

The Need to Feel Better

Charlene Yijun Chen

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ABSTRACT

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Charlene Y Chen

There is a popular lay-belief that consumers *always* strive to repair their negative mood. However, one can think of contrary instances where people seek out melancholic music when they feel sad, or choose to remain miserable when something frustrates them. My dissertation proposes that people vary considerably in the degree to which they need to feel better when they experience negative feelings. Specifically, my dissertation advances current understanding of why certain individuals do not engage in mood repair. It also allows us to decipher when people would form judgments and decisions in a mood-congruent versus mood-incongruent manner, thereby accounting for the lack of robustness of mood repair effects. To this end, I advance a construct called the “Need to Feel Better” (NFB), and propose four distinct facets of NFB that individuals differ on: 1) behavioral tendency to repair bad moods, 2) aversion to negative feelings, 3) pleasure derived from negative feelings, and 4) tendency to reflect on negative feelings. I also propose a scale that measures this construct and the four facets it encompasses. My dissertation shows that NFB is associated with stronger preference for common mood repair activities such as leisure shopping and exercise. It is also associated with certain demographics (e.g., age and gender), personality traits (e.g., extraversion and agreeableness), and self-regulation constructs (e.g., promotion-focus). NFB also predicts people’s tendency to engage in mood repair when they experience negative moods and their attitudes towards mood lifting appeals. From a managerial standpoint, this work provides insights for the marketing of “feel-good” products (e.g., aromatherapy and vacation packages) and the use of mood repair appeals

(e.g., Volkswagen's "Get Happy" Super Bowl commercial and the "Look Good Feel Better" campaign for women with cancer by the cosmetics industry).

TABLE OF CONTENTS

List of Tables	iv
List of Figures	v
Acknowledgment	vi
Dedication	vii
Chapter 1: Introduction.....	1
Chapter 2: Literature Review.....	4
2.1. Mood Repair Literature.....	4
2.2. Moderators of Mood Repair.....	8
2.3. Differences in Need for Mood Regulation.....	13
2.4. Development of New Construct and Scale.....	21
Chapter 3: Study 1: Developing a Scale to Measure the “Need to Feel Better”.....	23
3.1. Scale Development.....	23
3.2. Variability in the “Need to Feel Better.....	25
3.3. Scale Validation.....	28
Chapter 4: Study 2: Predictors and Correlates of the “Need to Feel Better”.....	35
4.1. Self-Regulation Constructs.....	38
4.2. Marketing Constructs.....	43
4.3. Psychological Well-Being.....	45
4.4. Personality Traits.....	47
4.5. Values and Lifestyle Variables.....	48
Chapter 5: Study 3: Does NFB Predict People’s Preference for Uplifting Music under Negative Mood?.....	50

5.1. Collection of Participants' Responses on the NFB Scale in Part 1.....	50
5.2. Negative Mood Induction and Mood Repair in Part 2.....	53
Chapter 6: Study 4: Does NFB Predict People's Preference for Happy News under Negative Mood?.....	63
6.1. Collection of Participants' Responses on the NFB Scale in Part 1.....	64
6.2. Negative Mood Induction and Mood Repair in Part 2.....	66
Chapter 7: Study 5: Does NFB Predict Attitudes toward Mood Lifting Advertisement Appeals?.....	74
7.1. Procedure.....	74
7.2. Results.....	76
7.3. Discussion.....	80
Chapter 8: Study 6: Does NFB Predict Mood Repair via Indulgence in Snacks?.....	84
8.1. Procedure.....	85
8.2. Results.....	87
8.3. Discussion.....	92
Chapter 9: Study 7: Does NFB Predict Mood Repair via Unplanned Purchasing Behavior?.....	96
9.1. Procedure.....	97
9.2. Results.....	98
9.3. Discussion.....	103
Chapter 10: Study 8: Using NFB To Revisit the Effects of Mood on Autobiographical Recall.....	106
10.1. Procedure.....	108

10.2. Results.....	109
10.3. Discussion.....	114
Chapter 11: General Discussion.....	117
11.1. Contributions of the Current Research.....	118
11.2. Limitations and Future Research Directions.....	121
References.....	124
Appendices.....	140
Appendix A: Original Scale Items in Item Generation Process.....	140
Appendix B: Summary Statistics for Confirmatory Factor Analyses.....	143
Appendix C: Political Attitudes And Personal Values Items From Study 4.....	144
Appendix D: Advertisements from Study 5 (Top Image: Mood Lifting Appeal Absent Condition; Bottom Image: Mood Lifting Appeal Present Condition).....	146

LIST OF TABLES

Table 1	
Study 1: Descriptive Statistics for the NFB Scale and its Subscales (N = 119).....	25
Table 2	
Study 1: Confirmatory Factor Analysis Item Loadings.....	29
Table 3	
Study 1: Maximum Likelihood Estimates Of Structural Equation Models Of NFB Subscales.....	31
Table 4	
Study 1: Tests of Construct Validity.....	33
Table 5	
Study 1: Test-Retest Reliability for NFB Full Scale and Subscales.....	36
Table 6	
Study 2: Correlations between NFB and Various Self-Regulation, Marketing, Psychological Well-Being, Personality Traits, Values and Lifestyle Variables	39
Table 7	
Correlations between NFB and Measures Collected in Part 1 of Study 3.....	52
Table 8	
Correlations between NFB and Measures Collected in Part 2 of Study 3.....	59
Table 9	
Correlations between NFB and Measures Collected in Part 1 of Study 4.....	65
Table 10	
Correlations between NFB and Measures Collected in Part 2 of Study 4.....	72
Table 11	
Correlations between Key Measures and Covariates in Study 7.....	100
Table 12	
Correlations between NFB and Key Measures in Study 7.....	101

LIST OF FIGURES

Figure 1	
Study 1: Distribution of “Need To Feel Better” Scores (N = 119).....	26
Figure 2	
Study 1: Distribution of Scores for each Subscale (N = 119).....	27
Figure 3	
Study 1: Structural Equations Model.....	30
Figure 4	
Study 2: Positive Association between Participants’ Age and NFB Score.....	38
Figure 5	
Study 3: The Effect of Mood Condition and NFB on Choice of “Laughs And Swings”.....	57
Figure 6	
Study 4: The Effect of Mood Condition and NFB on Number of Positive News Articles Chosen.....	71
Figure 7	
Study 5: The Effect of Type of Advertisement Appeal and NFB on Interest to Buy and Find Out More about Product	78
Figure 8	
Study 5: The Effect of Prior Mood and Type of Advertisement Appeal on Interest to Buy and Find Out More about Product (Upper Panel: Two-Way Interaction among Low-NFB Participants; Lower Panel: Two-Way Interaction among High-NFB Participants).....	82
Figure 9	
Study 6: The Effect of Mood Condition and NFB Subscales (Upper Panel: Pleasure from Negative Feelings; Lower Panel: Reflection on Negative Feelings) on Index of Amount of Snacks Eaten.....	89
Figure 10	
Study 7: The Effect of Prior Mood and NFB on Number of Spontaneous Purchases.....	103
Figure 11	
Study 8: The Effect of Mood Condition and NFB on Valence of Memories Recalled.....	111
Figure 12	
Study 8: The Effect of Mood Condition and NFB on 1) Enjoyment of Task (Top Panel) and 2) Mood after Task (Bottom Panel).....	113

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CHAPTER 1

INTRODUCTION

In modern societies, consumption in one form or another is frequently regarded as a major mood-regulatory device (Luomala and Laaksonen 1999). The term “retail therapy” was first introduced in the *Chicago Tribune* on Christmas Eve in 1986. In that article, it was reported that “We've become a nation measuring out our lives in shopping bags and nursing our psychic ills through retail therapy.” Since then, the popular lay belief about shopping as a way to chase the blues away has been commonly transmitted through films, TV programs, and social media. The Internet is replete with quotes like “Shopping is cheaper than a psychiatrist (Tammy Faye Bakker).” and “I love shopping. There is a little bit of magic found in buying something new. It is instant gratification, a quick fix (Rebecca Bloom).” In advertising and promotional campaigns, products and services are often marketed as ways to make consumers “feel better” if they are feeling “down” (e.g., flowers, spas, movies, alcohol, etc.). Take for instance *Edible Arrangements*, a business that sells fresh fruit baskets with designs inspired by floral bouquets. In one of their advertisement campaigns, they promote a new product offering called the “Cheer me up bouquet,” and tout how “You can always brighten someone’s day with our new *cheer me up* bouquet!” In a television commercial, *Nature’s Lab*, a company that sells health supplements, asks consumers if they are feeling blue and suggest that consumers might be taking the wrong vitamins. They then go on to promote the benefits of their vitamin products, and show how consuming the product restores a cartoon character’s face from blue to his original color. The advertisement then ends with the tagline: “Don’t take our word for it, *feel* it for yourself.”

It is widely assumed that all consumers have a need to repair their moods and strive to feel better when they experience unpleasant emotions. Recent research in psychology and

marketing, however, has begun to cast doubt on this universal tendency for people to engage in mood repair activities that is based on the hedonic principle. In particular, individuals sometimes choose to remain in a negative state, or even bring on unpleasant emotions rather than regulate their mood upwards (e.g., Cohen and Andrade 2004; Tamir 2009). In my dissertation, I propose that this need to mood repair is far from universal—consumers vary considerably in the degree to which they need to feel better when they are down. Initial findings from lab experiments suggest that there is substantial heterogeneity in people’s desire to engage in mood repair and that mood repair effects are more likely to occur under certain circumstances. These findings spurred me to develop a new construct called the “Need to Feel Better” (NFB) and create a scale that measures this construct. Through an extensive process of scale development, I identified four distinct aspects of NFB on which consumers vary in: 1) behavioral tendency to repair bad moods, 2) aversion to negative feelings, 3) pleasure derived from negative feelings, and 4) tendency to reflect on negative feelings.

From a conceptual standpoint, differentiating individuals on their NFB is important. It enhances our understanding of why certain individuals choose to remain in their negative mood and not do anything to improve it. It also allows us to decipher when people would form judgments and decisions in a mood-congruent versus mood-incongruent way (Andrade and Cohen 2004). In addition, distinguishing between people with high NFB and low NFB may help account for the lack of robustness in mood repair effects that has been documented in the mood literature. From a marketing standpoint, this has implications for the positioning of feeling-based appeals in product advertising and promotions. It also allows us to identify consumers who are more likely to engage in mood repair activities as well as conditions that would motivate those with low NFB to engage in these activities. From a consumer welfare standpoint, this research

has implications for consumer satisfaction with product consumption, and more broadly, consumer psychological wellbeing.

This dissertation proceeds as follows: first the extant literature on mood regulation is reviewed, with an emphasis on why the development of the NFB construct provides a unique research opportunity. From this introduction, I describe the process of developing and validating the NFB scale. After describing these results, I present several studies that I conducted to test the validity of the construct. In these studies, I tested whether NFB predicts the likelihood of individuals engaging in mood repair behaviors when they experience negative versus neutral mood. Specifically, I examined whether individuals with high NFB would be more likely to expose themselves to positive-sounding media options (e.g., happy music or news articles; Chapters 5 and 6), indulge in more snacks (Chapter 8), or recall more pleasant memories from the past (Chapter 10). In addition, I examined whether NFB predicts the effectiveness of advertising appeals that focus on happiness (Chapter 7) and people's tendency to engage in unplanned purchasing behavior (Chapter 9). Finally, the paper concludes with a summary of the obtained findings and a discussion of the contributions of the NFB scale to the literature and practical implications of the research.

CHAPTER 2

LITERATURE REVIEW

2.1. Mood Repair Literature

Moods are defined as “pervasive, global, generalized affective components or states” (Isen 1984, 85). They are typically considered as diffuse feeling states that lack source identification (Cohen, Pham, and Andrade 2006), and are often differentiated from emotions which tend to have “a distinctive cause and an object of reference” (Larsen 2000, 130). Mood repair includes any attempts that individuals make to alleviate negative moods (Morris and Reilly 1987). Such activities are often driven by a hedonic motive to feel better, although there are situations where individuals may strive to terminate negative moods to pursue other goals such as adherence to social norms (Erber, Wegner, and Therriault 1996; Hochschild 1979).

