5.786$) than when they were experiencing sadness ($M = 4.500$), ($F(1, 271) = 2.775$, $p = .097$). In contrast, athletes had higher attitudes toward the *reduce* emotions product when they were experiencing sadness ($M = 5.542$) than when they were experiencing anger ($M = 3.692$), ($F(1, 271) =$

5.119, $p < .05$). Volunteers, on the other hand, had the exactly opposite pattern of results, such that they had higher attitudes toward the enhance emotions product when they were experiencing sadness ($M = 5.500$) rather than anger ($M = 3.733$), ($F(1, 271) = 3.906$, $p < .05$). And volunteers had higher attitudes toward the reduce emotions product when they were experiencing anger ($M = 6.357$), not sadness ($M = 4.375$), ($F(1, 271) = 4.797$, $p < .05$). This pattern of results follows directly from the proposed theory, such that individuals have more positive reactions toward the products which align their emotional state with that of their active emotion profile.

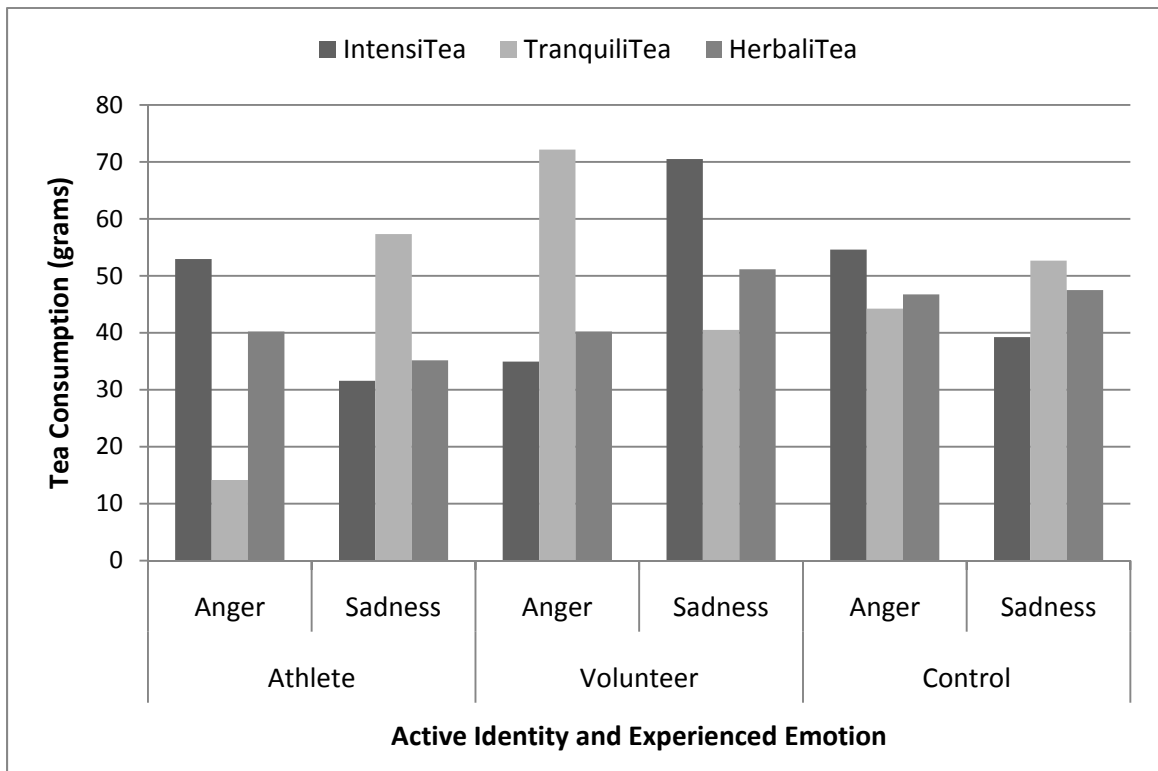


Figure 4.2: Emotion Profiles and Consumption

Participants were also asked to evaluate the product's advertisement, indicating on a 0-100 sliding scale how persuasive they thought the ad was. These evaluations were subjected to a three-way ANOVA with identity, emotion and product positioning as predictors. A main effect of product emerged, ($F(2, 271) = 3.775, p < .05, \eta_p^2 = .027$), such that the reduce emotions advertisement (TranquiliTea, $M = 36.439$) was seen as more persuasive than either the enhance (IntensiTea, $M = 25.475$) or control (HerbaliTea, $M = 28.159$) products. This main effect was qualified by a significant three-way interaction between identity, emotion, and product positioning, ($F(4, 271) = 3.968, p < .005, \eta_p^2 = .055$). This interaction is driven by participants in the athlete condition who experienced sadness seeing the reduce emotions positioning as more persuasive ($M = 57.500$) than either the enhance ($M = 24.857$) or control ($M = 27.316$) advertisements, ($F(2, 271) = 6.184, p < .005$). In the volunteer condition, participants who experienced anger saw the reduce emotions advertisement as more persuasive ($M = 42.500$) than the enhance emotions ad ($M = 14.667$), ($F(2, 271) = 4.020, p < .05$). No other contrasts were significant.