Studies have shown that people employ a wide variety of strategies to repair their negative mood (e.g., Parkinson and Totterdell 1999; Thayer, Newman and McClain 1994). To regulate bad mood, individuals may use cognitive strategies such as retrieving pleasant memories to counteract negative affect (Parrott and Sabini 1990; Rusting and DeHart 2000). In a field study by Parrott and Sabini (1990), for example, undergraduate students who did poorer than expected on a graded midterm exam were more likely to recall positive memories of their high school years compared to those who did equally well or better than expected on the exam. According to Isen (1985, 1987), people try to maintain positive mood states by thinking of pleasant events and associations, but eliminate negative mood states by distracting themselves from unpleasant events and associations. To repair negative mood, people may also adopt behavioral strategies such as helping others (Baumann, Cialdini, and Kenrick 1981; Cialdini, Darby, and Vincent 1973). Across multiple studies, subjects induced with bad mood, relative to those in the control

conditions, were more likely to help others, only in the absence of alternative hedonic benefits (Baumann et al. 1981; Cialdini et al. 1973) and when they believed that helping could improve their mood (Manucia, Baumann, and Cialdini 1984).

Individuals may additionally engage in consumption-related activities to improve their mood. Based on qualitative data, Kacen (1994) identified a broad set of strategies that people adopt to manage negative feelings. In particular, she explored individuals' phenomenological experiences of negative moods and identified consumer behaviors (i.e., acquisition, consumption and disposition of goods and services) that they employed to improve their moods. Depth interviews with 12 undergraduate informants revealed two classes of strategies that people may adopt to manage negative feelings after an initial phase of self reflection to understand these feelings: 1) escape activities (e.g., reading or working out in the gym) that allow one to turn their attention away from the source of negative affect; 2) control behaviors (e.g., driving or cleaning) that provide one with a sense of mastery over the physical environment. Additionally, people's choices of activities depend on the nature of the negative mood. Whereas arousing negative affective states like frustration may lead to physical activities (e.g., exercising) that enable one to release the excess arousal, energy-consuming states like depressive mood may lead one to engage in more sedentary activities (e.g., watching television).

Other researchers have also found that people repair their negative moods by seeking immediate gratification like eating fattening snacks (Tice, Bratslavsky, and Baumeister 2001), self-gifting (Luomala and Laaksonen 1997; Mick and Demoss 1990), and impulse buying (Rook and Gardner 1993). Tice and colleagues induced participants with either negative or positive mood. After the mood manipulation, they were told while waiting to participate in another study to take part in an unrelated pilot study that examined individual differences in taste perception.

They were instructed to taste various kinds of foods and fill out taste questionnaires. Participants were additionally instructed to eat as much food as they needed to make a proper taste evaluation. Unbeknownst to these participants, the researchers were really interested in the amount of food they had consumed during the taste test. Consistent with mood repair theory, those who were induced with negative mood ate more than those induced with positive mood. Importantly, participants seemed to be aware of their own mood repair behavior. In Tice et al.'s study, one participant said, "I felt better after eating. I didn't feel as sad. The food helped me to distance myself from the bad feeling I had from the story" (Tice and Bratslavsky 2000, 154). Similarly, in the study by Rook and Gardner, over a third of the participants sampled mentioned that they had previously made impulse purchases when they experienced negative mood, and reported doing so in the hope of alleviating the unpleasant mood state. Taken together, this body of research serves as evidence that consumers may deliberately *not* exert self-regulation in a particular domain (e.g., spending, eating) in order to reach the goal of mood regulation. They may come to a "conscious decision to permit a small lapse in self-control to achieve the greater good of balancing mood state" (Faber and Vohs 2011, 540).

Finally, there is a significant body of research showing that people use entertainment choices to manage their moods (see Zillman 1988). In one clever study by Meadowcroft and Zillmann (1987), female undergraduates were given a list of familiar prime time television programs and asked to choose an evening's worth of programs that they would like to watch that night. Additionally, they reported the onset of their last and next-to-last menstrual period. Results showed that premenstrual and menstrual women (who were arguably more depressed and hence should experience the greatest need to lift their mood) expressed more desire for comedies compared to other women in the other stages of the menstrual cycle. In these studies, negative

mood manipulations tended to increase individuals' selection of entertainment with high hedonic content (e.g., comedies and energetic-joyful music; Knobloch and Zillmann 2002).

Despite the overwhelming evidence that people engage in mood repair when they are induced with negative mood, some inconsistencies have been documented in the literature. For instance, Cunningham (1988) found that negative mood did not increase people's interest in prosocial behavior or self-gratification. In fact, negative mood reduced interest in social and leisure activities, and was associated with solitary activities like sitting and thinking. Nabi, Finnerty, Domschke, and Hull (2006) conducted a study on television programming to explore how negative affect from regretted experiences influences viewers' preference for regret-relevant shows. In their study, they showed that participants experiencing regret (e.g., they were unfaithful in their romantic relationships and felt regret about cheating their partner) were more likely than other participants to prefer watching programs that elicited similar feelings. Gibson, Aust, and Zillman (2000) investigated high school students' selection of music under conditions of unrestricted choice, and found that both male and female adolescents sought out music compatible to their own mood, whether negative or positive. Specifically, those who were feeling melancholy reported greater preference for sad music that mourns sorrowful moments. Also investigating people's tendency to manage their mood via music selection, Chen, Zhou and Bryant (2007) randomly assigned participants to a sad or neutral mood induction and asked them to select music from a sample of popular songs that they would listen to for eight minutes in a purportedly unrelated study. They found that participants in the neutral mood condition spent significantly longer time listening to joyful songs than participants in the sad mood condition. Interestingly, they also discovered an interaction effect between mood condition and time such that this difference was attenuated over the eight minutes. Negative mood participants exposed

themselves to as much joyful music as neutral mood participants by the end of the eight minutes. The authors suggested that these results demonstrated the existence of an affective inertia, in which the bad mood experienced by the participants overwhelmed and interfered with their ability to undertake behavioral attempts to repair their mood. These authors also found trait-ruminative tendency to deter mood repair attempts. In particular, compared to non-habitual ruminators, habitual ruminators devoted significantly less of their time to joyful music in the sad than in the neutral mood condition. In fact, habitual ruminators preferred sad music over alternative pieces of music across the eight-minute period. This finding provides evidence that individual differences could moderate people's engagement in mood repair when they experience negative mood. In the next section, I review literature that examines moderators of mood repair effects.

2.2. Moderators of Mood Repair

Recent work by Andrade (2005) suggests that for mood repair effects to occur individuals must first view mood as dynamic. Specifically, they must be able to perceive a discrepancy between feelings at two points in time – feelings currently experienced and feelings that could arise as a result of some behavioral activity. More importantly, individuals must intuitively believe that the activity will be effective in helping them regulate their mood toward the desired state. Andrade demonstrated that the salience of the mood-changing properties of certain behaviors influences people's tendency to mood repair using these behaviors. Among participants induced with negative mood, tendency to view eating chocolate as mood lifting was associated with greater willingness to taste a new chocolate product. In another study, participants in a negative mood who were told that they would need to answer a survey that takes 12 minutes to complete (a mood threatening property) in order to receive a free beverage sample

were less willing to try the beverage than those who were told that the survey takes 3 minutes to complete (less mood threatening).

Although not tested directly in his paper, Andrade (2005) proposed two additional conditions for mood repair to take place. First, people will pursue activities with a short term hedonistic goal (i.e., those that will evoke positive feelings or pleasure (e.g., shopping)) only in the absence of competing goals in the environment (e.g., saving), a principle he defines as conditional hedonism. Second mood repair would be more likely when affective signals are stronger and more accessible because this would make the projected discrepancy as well as the appropriateness of the current state more salient. Andrade also identified diagnosticity of the current affective state (i.e., the perceived informational value of the current state with respect to the behavior under consideration) as playing an important role in mood regulation. Nonetheless, it is less clear how diagnosticity would influence mood repair. For example, people may restrain from a particular regulating activity (e.g., spending on a new dress) when they realize the underlying reason for their negative mood, or they could be more motivated to do so as a form of self-reward.

Other researchers have also identified boundary conditions for mood repair effects. Labroo and Mukhopadhyay (2009) showed that tendency to engage in mood repair depends on one's lay beliefs about emotion transience. Individuals who believed that emotion is fleeting were less likely to repair their mood because they inferred that actions to feel better were unnecessary as negative feelings would pass on their own. In contrast, those who believed that emotion is lasting were more likely to repair their mood because they inferred that the negative feelings would persist unless they took actions to repair them. There is also research showing that individuals with low self esteem (Heimpel, Wood, Marshall and Brown 2002; Smith and

Petty 1995) and dysphoria (Joomann and Siemer 2004) are less motivated to repair their negative moods. Various researchers suggest that such individuals may be more accustomed, and hence more accepting, toward their negative moods (Heimpel et al. 2002), feel that they do not deserve to feel better (Wood, Heimpel, Manwell, and Whittington 2009), or have lower expectations that mood repair activities will effectively lift their moods (Smith and Petty 1995).

In a separate line of work, I have identified certain circumstances that may facilitate people's choices of products which would help to repair their mood. Based on the Generalized Affect-as-Information Model of judgment (GAIM; Pham 2009), I argue that the format in which mood repair alternatives are presented influences people's choices of such alternatives because various formats elicit different types of private questioning (principle of query dependence). In particular, individuals in a bad mood facing a choice between several alternatives (versus a single alternative at a time) would be more likely to ask themselves "Which option would make me feel better?" and be less likely to ask themselves "How do I feel about each option?" Compared to the latter questioning, the former questioning makes it more conducive for individuals to differentiate between various alternatives and form a decision when alternatives are presented in a comparative manner. Hence, I hypothesized that individuals doing a comparative task would be more likely to engage in mood regulation than those presented with the same options separately.

To test this hypothesis, participants were recruited via Amazon's Mechanical Turk to participate in a 2 (response mode: comparative vs. non-comparative) \times 2 (mood manipulation: negative vs. neutral) \times 2 (product category: mood relevant vs. mood non-relevant) mixed-subjects design experiment, with product category as the within-subjects factor. Participants were randomly assigned to one of the four between-subject conditions. All participants were

informed that they would be performing two independent studies that were combined for convenience. Study 1, which was in fact the mood manipulation, was framed as a study on text comprehension that was investigating how presentation of a case study influences one's understanding of it. Participants were told to read one version of the case study, describe its content in their own words, and rate their comprehension of the study. They received one of two stories describing events that happened to a young woman who was a promising artist (adapted from Erber 1991). The story designed to induce negative mood described how the artist was overcome by a rare, disabling disease (rheumatoid arthritis) at the end of her freshman year in college, while the neutral mood story described how she was deciding which college to attend.

Participants then proceeded to study 2, which was purportedly a pretest to develop suitable stimuli for another experiment. Participants assigned to the comparative conditions were presented first with a choice between a gel-ink or ballpoint pen, followed by a choice between watching an episode of *Saturday Night Live*, an live television sketch comedy and variety show, or watching an episode of *Anderson Cooper 360°*, a news program that covers current and critical news issues produced by *CNN*. For each pair of choices, they were instructed to indicate the option that they liked more. The order of option presentation within each pair of choices was counterbalanced. Participants assigned to the non-comparative conditions were presented all four of these options one at a time, with products in the pen category preceding those in the TV program category. They were told to rate how much they like each option on a scale from 1(*do not like it at all*) to 5(*like it very much*). Like in the comparative conditions, order of option presentation within each category was counterbalanced. In a separate pretest, I found the TV programs to differ on their mood lifting properties, while the pens did not.

To test our hypothesis, I used the proportion of participants who preferred one product over the other within the same category as the dependent measure (Bazerman, Loewenstein, and White 1992). Preference under the comparative conditions was determined by the participant's stated choice, whereas preference under the non-comparative conditions was computed by comparing the participant's rating for each product in the same category. Participants who assigned equal ratings to both TV programs were grouped with those who preferred the news program. Participants who gave equal ratings to both types of pens were grouped with those who preferred the ballpoint pen.¹ A chi-square analysis indicated a significant three-way interaction, $\chi^2(1, N = 676) = 5.79, p < .05$. Consistent with the hypothesis, both manipulations produced the expected interaction on TV program preference ($\chi^2(1, N = 338) = 6.29, p < .05$), but not vitamin preference ($\chi^2(1, N = 338) = .66, p = .41$). Follow-up analyses showed that among participants induced with negative mood, those performing the comparative task preferred *Saturday Night Life* (74.2%) more often than those performing the non-comparative task (48.9%; $\chi^2(1, N = 179) = 12.06, p < .005$). In contrast, among participants induced with neutral affect, those performing the comparative task were not more likely to prefer *Saturday Night Life* (57.3%) than those

¹ I also adopted an exclusion approach in which cases within the non-comparative condition that assigned equal ratings to both options in each category were excluded from the analyses. Testing the hypothesis using this approach produced similar results. After excluding these cases, a chi-square analysis revealed a directional but non-significant three-way interaction ($\chi^2(1, N = 607) = 1.40, p = .24$). Follow-up analyses nonetheless indicated a significant two-way interaction between mood and task on TV program preference ($\chi^2(1, N = 310) = 6.07, p < .05$) but not preference for pens ($\chi^2(1, N = 297) = .47, p = .49$). In particular, among participants with negative affect, those performing the comparative task were more likely to prefer *Saturday Night Life* (74.2%) than those performing the non-comparative task (59.5%; $\chi^2(1, N = 163) = 3.98, p < .05$); among participants with neutral affect, the same difference between the comparative (57.3%) and non-comparative conditions was non-significant (69.2%; $\chi^2(1, N = 147) = 2.20, p = .14$). In another approach, instead of excluding cases within the non-comparative condition that assigned equal ratings to both options in each category, I randomly assigned them as preferring either one of the options in each category. Using this randomization approach, a directional but non-significant three-way interaction emerged ($\chi^2(1, N = 676) = 1.29, p = .26$). There was a significant two-way interaction between mood and task on TV program preference ($\chi^2(1, N = 338) = 5.95, p < .05$) but not preference for pens ($\chi^2(1, N = 338) = .60, p = .44$). Among participants with negative affect, those performing the comparative task were more likely to prefer *Saturday Night Life* (74.2%) than those performing the non-comparative task (57.8%; $\chi^2(1, N = 179) = 5.34, p < .05$); among participants with neutral affect, the same difference between the comparative (57.3%) and non-comparative conditions was non-significant (66.2%; $\chi^2(1, N = 159) = 1.34, p = .25$).

performing the non-comparative task (58.4%; $\chi^2(1, N = 159) = .02, p = .89$). Therefore, these findings suggest that people in a negative mood are more likely to prefer the mood-reparatory product (e.g., *Saturday Night Live*) when preferences are elicited via comparative framing (i.e., alternatives differing on mood lifting properties are simultaneously presented as in a typical choice task) versus non-comparative framing (i.e., the same alternatives are presented in isolation as in a rating task).

2.3. Differences in Need for Mood Regulation

Overall, the findings reviewed so far suggest that certain boundary conditions must be met for mood repair to occur and that under some circumstances (i.e., comparative presentation of mood repair alternatives) one's tendency to repair their negative mood may even be enhanced. Nonetheless, inherent in a significant portion of this research (except for the research on self esteem and dysphoria) is the assumption that everyone possesses a need to repair their moods and strives to feel better when they experience unpleasant feelings. In this dissertation, I propose that individuals may differ in their need to feel better, and that distinguishing individuals on this need may account for some of the inconsistent findings in the mood repair literature.

2.3.1. Indirect Evidence that People Differ in Need to Feel Better

Supporting the view that individuals may possess varying levels of need to feel better, some research suggests that people may not always perceive negative mood as a state that needs to be fixed. There is a body of literature suggesting that contrary to the hedonistic view of mood regulation, people may choose to invoke negative mood for instrumental purposes (see Tamir 2009). In a study by Cohen and Andrade (2004), participants told that they are going to perform a study on impulse buying later on were more likely to select a sad (vs. happy) piece of music to down-regulate their mood, presumably to bolster impulse control, compared to control

participants who were not given information about the impulse buying study. They also showed that participants were more likely to regulate their moods downwards when they expected to perform an analytical task later on. Research has also suggested that people do seem to consume negative feelings and find enjoyment in doing so (e.g., reading tragic novels or watching horror shows; Andrade and Cohen, 2007).

As highlighted in the mood repair literature, there are various reasons why people may not want to repair their negative mood. For example, they may perceive such attempts as futile in lifting their mood (Smith and Petty 1995), or view themselves as less deserving of experiencing positive mood (Wood et al. 2009). We propose a novel hypothesis that some people in a negative mood may be less likely to engage in mood repair because they have a lower need to feel better. First, individuals may differ in their aversion toward negative feelings. This reasoning is built on work related to distress tolerance, a meta-emotion construct concerning people's level of acceptance of and capacity to endure negative psychological states (Simons and Gaher 2005). Research in clinical psychology shows that lower distress tolerance activates greater coping via alcohol and substance use (Simons and Gaher 2005; Zvolensky et al. 2009). Hence, we expect that the more aversive people perceive their negative mood to be, the more likely they would be motivated to alleviate those feelings by engaging in mood repair. Second, individuals may differ in the level of pleasure they derive from being in a negative mood. This deviates from the hedonistic assumption that people necessarily dislike negative mood, and thus act to mitigate it (Morris and Reilly 1987). In line with this second reasoning, recent work by Harmon-Jones, Harmon-Jones, Amodio, and Gable (2011) posits that there are individual differences in people's attitudes toward specific emotions such as sadness, anger, fear, joy and disgust. In a study on emotion regulation, they found that participants with higher dislike for fear were more likely to

regulate their fear by avoiding fear-arousing stimuli after watching a fear-inducing video clip. Further evidence comes from Heimpel et al. (2002) who found that individuals with low self-esteem have lower motivation to engage in mood repair. Among participants' self-reported reasons for not trying to improve their mood, the most frequently cited reason (21.8%) was the desire to wallow in sadness. This work suggests that at some meta-evaluative level, some people may derive pleasure from dwelling in negative mood and may gain some pleasure from doing so. Third, individuals may differ in the degree to which they focus and reflect on their negative feelings, which is likely to dampen their motive to repair their mood. A prototype of such an individual would be the classic introvert, someone who is deeply involved in his or her own mental life (Eysenck and Eysenck 2013). People who are more inclined to reflect and introspect on their negative mood would be less motivated to do something to lift their mood. It is important to note that this act of introspection is different from rumination which encompasses a compulsion to focus one's attention on the source of one's distress (Nolen-Hoeksema, Wisco, and Lyubomirsky 2008).

2.3.2. Existing Measures Related to the "Need to Feel Better" Construct

Trait Meta-Mood Scale. Currently, the measure that is closest to our conceptualization of NFB is the mood repair subscale of the TMMS by Salovey et al. (1995). The TMMS was developed as a measure of emotional intelligence comprising three subscales (i.e., attention to feelings, clarity of feelings, and mood repair) which correspond to different competencies required in adaptive social behavior. The attention to feelings subscale taps on people's tendency to monitor their moods (e.g., "I pay a lot of attention to how I feel"), whereas the clarity of feelings subscale taps on people's ability to discriminate between different feelings (e.g., "I am rarely confused about how I feel."). These two competencies allow people to draw on their

feelings to motivate and guide behavior in life (Salovey et al. 1995). More relevant to the current research is the mood repair subscale which measures people's inclination to think about pleasant things when they are in a negative mood (e.g., "When I become upset I remind myself of all the pleasures in life."). People who score high on this subscale are thought to be better at managing their moods, and thus have better psychological and interpersonal wellbeing (Salovey et al. 1995). This subscale taps on individual differences in mood repair at the behavioral level and does not address people's underlying intentions to engage in mood repair. My proposed NFB construct and scale primarily concerns people's desire to lift their moods. Nonetheless, I predict a strong positive correlation between NFB and scores on the mood repair subscale in the TMMS. People with high NFB would be more likely to think of pleasant things when they experience negative mood.

In my research, I have found individual differences in people's chronic mood repair tendency, as measured by the mood repair subscale from Salovey et al. (1995), to predict their preference for enjoyable activities (e.g., going for dinner with friends, or drinking wine) when they experience negative mood. I was particularly interested to examine whether framing enjoyable activities as productive (i.e., useful, beneficial, and practical) would increase people's preference for such activities under negative mood. To test this hypothesis, I conducted a single factor (mood: negative vs. neutral) between-subjects experiment in the lab with a sample of student participants. Participants were told that they were going to participate in a few unrelated studies. In the first study, I informed them that they were going to take part in a study on writing skills that assessed people's ability to accurately describe various life situations succinctly in a couple of sentences. In the negative mood condition, participants were told to describe five real-life situations that never fail to put them in a bad mood. In the neutral mood condition,

participants described five commonplace things that are not particularly special that they frequently observed on their route to school or work. They had to write two full sentences for each situation. To strengthen the manipulation, participants had to choose one of the listed situations and elaborate on it using five to six sentences in a subsequent question. After completing this study, participants rated their mood and performed a filler task on perceptions of different countries. Following that, they participated in a scenario-based study in which they had to make a choice between having dinner with close friends that they often hang out with for fun, or with childhood friends whom they have not seen in a long time because these friends had moved to a different state. They had to indicate which of the two sets of friends they felt like having dinner with that night on a seven-point bipolar scale where one endpoint represents preference for dinner with the close friends and the other endpoint represents preference for dinner with the childhood friends. A prior pretest with another sample had shown that having dinner with childhood friends was seen as more productive but less mood-lifting activity compared to having dinner with close friends. Finally, they filled out the mood repair subscale from Salovey et al. Results revealed a significant interaction effect between mood and chronic mood repair tendency ($\beta = .57, t(88) = 2.08, p < .05$). A spotlight analysis further demonstrated that among participants with low mood repair tendency, those in the negative mood condition were more likely to prefer going to dinner with the childhood friends than those in the neutral mood condition ($\beta = -.87, t(88) = -2.06, p < .05$). However, among participants with high mood repair tendency, the same difference was not significant ($\beta = .42, t(88) = .96, p = .34$). Participants with high mood repair were more likely to prefer going to dinner with close friends irrespective of their negative mood condition, but participants with low mood repair were more

likely to prefer going to dinner with childhood friends when they were induced with a negative mood.

In a subsequent study, I aimed to replicate this finding and examine if participants with low mood repair are choosing productive options to feel better after being induced with negative mood. I ran a single-factor (productive frame: present vs. absent) between-subjects experiment in the lab using Columbia students. Similar to the previous study, participants were told that they would be participating in a series of unrelated studies. In the first study, I induced negative mood in all participants using a writing task. Participants were told that the researchers were developing a life-event inventory, and to help them generate items for this instrument, they would be providing descriptions of personal events. They were then asked to visualize as concretely as possible and describe in detail a personal event that happened to them and made them feel really sad. After performing this task, they rated their emotions and did a filler task about their opinions about U.S. businesses investing in Vietnam. Then, they were asked to do an ad evaluation study in which the critical dependent measure was administered. They were told that the researchers were interested in how people evaluate different advertisement appeals, and were asked to view an ad about a wine bar and answer some questions. Those in the productive frame condition were shown an ad with the appeal “Come learn about great wines! Come sample a glass of wine at the Verre Wine Bar and discover our rich Bordeaux and smooth Burgundies,” whereas those in the no productive frame condition were shown the same ad with a different appeal “Come enjoy great wines! Treat yourself to a glass of wine at the Verre Wine Bar and come savor our rich Bordeaux and smooth Burgundies.” After viewing their respective ads, participants indicated the extent to which they would be interested to visit the wine bar. Following that, participants rated how useful it would be for them to visit the wine bar, the extent

to which visiting the wine bar would make them feel happier, as well as some questions on their drinking habits. Finally, participants filled out an attitudes, beliefs and experiences survey which contained the mood repair subscale from Salovey et al. (1995).