Finally, participants were asked to list thoughts that they had about the product. They were first asked to list thoughts in separate entry line, and then on the next page, were provided with their list of thoughts and asked to evaluate whether each thought was positive, negative, or neutral. Following the procedure described by Tiedens and Linton (2001), a favorability index was constructed by taking the sum of all positive thoughts, subtracting all negative thoughts, and then dividing this by the total number of thoughts. This favorability index (FI) consequently indicates the proportion of thoughts that are favorable towards the product: a positive FI shows a predominance of positive thoughts, a

negative FI a preponderance of negative thoughts. This FI was subjected to a three-way ANOVA with identity, emotion, and product positioning as predictors. No significant main effects or two-way interactions emerged, but a significant three-way interaction was revealed ($F(4, 271) = 4.644, p < .001, \eta_p^2 = .064$). Follow-up contrasts show that for those participants with an active athlete identity, they had more positive FI towards the enhance product when they were experiencing anger ($M = .233$) than sadness ($M = -.426$), ($F(1, 271) = 8.061, p < .005$). However, athletes had more positive FI towards the reduce emotions product when they were experiencing sadness ($M = .292$) than anger ($M = -.292$), ($F(1, 271) = 5.634, p < .05$). In contrast, volunteers had a more positive FI towards the reduce emotions product when they were experiencing anger ($M = .364$) than sadness ($M = -.192$), ($F(1, 271) = 4.166, p < .05$). No other contrasts were significant.

Discussion. Study three replicates the earlier studies in support of the proposed theory: individuals engage in emotion regulation to enhance emotions which are consistent with the identity's emotion profile or to decrease emotions that are inconsistent with the emotion profile. Using a different type of emotion manipulation, movie clips, this study again showed that participants with active athlete identities attempt to eliminate sadness, while those with active volunteer identities try to reduce anger. Importantly, in this study participants regulated their emotions with a product trial, explicitly connecting the theorized process to consumer decision making and actual consumption.

It is worth noting that this study positioned the product as either reducing or enhancing emotions. From the proposed theory, the prediction would be that participants with active athlete identities would prefer the product which enhanced anger, as was

observed with participants in the active volunteer condition experiencing sadness. The data did not always show this pattern of preference for emotion enhancement in the emotion profile-consistent conditions, but consistently showed preference for the reduce emotions products in the emotion profile-inconsistent conditions. One reason for this may be that the elimination of negative emotions is a particularly salient goal (Gross et al. 2006; Tamir, Mitchell, and Gross 2008). In order for participants to express preference for the emotion enhancing product, they would need to overcome this goal entirely, and pursue a solely instrumental (versus hedonic: Higgins 1997) emotion experience. As participants did not need to execute the salient identity after product evaluations (e.g., they were not expecting to perform athletically), the instrumental component of the emotion may have been less valuable. Additional studies that make the identity goals more salient (e.g., participants anticipate a task that engages the specific identity) may increase the instrumental value of emotions and manifest higher preferences for emotion enhancing products in the emotion profile-consistent conditions. Despite the somewhat inconsistent evidence of preference for emotion enhancing products, the fact that participants preferred the emotion reducing product only in the emotion profile-inconsistent conditions represents a sharp departure from existing emotion regulation research, and presents a unique contribution of the current theory.

Summary

Taken together, the results from the pretests and three studies suggest two novel findings. First, social identities are not merely collections of attitudes, beliefs, and

behaviors, but also include connections to specific emotional states. The pretest data support this contention, providing “emotion profiles” for a variety of social identities, and demonstrating a variety of advertising judgments where expressing consistent or inconsistent emotions changes evaluations. Study one went beyond the effect of emotion profiles on social judgments, but showed that advertisements with an emotion profile-consistent emotion are more persuasive. In study two, participants’ were given the opportunity to select between various emotional stimuli and create an emotional experience which supported their active emotion profile. In study three, participants were asked to both consume and express their preference for products framed as emotion regulators, avoiding inconsistent emotions. Across three different types of emotion manipulations, these studies demonstrate that individuals can use emotions instrumentally, to achieve identity consistency, and that they can strategically regulate their emotions in order to coincide with a salient emotion profile. These two pieces—that identities have emotion profiles, and that individuals regulate their emotions in order to maintain consistency with emotion profiles—tell of a new source for emotion regulation goals (social identity), and describe a process by which emotion regulation is employed to achieve identity-consistent outcomes.