Participants in the productive frame condition reported that it would be more useful for them to visit the wine bar and they can learn more from visiting the wine bar ($M = 3.83$) compared to participants in the no productive frame condition ($M = 2.89$; $t(54) = -2.15$, $p < .05$). Hence, the manipulation was successful in generating different perceptions of productivity associated with visiting the wine bar. Participants' ratings of interest to visit the wine bar were submitted to an analysis of covariance with productive frame, mean-centered mood repair scores, their interaction term, and participants' general liking for drinking wine as predictors. Results showed a significant interaction between productive frame and mood repair, ($\beta = -.64$, $t(51) = -2.45$, $p = .02$), such that participants with low mood repair were more interested to visit the wine bar when the productive frame was present ($\beta = .70$, $t(51) = 2.32$, $p = .03$), but this difference was not significant among participants with high mood repair ($\beta = -.35$, $t(51) = -1.20$, $p = .24$). Importantly, the higher interest to visit the wine bar that was observed among participants with low mood repair appeared to be mediated by the belief that visiting the wine bar would make them feel happier, providing some evidence that individuals who score lower on the mood repair subscale generally possess some desire to feel better but are less inclined to act on this motivation than individuals who score higher on this scale. These findings also suggest that productive framing of a mood repair activity incentivizes people to engage in the activity when they are feeling down, perhaps by increasing their feelings of deservingness to feel better.

Negative Mood Regulation Scale. Another existing measure that is related to the NFB construct is the Generalized Expectancy for Negative Mood Regulation Scale (NMR; Catanzaro

and Mearns 1990). Items in this scale consists of expectancy statements about coping behaviors, and are classified into general items referring to the expectancy that negative mood can or cannot be alleviated (e.g., “When I’m upset, I believe that I can usually find a way to cheer myself up”), cognitive items about the expectancy that negative mood can be alleviated by various cognitive strategies (e.g., “When I’m upset, I believe that I’ll feel okay if I think about more pleasant times”), and behavioral items about the expectancy that negative mood can be alleviated by certain actions (e.g., “When I’m upset, I believe that I can feel better by treating myself to something I like”). If people believe that they can successfully make themselves feel better, they should be more likely to engage in attempts to alter such moods; conversely, if they have low expectancy about being able to lift their mood, they would be less likely to engage in these attempts (Catanzaro and Mearns 1990). This scale has been shown to predict people’s tendency to repair their bad moods (Tice et al. 2001), converging with past research showing that mood repair effects are diminished when subjects are given a bogus mood-freezing pill that causes them to perceive mood regulation efforts as ineffective (Bushman, Baumeister, and Philips 2001; Manucia, Baumann, and Cialdini 1984). Both the NMR and NFB are related to people’s motives to engage in mood repair when they feel upset. However, the NFB pertains to people’s evaluations about their mood state, whereas the NMR concerns evaluations about regulation strategies.

Emotion-Focused Coping. According to Lazarus and Folkman (1984), coping efforts in response to threat can be either problem-focused (i.e., attempts to manipulate the environment to reduce stress) or emotion-focused (i.e., attempts initiated to regulate one’s emotional response to stress). For example, a consumer may cope with a rude sales clerk by reporting the behavior to a store manager or simply venting his emotions to “let off steam” or “cool down.” Although

people tend to use either types of coping or both depending on situational demands, there are chronic differences in the extent to which people employ these strategies to deal with stressors (Carver, Scheier, and Weintraub 1989). Furthermore, people can engage in various types of problem-focused coping (e.g., active coping and seeking instrumental support from others) and emotion-focused coping (e.g., seeking emotional support, emotional venting, and positive reappraisal; Carver et al. 1989). At a glance, NFB appears to be similar to emotion-focused coping given that both constructs are related to people's tendency to regulate their affect in distress. Nonetheless, unlike existing scales on coping which simply measure the frequency at which people engage in different types of coping behavior to regulate their stress responses, the proposed NFB construct also taps onto the underlying motives that determine whether people engage in mood repair behaviors (e.g., aversion to negative feelings, preference to remain in a negative mood state, etc.). Moreover, some of the problem-focused coping strategies (e.g., problem-solving) could be employed with the motive of feeling better.

2.4. Development of New Construct and Scale

In my dissertation, I develop a new construct called NFB and design a scale to measure this construct. As defined earlier, NFB refers to the desire people possess to improve their mood when they experience negative mood. I propose that individuals vary in their levels of NFB, and having a scale to measure NFB would help us to differentiate individuals on their levels of NFB. In order to construct this scale, I examined current measures in the literature that are relevant to affect regulation, and adapted items from these measures to generate items for the NFB scale. In addition, items were generated based on aspects that may differentially motivate people to feel better, for example, aversion to negative feelings, pleasure derived from negative feelings, and tendency to reflect on negative feelings. In this dissertation, I test the internal consistency, factor

structure, and test retest reliability of the scale. I also test the construct validity of the scale by examining its correlations with available measures that converge or diverge from the construct and measures that tap onto major marketing (e.g., impulsive buying, materialism, etc.) and psychological constructs (e.g., regulatory focus, Big Five personality traits, etc.). Finally, I investigate the predictive validity of the scale using experiments that test whether the NFB scale is associated with greater mood repair when people are in a negative versus neutral mood.

2.4.1. Implications for Consumer Behavior

Differentiating individuals on their NFB is important from a theoretical perspective. First and foremost, it extends current understanding of why individuals are not motivated to terminate their negative mood, or why they even continue to dwell in it. Furthermore, it allows us to tease apart mood-congruency and mood-incongruency effects in the marketing literature (Andrade and Cohen 2004), thereby also accounting for inconsistent and weak effects of mood repair in research. From a practical standpoint, it enables marketers to identify consumers that are more attracted (or possibly experience more reactance) to mood repair appeals in the marketplace. Additionally, to the extent that engaging in mood repair predicts better psychological wellbeing and happiness, research-based interventions can be designed to motivate low-NFB individuals to repair their negative mood and increase their satisfaction with mood-reparatory activities. In what follows is a description of the scale development process, including evidence that the instrument is a valid measure of NFB.

CHAPTER 3

STUDY 1: DEVELOPING A SCALE TO MEASURE

THE “NEED TO FEEL BETTER”

3.1. Scale Development

3.1.1. Item Generation

An initial pool of 73 items was generated based on my review of the affect regulation literature and instruments used to measure similar constructs. Twenty-three items were adapted based on Parrott’s (1993) conceptual framework of mood regulation motives; ten items were adapted from the meta-regulation subscale of the State Meta Mood Scale (Mayer and Stevens 1994) that measures people’s meta-experiences of regulating their mood; eight items from the Distress Tolerance Scale (Simons and Gaher 2005) which measures the extent to which people can tolerate and cope with emotional distress; six items from Augustine, Hemenover, Larsen, and Shulman’s (2010) work on people’s motives for desired affective states, six items from the Negative Mood Regulation scale which measures people’s general expectancies that negative mood can or cannot be alleviated (Catanzaro and Mearns 1990); five items from the Attitudes to Emotions scale (Harmon-Jones et al. 2011) that measures people’s attitudes toward specific emotional states; three items from the Following Affective States Test (Gasper and Bramesfeld 2006) which measures the propensity for individuals to notice both their positive and negative feelings and use the information provided by their feelings; and three items from the tolerating subscale of the Affective Styles Questionnaire which measures an accepting and tolerant attitude toward certain affective styles (Hofmann and Kashdan 2010). The remaining items were generated based on the definition of the construct. Next, I carefully evaluated all 73 items to determine if they tapped only onto the need to feel better and not other constructs. Items that

seem to capture other constructs and items that were poorly worded were eliminated, resulting in a reduced set of 49 items (see Appendix A for initial pool of 73 items and reduced set of 49 items).

3.1.2. Scale Purification

The 49 items were administered to a sample of 128 participants (52% female; mean age = 35) located in America recruited via Amazon's Mechanical Turk. To ensure that these online participants were paying careful attention to the items in our survey, I included instructions asking them to indicate particular responses for certain questions. Participants who failed to read these instructions would be more likely to indicate a different response. Nine participants failed these attention checks in the survey and were thus removed from the dataset. Participants responded to 19 of the items using a 6-point frequency scale (where 1 = never true, 6 = always true), and 20 of the items using a 6-point agreement scale (where 1 = strongly disagree, 6 = strongly agree). For each scale, I examined the corrected item-to-total correlations ($\alpha = .87$ and $.90$ for frequency and agreement scales respectively) and assessed factor loadings using principal component factor analysis (4 factors emerged for the frequency scale, 6 factors emerged for the agreement scale). The items with low item-to-total correlations, items that loaded onto multiple dimensions and items that may seem confusing to participants were further eliminated, resulting in a set of 24 items. These items were administered to a new sample of 122 participants (46% female; mean age = 35) located in America recruited via Amazon's Mechanical Turk. Twenty participants failed the attention check in the survey and were thus removed from the dataset. Participants responded to all 24 items using the 6-point frequency scale. I enacted to remove the agreement scale because responses using this scale reflected participants' beliefs and opinions about mood repair as opposed to their tendency or desire to feel better. I then removed and edited

items based on their item-to-total correlations ($\alpha = .87$) and factor loadings (5 factors emerged), and administered the new set of items to another sample of participants from Mechanical Turk. This iterative process of the calculation of coefficient alpha, principal component factor analysis, elimination of items, and testing the new set of items with a fresh sample of participants was executed seven more times, with samples of respondents ranging from $N = 50$ to $N = 132$. The final version of the NFB scale includes 16 items that tap on four different dimensions: mood repair tendency, aversion to negative feelings, pleasure from negative feelings, and reflection on negative feelings. The final list of items is reported in table 2. Scores on the 16 items are averaged to compute NFB.

3.2. Variability in the “Need to Feel Better”

My dissertation proposes that people vary considerably in the degree to which they need to feel better when they experience negative feelings. As shown in figure 1, which was plotted based on the sample of Mechanical Turk respondents who received the final set of 16 items in the scale purification process (31% female; mean age = 28), there was substantial variability in NFB scores (see table 1 for descriptive statistics). According to the Shapiro-Wilk test for normality, respondents’ NFB scores were normally distributed ($SW = .99$, $df = 119$, $p = .37$).

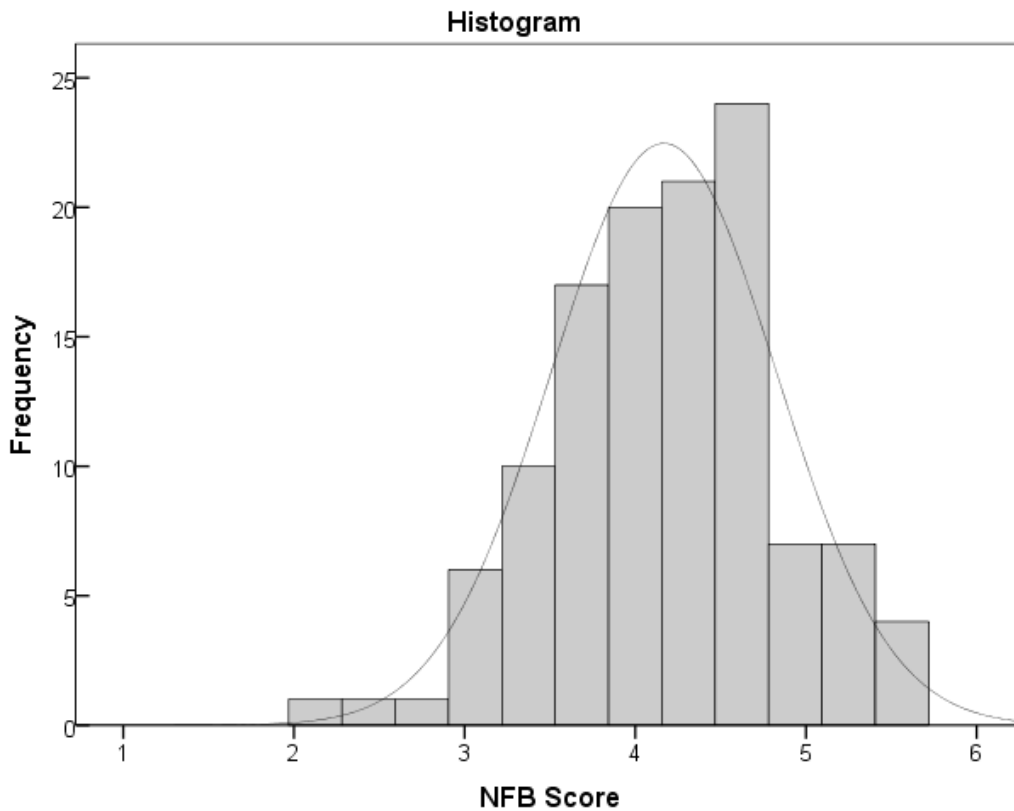
TABLE 1
STUDY 1: DESCRIPTIVE STATISTICS FOR THE NFB SCALE AND ITS SUBSCALES (N = 119)

Scale	Alpha	Mean	Median	Mode	Standard Deviation	Shapiro-Wilk Statistic	Skewness
NFB	.85	4.17	4.19	4.19	.66	.99	-.31
Mood repair tendency	.95	3.82	3.75	3.00	1.13	.98	-.03
Aversion to negative feelings	.92	4.27	4.25	5.00	1.08	.97*	-.44
Pleasure from negative feelings	.93	1.93	1.75	1.00	1.06	.82**	1.53
Reflection on negative feelings	.90	3.49	3.50	3.00	1.08	.99	-.06

* $p < .005$. ** $p < .001$.

FIGURE 1

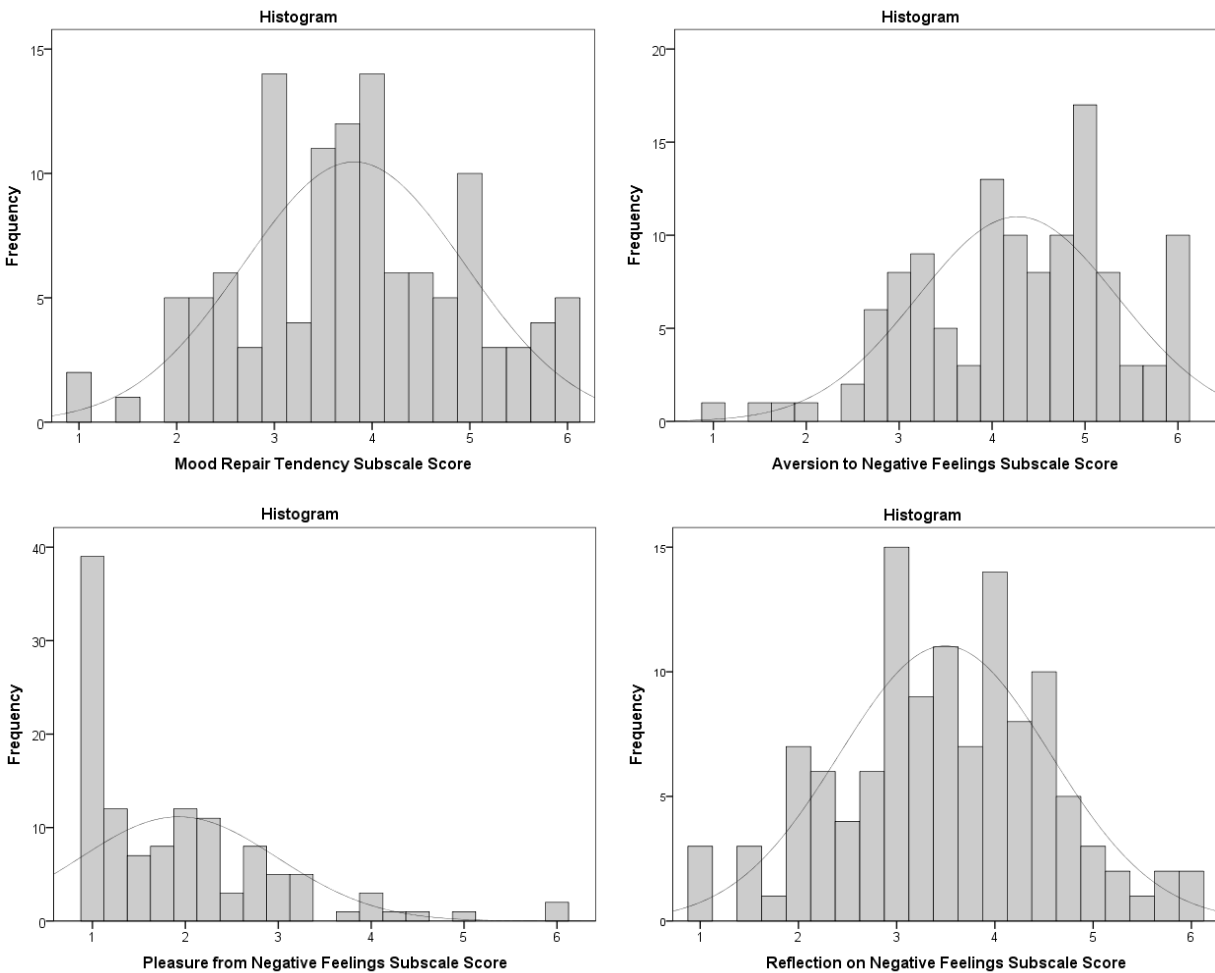
STUDY 1: DISTRIBUTION OF “NEED TO FEEL BETTER” SCORES (N = 119)



There was also substantial variability in respondents' scores on each of the four subscales (see figure 2). In particular, scores on the mood repair tendency ($SW = .98$, $df = 119$, $p = .12$) and the reflection on negative feelings subscales ($SW = .99$, $df = 119$, $p = .35$) followed a normal distribution. Respondents' scores on the aversion to negative feelings and pleasure from negative feelings subscales were not normally distributed. Scores on the aversion to negative feelings subscale were negatively skewed such that a large proportion of respondents reported being relatively more averse towards the experience of negative feelings, whereas scores on the pleasure from negative feelings subscale were positively skewed such that a large proportion of respondents reported being less likely to enjoy being in a negative mood.

FIGURE 2

STUDY 1: DISTRIBUTION OF SCORES FOR EACH SUBSCALE (N = 119)



In sum, although it is widely conceived that people have a universal motive to feel better, the current data demonstrates that there is a wide variation in people's need to feel better. Nevertheless, respondents from the current sample had relatively greater aversion toward negative feelings and reported gaining less pleasure from negative moods.

3.3. Scale Validation

3.3.1. Factor Structure

To validate the internal structure of the NFB scale, I administered the 16-item measure to a different sample of 123 participants (52% female; mean age = 32) located in America from Mechanical Turk. Three participants failed the attention check in the survey and were thus removed from the dataset. Internal consistency of the set of items was satisfactory; the coefficient alpha for the full scale was .85 (alphas for each subscale ranged from .91 to .94). A principal component factor analysis of the 16 items yielded a four-factor solution with each factor having an eigenvalue greater than one and each item having a factor loading above .85. To further assess the dimensionality of the scale, I performed a confirmatory factor analysis using SAS PROC CALIS to test a model containing a higher-order factor structure with four lower-order dimensions (see table 2). Goodness-of-fit statistics suggested that the higher-order model fit the data well ($\chi^2(100) = 114.56, p = .15$, goodness-of-fit index = .90, adjusted goodness-of-fit index = .87, root mean square error of approximation (RMSEA) = .04, Bentler's Comparative Fit Index = .99, normed fit index = .93). I performed the same procedure to test a one-factor model, in which all 16 items were made to load on a single factor, a four-factor uncorrelated model, in which all 16 items were made to load on four uncorrelated factors, and a four-factor correlated model, in which all 16 items were made to load on four correlated factors. Results showed that the higher-order model demonstrated superior fit to the one-factor and four-factor uncorrelated models and similar fit to the four-factor correlated model (see Appendix B for goodness-of-fit statistics for each model).

TABLE 2
STUDY 1: CONFIRMATORY FACTOR ANALYSIS ITEM LOADINGS

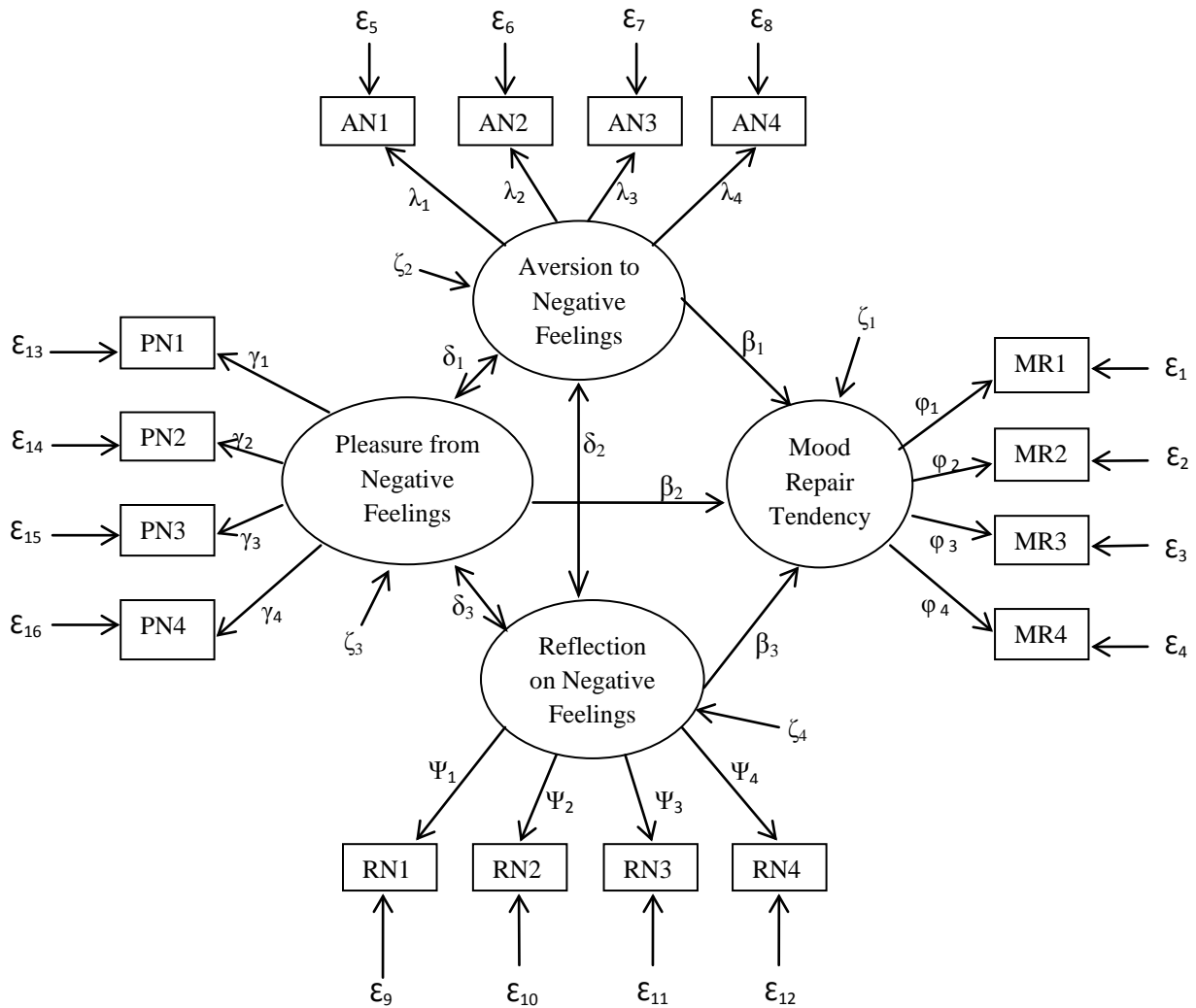
Item	Factor 1	Factor 2	Factor 3	Factor 4
Mood repair tendency ($\alpha = .92$)				
When I'm feeling down or blue, I do whatever I can to make myself feel better.	.91			
When I'm in a bad mood, I try to do things that make me feel happier.	.86			
When I'm feeling bad, I try to find ways to improve how I feel.	.85			
When I'm feeling upset, I immediately do something to feel better.	.83			
Aversion to negative feelings ($\alpha = .94$)				
Being in a negative mood really bothers me.		.91		
It bothers me when I'm upset.		.90		
When I'm in a bad mood, it disturbs me.		.88		
I can't stand being in a bad mood.		.86		
Pleasure from negative feelings ($\alpha = .92$)				
I derive some pleasure from being in a bad mood.*			.92	
I enjoy how it feels when I am feeling sad.*			.88	
I find some comfort in being upset.*			.86	
I like how it feels when I'm upset.*			.76	
Reflection on negative feelings ($\alpha = .91$)				
When I'm upset, I prefer to reflect on the underlying cause, rather than try to change how I feel.*				.92
When I'm feeling upset, I think about the reasons why I'm feeling that way instead of trying to make myself feel better.*				.91
When I am in a negative mood, I try to understand why, rather than cheer myself up.*				.81
It is more important to me to understand the cause of my negative feelings than to make myself feel better.*				.77

NOTE.—Items with asterisked are reverse-scored.