4.3 General Discussion

The study of emotions has grown in prominence within the marketing literature. From how specific emotions influence the processing of messages (Raghunathan, Pham, and Corfman 2006), to the consumption decisions consumers make in order to experience

certain affective responses (Andrade and Cohen 2007; Shiv and Fedorikhin 1999), marketers are willing to explore the influence of emotions on consumers in a variety of ways. Only recently however, have marketing researchers begun to ask how consumers influence their emotions—controlling, adapting, and molding the emotional experience as it unfolds. The study of emotion regulation is growing rapidly in psychology (see e.g., Clore and Robinson 2000), but only in a few instances does it appear within the consumer domain.

The current framework focuses not on *how* individuals manage their emotions, but rather *when* a person is motivated to do so. In particular, social identity and associated emotion profiles were proposed as a mechanism that could induce people to regulate their emotions. Not only is this research stream novel in that it ties together two previously unrelated concepts, identity and emotion regulation, but it also has deep ties to consumer behavior and implications for judgments and decisions.

Social identity has a long and extensive tradition of research within the consumer behavior literature (e.g., Dolich 1969; Berger and Heath 2007), but it appears that this research perspective has overlooked the role of emotions in enacting a specific social identity. While emotions are occasionally alluded to within the identity literature (see, e.g. jealousy and grief in Belk 1988), it has remained an open question whether specific emotions are connected to specific identities. Given that emotions can be characterized as part of associative networks (Bower 1981), it is reasonable to believe that some of these “emotion nodes” will be connected to social identity-specific networks. The current research product finds evidence for such associations between specific social identities and a set of emotions desirable for that particular identity. Importantly, those findings

have consequences for a variety of outcomes: advertising judgments, persuasion, product attitudes, choice, and actual consumption. Building on findings that demonstrate individuals approach products and enact behaviors which are identity-consistent, while avoiding those which are identity-inconsistent (White and Dahl 2007), this chapter proposes that individuals will be motivated to regulate their emotions in identity-consistent ways. Specifically, people should enhance their experience of identity-consistent emotions, and reduce their experience of emotions that are inconsistent with the emotion profile of a particular identity.

This chapter not only addresses a gap in the marketing literature by enriching our understanding of the concepts contained within an identity, but also provides an essential pre-condition to emotion regulation, furthering conceptualizations of the emotion management process. Beyond establishing that emotions are included within social identity structures, the current research suggests that identity-marketing appeals can be positioned as identity consistent without ever mentioning the salient identity, but rather by simply leveraging an emotion profile-consistent frame.

Chapter 5

Conclusion and Future Research

Across the three essays diverse data is presented on emotion regulation, attention deployment, and emotion profiles. In these chapters, I investigate how, when and why emotion regulation processes influence consumer outcomes. From identifying a specific emotion regulation strategy, to introducing a new concept that motivates emotion regulation (emotion profiles), new insights into the emotion regulation process are provided. These findings suggest that emotion regulation has widespread impact on consumer outcomes, and represents a new viewpoint on how the emotion experience varies by individual.

While the data reviewed in this paper demonstrates new insights into attention deployment and the motivation of emotion regulation, there are still many research questions that remain. Indeed, the introduction of emotion profiles as a new construct in psychology and consumer behavior opens wide new areas of inquiry. In this final chapter, I discuss some remaining questions and avenues for future research.

Attention Deployment: Further Research Questions

With attention deployment validated as an emotion regulation strategy, other research could investigate if improving individuals' attentional processes enhances

emotion regulation. Moreover, the paradigm developed here to assess attention shifts could be used to see if various clinical interventions are aiding individuals in attention deployment and, ultimately, emotion regulation. For instance, an increasingly common form of therapy known as Mindfulness-Based Stress Reduction (MBSR) has been used to successfully reduce the experience of chronic pain (Kabat-Zinn, Lipworth, and Burney 1984). This therapeutic intervention involves training patients in mindfulness meditation, which emphasizes a diffuse attentional state, where bodily experiences are noticed—but not elaborated upon—and allowed to pass through the mind without judgment (Jha, Krompinger, and Baime 2007; Kabat-Zinn 1982). In practice, this therapy may be increasing participants' ability to shift attention, as well as promoting reappraisal of negative outcomes. Within the attention deployment paradigm utilized in the current conceptual framework, it may be possible to disentangle the two effects by assessing whether patients who participate in the MBSR show larger attention shift effects in the T task.

Along with the MBSR training, there are other interventions designed to increase an individual's executive control of attention. One example of a training program meant to enhance executive control of attention is Attention Process Training (APT). The APT is meant to improve attentional control by training individuals along four dimensions of attention: sustained, selective, divided, and alternating (López-Luengo and Vázquez 2003). This task has been most commonly used as a supplement to cognitive therapies for patients with schizophrenia and closed-skull traumatic brain injuries (e.g., stroke: López-Luengo and Vázquez 2003). Despite its primarily clinical use, APT has been used to successfully increase executive control of attention in non-clinical populations (Park and

Ingles 2001). Interventions using APT have measured performance improvements on cognitive tasks, but not regulation of emotional experience. However, if these control processes are drawing from a common attentional resource, as has been theorized elsewhere (e.g., Jha et al. 2007), using the APT to improve attention on cognitive tasks should also improve attention deployment as an effective emotion regulation strategy.

Emotion Profiles: Further Research Inquiries

The implications of social identity emotion profiles are varied, and suggest an assortment of different research directions, for both psychology and marketing. For one, are there specific situations where conforming to emotion profiles is particularly important? One could postulate that when an individual is in a situation where he or she is observed by others (public), emotion profile consistency would be of greater concern than when the individual is alone (private). Or, might emotion profile consistency be more important for some identities over others? Also, emotion profiles may interact with or be enhanced by social norms—within the organizational behavior literature, there have been some explorations of gender emotion rules, in that women are expected to express positive emotions but men are expected to express no emotion (Simpson and Stroh, 2004). How might these culturally constructed emotion profiles interact or conflict with identity-specific emotion profiles?

Social identities are derived from group membership; and yet the current research focuses on a single individual with the active identity. Future research could bring the group back into the picture, and assess how groups experience (and express) emotion.

Only recently have group-level emotions and their distinctions from individual-level emotions begun to receive research attention (Smith, Seger, and Mackie, 2007). Currently, this area has focused on how collective emotions differ from individual emotions, and at what level group members perceive or converge to the group's emotional state (Thomas, McGarty, and Mavor, 2009). As emotion profiles derive directly from group membership, future research could investigate how collective emotions support and reinforce emotion profiles, and perhaps the social norms that exist within the group to support the display of emotion profile-consistent emotions.

Again, the current paper establishes a connection between social identities and emotions, postulating that just as actions, brands, and beliefs are incorporated into the identity concept, so too are specific emotions and emotion profiles. This relationship between identity and emotion has previously gone unnoticed, but may represent an essential motivation to engage in emotion regulation. The present focus is on attention deployment and situation selection as emotion regulation strategies that can promote emotion profile-consistency; however there are multiple research questions that can be answered beyond this. For one, the current framework describes the negative state of emotional dissonance as motivating emotion regulation. As of yet, the existing studies are unable to address this as a mediating factor—but experiments building upon the methods presented here might uncover this psychological process. Moreover, understanding how emotions are incorporated into social identities, their influence on and mediation of prototypical identity effects, and the motivational impetus provided by identity-specific emotions, all provide richer theory within the social identity literature itself.

For instance, Experiment 3 (Chapter 3) demonstrated that performance was enhanced when an individual was experiencing identity-consistent emotions. Left unanswered are questions regarding whether identity-consistent emotions reinforce the identity, making it more salient and central. If an individual is experiencing anger, does it make him or her more likely to also feel like an athlete? Can emotions “prime the pump” of specific identities? Further, are specific identities better suited to specific emotion regulation strategies? Experiment 4 (Chapter 4) showed that individuals with active athlete identities were capable of avoiding sad emotions by using attention deployment, but perhaps other identities would be better suited to response modulation, situation modification, or others. These chapters are simply a first step in understanding how emotions are incorporated into social identities and the motivational consequences of these connections.

In addition to expanding our conceptualizations of social identity and the associations incorporated in these identity-networks, this work also promotes the perspective that emotions can be used instrumentally, in the service of other goals. Emotion profiles may represent only one way in which emotions are seen as useful. Individuals have lay beliefs about the duration of emotions that influence their reliance on emotion regulation (Labroo and Mukhopadhyay, 2009). It is likely, then, that individuals also have beliefs about when certain emotions can help achieve other goals. Indeed, some evidence exists that certain people believe anxiety improves performance on analytic tasks (Tamir, 2005), so other emotions and tasks may also be paired in people’s minds. Thus, by activating different lay beliefs individuals may be more or less motivated to engage in emotion regulation.

Conclusion

The objective of this dissertation was to gain a deeper understanding of emotion regulation and its relationship to consumer behavior. Over three essays, this work examines both *how* individuals regulate their emotions, *when* they are motivated to do so, and *why* these concepts are important for marketing and consumer behavior. From identifying a specific emotion regulation strategy, to introducing a new concept that motivates emotion regulation (emotion profiles), new perspectives into the emotion regulation process are provided. Bringing together diverse literatures from the psychology and marketing disciplines, I hope that this work provides new insight into the ways individuals not only experience emotions, but actively shape their ongoing affective lives.

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