To explore how the four facets are associated with each other, I used SAS PROC CALIS to analyze the data through the structural equations model shown in figure 3. The findings suggested that the model produced a reasonable fit ($\chi^2(94) = 111.59, p = .104$, goodness-of-fit index = .90, adjusted goodness-of-fit index = .86, root mean square error of approximation (RMSEA) = .04, Bentler's Comparative Fit Index = .99, normed fit index = .93). The same procedure was used to test a rival model in which links from the baseline model that were not significant were excluded from the model. This rival model included a causal path from aversion to negative feelings to mood repair tendency, a causal path from reflection on negative feelings to mood repair tendency, as well as a reciprocal link between aversion to negative feelings and

pleasure from negative feelings. Results showed that the rival model demonstrated similar fit to the baseline model ($\chi^2(95) = 112.39, p = .108$, goodness-of-fit index = .90, adjusted goodness-of-fit index = .86, root mean square error of approximation (RMSEA) = .04, Bentler's Comparative Fit Index = .99, normed fit index = .93). Estimated values of the parameters in both models are shown in table 3.

FIGURE 3
STUDY 1: STRUCTURAL EQUATIONS MODEL



NOTE.—MR refers to the individual items in the mood repair tendency subscale, AN refers to the individual items in the aversion to negative feelings subscale, PN refers to the individual items in the pleasure from negative feelings subscale, and RN refers to the individual items in the reflection from negative feelings subscale.

Overall, these findings suggest that aversion to negative feelings bolsters mood repair tendency, whereas reflection from negative feelings tends to dampen mood repair tendency. However, pleasure from negative feelings does not directly influence people's mood repair tendency. In addition, there is a reciprocal relationship between aversion to negative feelings and pleasure from negative feelings: people with high aversion to negative feelings are likely to gain less pleasure from these feelings; at the same time, people who tend to enjoy dwelling in their negative feelings are likely to be more tolerant of such feelings.

TABLE 3
STUDY 1: MAXIMUM LIKELIHOOD ESTIMATES OF STRUCTURAL EQUATION MODELS OF
NFB SUBSCALES

Baseline Model		Rival Model	
Parameters	Estimated Values	Parameters	Estimated Values
φ_1	.850 (27.84)	φ_1	.850 (27.82)
φ_2	.909 (39.61)	φ_2	.909 (39.62)
φ_3	.857 (28.97)	φ_3	.857 (28.95)
φ_4	.832 (25.17)	φ_4	.832 (25.18)
λ_1	.902 (42.07)	λ_1	.902 (42.07)
λ_2	.885 (36.96)	λ_2	.885 (36.98)
λ_3	.914 (45.96)	λ_3	.914 (45.90)
λ_4	.865 (32.18)	λ_4	.865 (32.19)
γ_1	.855 (29.03)	γ_1	.855 (29.02)
γ_2	.924 (44.13)	γ_2	.923 (44.09)
γ_3	.884 (34.59)	γ_3	.884 (34.53)
γ_4	.755 (17.45)	γ_4	.756 (17.49)
Ψ_1	.809 (22.51)	Ψ_1	.809 (22.51)
Ψ_2	.909 (39.96)	Ψ_2	.910 (40.00)
Ψ_3	.918 (42.08)	Ψ_3	.918 (42.08)
Ψ_4	.770 (18.63)	Ψ_4	.770 (18.62)
δ_1	-.342 (-3.92)	δ_1	-.343 (-3.94)
δ_2	-.090 (-.92)	β_1	.329 (3.78)
δ_3	.048 (.10)	β_3	-.192 (-2.12)
β_1	.297 (3.14)		
β_2	-.088 (-.91)		
β_3	-.191 (-2.11)		

NOTE.—For the sake of simplicity, only the estimated values of the φ , λ , γ , Ψ , δ , and β parameters are presented. Numbers inside the parentheses are the t -values of the estimates. All the parameters are significant at $p < .05$, except for δ_2 , δ_3 , and β_2 .

3.3.2. Construct Validity

To establish the construct validity of NFB, I examined how scores on the NFB scale would correlate with other scales. To test the convergent validity of the construct, I administered the NFB scale with the mood repair subscale from the TMMS (Salovey et al. 1995), as well as a scale tapping onto people's beliefs that they can savor positive experiences (Bryant 2003). Given that the mood repair subscale assesses people's mood repair behavior, I expected people's motivation to feel better to predict higher scores on this scale. Additionally, to the extent that people believe they can sustain and enjoy the positive affective experience that they are regulating towards, they should be more motivated to feel better. Hence, I expected NFB to have a positive association with people's savoring beliefs. To test the divergent validity of the construct, I administered the NFB scale with scales that assess the degree to which people attend, perceive, and experience their feelings (attention to feelings and clarity of feelings subscales in the TMMS by Salovey et al.; affect intensity measure by Larsen 1984). I expected the NFB's correlations with these scales to be weaker compared to NFB's correlations with the mood repair subscale from the TMMS and the savoring beliefs inventory, both of which are more related to mood regulation. For instance, people's tendency to attend to their feelings is not indicative of their attitudes or preferences for either positive or negative feelings. Similarly, it is not clear whether the extent to which one can accurately perceive the nature of their feelings or one's proneness towards experiencing intense feelings would affect their motivation to change their feelings. Someone who experiences affect intensely, for example, may enjoy both negative and positive mood, or dislike affective experiences altogether. Hence, I considered individual differences in attention to feelings, clarity of feelings, and affect intensity to be discriminant constructs from NFB. To ensure that people's responses on the NFB are not driven by their

desire to impression-manage but by their desire to feel better, I administered the Crowne-Marlowe Scale which assesses social desirability bias.

I administered the NFB, TMMS (Salovey et al. 1995), Affect Intensity Measure (AIM; Larsen 1984), an adapted version of the Savoring Beliefs Inventory (SBI; Bryant 2003), and the Crowne-Marlowe Scale (Crowne and Marlowe 1960) to a sample of 207 Mechanical Turk participants (43% female; mean age = 32) located in America. After completing these measures, participants were asked to provide their demographic information. Twenty-nine participants failed the attention check in the survey and were thus removed from the dataset. The correlations between NFB and these variables are described in table 4.

TABLE 4
STUDY 1: TESTS OF CONSTRUCT VALIDITY

Scale	Alpha	Correlation with NFB	Correlation with Mood Repair Tendency	Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
Convergent validity:						
Mood repair	.85	.47****	.54****	.11	-.38****	-.19*
Savoring beliefs	.90	.29****	.34****	.04	-.37****	-.06
Discriminant validity:						
Attention to feelings	.87	.15*	.16*	.32****	-.07	.19*
Clarity of feelings	.89	.22***	.28****	-.01	-.36****	-.02
Affect intensity	.83	.13	.11	.26***	.06	.05
Social desirability:						
Crowne-Marlowe	-	.05	.03	.00	-.24***	.04

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

Convergent Validity. To assess convergent validity, I examined whether NFB is related to the mood repair subscale from the TMMS and the SBI. The 6-item mood repair subscale measures people’s attempts at repairing unpleasant moods or maintaining pleasant ones (e.g., “When I become upset, I remind myself of all the pleasures in life” and “Although I am sometimes happy, I have a mostly pessimistic outlook;” Salovey et al. 1995). The SBI assesses

individuals' perceptions of their ability to gain pleasure from anticipating positive outcomes and savor positive moments (e.g., "I find it hard to hang onto a good feeling" and "I feel fully able to appreciate good things;" Bryant 2003). As predicted, NFB was positively correlated with mood repair ($r = .47, p < .001$) and perceived ability to savor positive feelings ($r = .29, p < .001$), providing evidence for convergent validity. The moderate correlations seemed to suggest that both scales may capture aspects of mood regulation that are different from NFB. Specifically, there could be other motivations apart from the need to feel better that may account for people's mood repair behavior. Also, although the extent to which people believe they can savor positive feelings might increase motivation to feel better, as evidenced by its lack of association with the aversion to negative feelings and reflection on negative feelings subscales, there are other antecedents of people's motives to feel better (i.e., the desire to escape or mull over negative feelings).

Discriminant Validity. To assess discriminant validity, I examined whether NFB is associated with the attention to feelings and clarity of feelings subscales from the TMMS (Salovey et al. 1995), and the AIM (Larsen 1984). The 13-item attention to feelings subscale measures the extent to which individuals attend to and think about their feelings (e.g., "I pay a lot of attention to how I feel" and "I don't pay much attention to my feelings;" Salovey et al. 1995). The 11-item clarity of feeling subscale measures people's perceived ability to understand and describe what they are feeling (e.g., "I am usually very clear about my feelings" and "I am rarely confused about how I feel;" Salovey et al. 1995). The 20-item AIM reflects the strength with which people experience their emotions (e.g., "When I'm happy, I feel very energetic" and "'Calm and cool' could easily describe me;" Larsen 1984). As predicted, correlational analyses revealed that the NFB had smaller positive correlations with attention to feelings ($r = .15, p <$

.05), clarity of feelings ($r = .22, p < .005$), and affect intensity ($r = .13, p < .1$) than with mood repair and savoring beliefs. These modest correlations provide support for the discriminant validity of the NFB. In particular, the NFB scale taps on people's preference for positive mood and motivation to improve their mood when they experience bad mood, whereas these scales tap on people's chronic monitoring of their feelings, ability to tell them apart, and the intensity at which they experience these feelings, constructs that are less motivational in nature.

Social Desirability. To ensure that social desirability did not affect participants' responses on the NFB scale, participants completed the Crowne-Marlowe Scale (Crowne and Marlowe 1960). The scale assesses people's tendency to answer questions in a manner that will be viewed favorably by others, and comprises 33 True-False items (e.g., "There have been occasions when I have taken advantage of someone," and "I always try to practice what I preach"). The scale is scored based on the number of socially desirable responses that respondents provide. I did not find NFB to be significantly correlated with the scores on the Crowne-Marlowe Scale. Overall, the NFB scale does not seem to be susceptible to social desirability bias. However, I did find a negative correlation between the pleasure from negative feelings subscale and social desirability ($r = -.24, p < .005$). Participants might have been under-reporting the amount of pleasure they derive from negative experiences in order to appear favorably to others. There were no correlations between the Crowne-Marlowe Scale and the other subscales in the NFB scale.

3.3.3. Test-Retest Reliability

To determine test-retest reliability, I invited 800 Mechanical Turk participants who had previously filled out the NFB scale (these participants filled out other scales in addition to the NFB scale; see chapter 4) to take part in a follow-up study for bonus compensation. Of the 800

participants, 198 responded to the follow-up survey which took place one month after their initial participation. Twenty-nine participants failed the attention checks from the first survey they took and were thus removed from the data. A further 24 participants were removed from the data set for failing the attention checks in the follow-up survey, resulting in a final sample of 145 participants. The follow-up survey at time 2 included the NFB scale and some demographic questions. I performed correlational analyses between the two NFB measures (table 5). The NFB scale demonstrated low, but acceptable test-retest reliability ($r = .61$), providing some support for the stability of the measure. Whereas the mood repair tendency and aversion to negative feelings subscales had good test-retest reliability ($r = .72$ and $.66$ respectively), the pleasure from negative feelings and reflection on negative feelings subscales had lower test-retest reliability ($r = .47$ for both scales) than the other two subscales. The low correlation between the pleasure from negative feelings subscale at time 1 and time 2 could be associated with the subscale's susceptibility to social desirability bias. It is more uncertain why the correlation between the reflection on negative feelings subscale at time 1 and time 2 is low. Perhaps both the pleasure from negative feelings and reflection on negative feelings are prone to situational influences in the environment and are thus less stable compared to the other two subscales.

TABLE 5

STUDY 1: TEST-RETEST RELIABILITY FOR NFB FULL SCALE AND SUBSCALES

Scale	Time 2				
	NFB	Mood repair tendency	Aversion to negative feelings	Pleasure from negative feelings	Reflection on negative feelings
Time 1					
NFB full scale	.61****	.45****	.48****	-.30****	-.26***
Mood repair tendency	.44****	.72****	.26***	-.06	-.02
Aversion to negative feelings	.47****	.22**	.66****	-.16*	-.07
Pleasure from negative feelings	-.29****	.03	-.20*	.47****	.12
Reflection on negative feelings	-.33****	-.11	-.03	.21*	.47****

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$

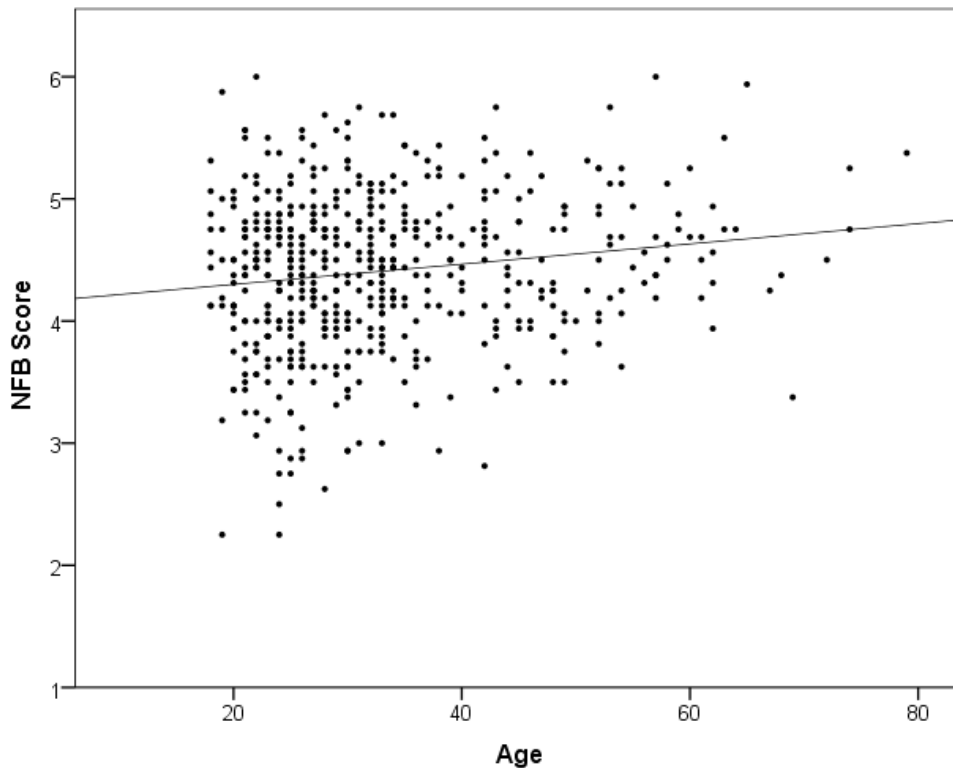
CHAPTER 4
STUDY 2: PREDICTORS AND CORRELATES OF
THE “NEED TO FEEL BETTER”

To investigate how NFB is associated with various self-regulation constructs, marketing constructs, psychological wellbeing, personality traits, and lifestyle variables, I administered the NFB along with a variety of scales from these domains to several different samples of Mechanical Turk participants ($N = 520$; 51% female; mean age = 33). The relationships between NFB and these variables are presented in table 6, along with the Cronbach alphas of each scale and sizes of the samples that I administered each scale to. Consolidating data from all these samples, I found that female participants had a higher NFB than male participants ($M_{\text{female}} = 4.52$ vs. $M_{\text{male}} = 4.29$; $t(518) = 4.17, p < .001$). Compared to male participants, female participants reported deriving lower pleasure from negative feelings ($M_{\text{female}} = 1.44$ vs. $M_{\text{male}} = 1.66$; $t(518) = -3.47, p < .005$), and higher aversion to negative feelings ($M_{\text{female}} = 4.82$ vs. $M_{\text{male}} = 4.37$; $t(518) = 4.94, p < .001$). This is consistent with the finding that females tend to experience more negative affect and emotional difficulties but equal positive affect and happiness as men (Fujita, Diener, and Sandvik 1991), suggesting that females tend to dislike negative feelings and are thus inclined to make themselves feel better. Furthermore, there was a significant positive correlation between NFB and age ($r = .09, p < .05$). Older people also reported gaining less pleasure from negative feelings ($r = -.16, p < .001$) and being less likely to reflect on negative feelings ($r = -.09, p < .05$). This is consistent with Carstensen’s theory of socioemotional selectivity which states that as people age they prioritize emotional goals over other goals (Carstensen, Isaacowitz, and Charles 1999). Older people are more likely than younger people to value emotional

satisfaction and tend to display a positivity effect (i.e., relative preference for positive over negative information in attention and memory; Kennedy, Mather, and Carstensen 2004).

FIGURE 4

STUDY 2: POSITIVE ASSOCIATION BETWEEN PARTICIPANTS' AGE AND NFB SCORES



4.1. Self-Regulation Constructs

Given that mood repair pertains to self-regulation, I was interested to examine how NFB would relate to other self-regulation constructs including regulatory focus, approach and avoidance motivations, and self-control (see table 6).

4.1.1. Regulatory Focus

According to regulatory focus theory, there are two independent self-regulatory orientations known as promotion and prevention (Higgins 1997). When one adopts a promotion

TABLE 6

STUDY 2: CORRELATIONS BETWEEN NFB AND VARIOUS SELF-REGULATION, MARKETING,
PSYCHOLOGICAL WELL-BEING, PERSONALITY TRAITS, VALUES AND LIFESTYLE VARIABLES

Scale	<i>N</i>	Alpha	Correlation with NFB	Correlation with Mood Repair Tendency	Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
Self-regulation constructs:							
Promotion focus	181	.76	.25***	.36****	.09	-.15	-.03
Prevention focus	181	.89	-.08	-.03	-.11	.01	.04
BAS drive	178	.87	-.20**	-.27**	-.14	.03	.02
BAS reward responsiveness	178	.78	-.14	-.14	-.13	.03	.03
BAS fun seeking	178	.82	-.11	-.19*	-.11	.03	-.06
Behavioral inhibition	178	.87	.07	.21**	-.24	-.19*	-.09
Self-control	181	.89	.04	.18*	-.15*	-.12	.02
Marketing constructs:							
Consumer emotional intelligence	181	-	-.07	-.05	-.05	-.01	.07
Material values	181	.91	.00	-.02	.01	-.01	-.01
Compulsive buying	181	.83	.05	-.02	.06	.07	-.11
Consumer impulsiveness	182	.91	-.06	-.06	-.09	.00	-.01
Psychological well-being:							
Current life satisfaction	167	-	.21****	.23***	.08	-.18*	.06
Future life satisfaction	167	-	.15	.24***	.09	-.11	.05
Satisfaction with Life Scale	167	.93	.19*	.27****	-.02	-.16*	-.08
Self esteem scale	167	.93	.28****	.33****	.03	-.24***	-.13
Subjective happiness	167	.92	.26***	.37****	.03	-.19*	-.08
Depression symptoms	167	.97	-.15	-.11	.09	.20*	.18*
Anxiety symptoms	167	.94	-.11	.13	.09	.31****	.24***
Stress symptoms	167	.95	-.14	-.06	.07	.26***	.14

TABLE 6 (CONTINUED)

STUDY 2: CORRELATIONS BETWEEN NFB AND VARIOUS SELF-REGULATION, MARKETING, PSYCHOLOGICAL WELL-BEING, PERSONALITY TRAITS, VALUES AND LIFESTYLE VARIABLES

Scale	<i>N</i>	Alpha	Correlation with NFB	Correlation with Mood Repair Tendency	Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
Personality traits:							
Big Five extraversion	167	.89	.21**	.28****	.12	-.06	-.05
Big Five agreeableness	167	.83	.31****	.25***	.26***	-.36****	.04
Big Five conscientiousness	167	.86	.22**	.08	.09	-.29****	-.12
Big Five neuroticism	167	.89	-.17*	-.24***	.10	.21**	.11
Big Five openness	167	.84	.04	.07	.09	-.11	.16*
Values:							
Importance of religion in life	172	-	.19*	.15	.20*	-.11	-.05
Lifestyle variables:							
Liking for shopping	172	-	.26***	.28****	.16*	.00	-.16*
Frequency of leisure shopping	172	-	.24***	.30****	.13	.04	-.15
Feeling-based self-gifting factor	172	.92	.12	.31****	.13	.15	.06
Occasion-based self-gifting factor	172	.87	.10	.22**	.03	.15*	-.07
Average donation per year	172	-	.11	.12	.06	-.01	-.07
Junk food consumption per week	172	-	-.05	.02	-.06	.08	.03
Consciousness about calories	172	-	.01	.13	.11	.14	.13
Frequency of alcohol per week	172	-	-.09	.06	-.08	.25*	.05
Average sleep per night	172	-	.00	.02	.05	.05	.04
Exercise frequency per week	172	-	.19*	.19*	.06	-.05	-.16*
Average duration watching TV per day	172	-	.13	.15*	.15*	-.07	.03

NOTE.— *N*s reflect final sample after removing 95 participants (29-36 people per sample) who failed attention checks. BAS = Behavioral Activation System. * $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

focus, he or she is concerned with attaining gains and avoiding non-gains; goals are viewed as ideals and pertain to hopes, accomplishments and advancement (Crowe and Higgins 1997).

When one adopts a prevention focus, he or she is concerned with avoiding losses and maintaining non-losses; goals are viewed as oughts and pertain to safety, security and responsibility (Crowe and Higgins 1997). To measure participants' chronic regulatory focus, I administered the 11-item Regulatory Focus Questionnaire (RFQ; Higgins et al. 2001) that consists of 6 items that tap onto promotion focus (e.g., "I feel like I have made progress toward being successful in my life," and 5 items that tap onto prevention focus (e.g., "How often did you obey rules and regulations that were established by your parents?") Results showed a significant positive correlation between NFB and promotion-focus ($r = .25, p < .005$), a strategic concern with the presence or absence of positive outcomes. This relationship was mainly driven by the correlation between the mood repair tendency subscale and promotion-focus, consistent with past research showing that promotion-focus is associated with greater mood repair (Arnold and Reynolds 2009). Individuals with high promotion-focus may be more sensitive to the gains in happiness resulting from mood regulation efforts and therefore experience greater engagement in such goals.

4.1.2. Behavioral Approach and Inhibition Systems

The behavioral approach system governs appetitive motives where the goal is to attain a desired outcome, whereas the behavioral inhibition system governs aversive motives where the goal is to avoid undesired outcomes (Carver and White 1994). To assess participants' chronic activation of their behavioral approach and inhibition systems (i.e., approach and avoidance motivation respectively), I administered the 20-item Behavioral Inhibition and Activation Scales (BIS/BAS; Carver and White 1994) which consists of four subscales: 1) BAS Drive subscale that

measures people's levels of drive in goal pursuit (e.g., "I go out of my way to get things I want"), 2) BAS Reward Responsiveness subscale which measures people's sensitivities to signals of reward (e.g., "When I'm doing well at something I love to keep at it"), 3) BAS Fun Seeking subscale which measures people's sensitivities to fun in goal-seeking (e.g., "I'm always willing to try something new if I think it will be fun"), and 4) BIS which measures people's sensitivity toward punishment (e.g., "I worry about making mistakes"). Results showed a significant negative association between NFB and the drive subscale which captures one's persistence in pursuing desired goals ($r = -.20, p < .01$). This association was mainly driven by the correlation between drive and mood repair tendency. The negative association between NFB and drive suggests that people with greater goal persistence may prioritize other goals over mood repair when they feel upset.

4.1.3. Self-Control

Individuals often experience impulses to behave in ways that deviate from their personal goals or social norms. For example, people with weight loss goals may be tempted to consume high-caloric, unhealthy foods. The capacity to inhibit these impulses is called self-control (Baumeister, Heatherton and Tice 1994). To test whether NFB is related to individual differences in self-control, I administered the 10-item brief self-control scale by Tangey, Baumeister, and Boone (2004). It contains items such as "I get distracted easily" and "I say inappropriate things." Results showed that there was no significant correlation between NFB and self-control. However, self-control was positively correlated to the mood repair tendency subscale and negatively correlated to aversion to negative feelings subscale. These relationships might have emerged because engaging in mood repair behaviors constitutes exertion of self-control over

one's negative feelings. Low tolerance for negative feelings might be perceived as failure to control one's negative emotions.

4.2. Marketing Constructs

I wanted to explore how NFB would relate to major marketing constructs in the literature such as consumer emotional intelligence (Kidwell, Hardesty, and Childers 2008), materialism (Richins and Dawson 1992), compulsive buying (O'Guinn and Faber 1989), and consumer impulsiveness (Puri 1996). These constructs were chosen because of their relevance to affective experiences.

4.2.1. Consumer Emotional Intelligence

Consumer emotional intelligence pertains to consumers' "ability to skillfully use emotional information to achieve a desired consumer outcome" (Kidwell et al. 2008, 154), and is a construct developed based on Mayer et al.'s (2003) framework of emotional intelligence. The Consumer Emotional Intelligence Scale assesses consumers' ability to perceive, facilitate, understand, and manage emotions in the consumer domain. Correlational analyses did not reveal any significant correlations between emotional intelligence and NFB. Although emotional intelligence concerns people's ability to manage their emotions, it does not capture people's inherent preferences to engage in mood repair.

4.2.2. Materialism

Materialism is the importance people place on ownership and acquisition of material goods as a means to achieve desired states or life goals (Richins 2004). People high on materialism are more likely to judge the success of others and oneself based on material possessions, believe the centrality of possessions in one's life, and believe that possessions lead

to life satisfaction and happiness. To measure people's levels of materialism, I administered the 9-item Material Values Scale (MVS; Richins 2004) which comprises of items such as "I like to own things that impress people," "Buying things gives me a lot of pleasure," and "I'd be happier if I could afford to buy more things." Correlational analyses showed that NFB was not significantly correlated to material values.

4.2.3. Compulsive Buying and Impulsiveness

Compulsive buying refers to "chronic, repetitive purchasing that occurs as a response to negative events or feelings" (O'Guinn and Faber 1989, 149). As implied in the definition, compulsive buyers are likely to use buying as a means to regulate their feelings. To measure compulsive buying tendencies, I administered the 6-item compulsive buying scale (Ridgway, Kukar-Kinney, and Monroe 2008) which comprises two subscales: the obsessive-compulsive buying scale (e.g., "I consider myself an impulse purchaser") and the impulsive buying scale (e.g., "I buy things I did not plan to buy"). Consumer impulsiveness concerns people's propensity to favor options that offer immediate hedonic benefits over options that offer larger later rewards. Impulsiveness has been found to be pervasive in consumption behavior (c.f. Rook 1987). To examine the relationship between NFB and impulsiveness, I administered the Consumer Impulsiveness Scale by Puri (1996) which contains 12 adjectives (e.g., impulsive, extravagant, etc.) that participants rate themselves on.

Correlation analyses did not reveal any significant correlations between NFB and these scales. Consequently, people with high NFB need not use the accrual of material goods and compulsive buying as means to repair their mood; given their chronic need to improve their mood, they may use various strategies to mood repair. Similarly, impulsiveness is related to

specific preference for immediate hedonic rewards but is not restricted to situations where one experiences bad mood.

4.3. Psychological Well-Being

Given the aim of mood repair that is to decrease negative affect and increase positive affect, I investigated how NFB would be associated with psychological well-being. Two predictions could be made: 1) people with higher NFB generally experience lower psychological well-being and are thus more motivated to feel better; and 2) to the extent that people have higher NFB and act on it, they experience greater positive affect and subjective well-being.

4.3.1. Life Satisfaction and Subjective Happiness

To measure life satisfaction, I administered two questions that utilize the Cantril Self-Anchoring Scale (Cantril 1965). Participants were asked to imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for the participants and the bottom of the ladder represents the worst possible life for the participants. They were instructed to indicate which step they were standing on at this time (i.e., current life satisfaction) and in five years from this time (i.e., future life satisfaction). The 5-item Satisfaction with Life Scale (SWLS; e.g., “The conditions of my life are excellent;” Diener, Emmons, Larsen, and Griffin 1985) and the 4-item Subjective Happiness Scale (e.g., “In general, I consider myself a very happy person;” Lyubomirsky and Lepper 1999) were also administered along with the Cantril scales. Results showed that people with higher NFB reported greater current life satisfaction as measured by the Cantril Self-Anchoring Scale ($r = .21, p < .001$) and the SWLS ($r = .19, p < .05$). Furthermore, people with high NFB reported greater subjective happiness in their lives ($r = .26, p < .005$). These relationships were primarily driven by the

positive association between these constructs and the mood repair tendency subscale, and to a lesser degree, their negative association with the pleasure from negative feelings subscale.

4.3.2. Self Esteem

The 10-item Rosenberg's Self-Esteem scale (e.g., "I feel that I am a person of worth, at least on an equal plane with others;" Rosenberg 1965) was used to measure self esteem.

Consistent with Heimpel and colleagues' work (2002) that people with lower self esteem are less likely to engage in mood repair behaviors, a positive association between NFB and self esteem emerged ($r = .28, p < .001$). In particular, participants with lower self esteem had lower mood repair tendencies and were more likely to derive pleasure from these moods.

4.3.3. Negative Emotional Symptoms

To test whether NFB predicts people's experience of negative affect, I administered the 42-item Depression Anxiety Stress Scales (DASS; Lovibond and Lovibond 1995) which consists of three scales: 1) the depression scale which assesses symptoms of depression such as dysphoria, hopelessness, and anhedonia, 2) the anxiety scale which assesses anxiety symptoms such as autonomic arousal and subjective experience of anxious affect, and 3) the stress scale which assesses symptoms pertaining to stress such as irritability, being easily agitated, and difficulty relaxing. Correlational analyses revealed non-significant negative relationships between NFB and each of the three scales. Nonetheless, the pleasure from negative feelings subscale was positively correlated with depression, anxiety and stress symptoms. The reflection on negative feelings subscales was positively correlated with depression and anxiety symptoms. These findings are unsurprising given that people who tend to focus on and derive pleasure from negative feelings would be more likely to experience and dwell in negative emotions.

To the extent that people engage in efforts to mood repair, they derive more pleasant experiences in life. Hence, support was found for the latter prediction that higher NFB would be associated with better psychological well-being.

4.4. Personality Traits

In order to examine whether NFB could explain certain personality styles, I administered the Big Five Personality Inventory along with the NFB scale (John, Donahue, and Kentle 1991; John, Naumann, and Soto 2008). The Big Five consists of five constituent traits: 1) Openness to experience which reflects the degree of curiosity and appreciation for novelty and variety of experience that one possess; 2) Conscientiousness which reflects the tendency to be self-disciplined and organized; 3) Extraversion which reflects the extent to which one is sociable and outgoing; 4) Agreeableness which reflects the tendency to be cooperative, warm and considerate; and 5) Neuroticism which reflects the degree to which one has low emotional stability and is vulnerable to negative emotions such as anxiety and depression.

Significant relationships between NFB and four of the Big Five personality traits emerged. Specifically, people who were more extraverted had higher NFB ($r = .21, p < .01$) and mood repair tendency ($r = .28, p < .001$). These individuals may be more likely to engage in social interactions as a strategy to lift their mood when they feel down. Interestingly, NFB was also positively associated with agreeableness ($r = .31, p < .001$) and conscientiousness ($r = .22, p < .01$). Correlations between agreeableness and the pleasure from negative feelings, aversion toward negative feelings, and mood repair tendency subscales seem to suggest that agreeable individuals tend to be cooperative and maintain positive social relations to avoid negative feelings. The negative correlation between conscientiousness and pleasure from negative feelings suggests that people who are conscientious find negative feelings to less enjoyable.

Unsurprisingly, there was a negative association between NFB and neuroticism ($r = -.17, p < .05$). Given that neurotic individuals tend to interpret ordinary circumstances as threatening (Eysenck and Eysenck 2013), they seem to induce rather than dampen negative feelings in themselves. It is interesting that people who are more neurotic derive more pleasure from negative feelings, suggesting that their heightened experience of negative emotions may be reinforced by the pleasure they get from these feelings.

4.5. Values and Lifestyle Variables

Finally, I examined how NFB may be correlated with different lifestyle variables. I asked participants how much they liked shopping and how frequently they shopped for leisure, and found these two items to be positively correlated with NFB ($r = .26, p < .005$ and $r = .24, p < .005$ respectively). Given the ready access to shopping opportunities and the pervasive notion of retail therapy in modern society, people with high NFB may be more likely to employ shopping as a mood repair strategy. I also designed questions aimed at measuring the degree to which people buy themselves gifts. Seven of these items were grouped to form a feelings-based self-gifting factor (e.g., “I give myself a gift to cope with stress,” “I give myself a gift as a reward for working hard on something”), while three of them were grouped to form an occasion-based self-gifting factor (e.g. “I give myself a gift on my birthday”). Although these two factors were not significantly correlated with the full NFB scale, they were positively associated with the mood repair tendency subscale ($r = .31, p < .001$ and $r = .22, p < .01$ for feelings- and occasion-based self gifting respectively), supporting the nomological validity of the subscale.

Participants were also asked to report the frequency at which they exercise and consume junk food and alcohol, as well as their consciousness about consuming high-caloric foods. People with higher NFB reported exercising more frequently each week ($r = .19, p < .05$),

suggesting that these individuals may be more likely to use exercise as a mood repair strategy. NFB was not significantly correlated with frequency of consuming junk food and alcohol, and consciousness about calories. Participants also reported the amount of time they spent sleeping per night and watching television per day. NFB was not significantly correlated with average sleep duration and average duration of watching television. However, greater mood repair tendency and aversion to negative feelings predicted longer durations of watching television, suggesting that people with higher tendency to engage in mood repair and lower tolerance for negative feelings may distract themselves and lift their mood by watching television programs.

In addition, I asked participants to indicate how important religion is in their own life and how much money on average they donate to charity or the needy each year. I found that people with higher NFB perceived religion as more important in their life ($r = .19, p < .05$), and this relationship was driven mainly by their aversion toward negative feelings. NFB did not predict the amount of donation participants contributed each year.

The current study demonstrates that NFB is associated with important constructs in the areas of self-regulation and personality. It is also predictive of several lifestyle variables as well as psychological well-being. Importantly, females and older individuals tended to have higher levels of NFB. The significant correlations that emerged suggest opportunities for interventions that influence consumers' behavior and psychological outcomes (e.g., mood lifting appeals that target shoppers in malls, manipulating people's NFB to encourage exercise behavior, etc.). Nevertheless, the current results are correlational and do not imply causation. Future research should investigate the underlying mechanisms of these relationships, and design interventions that manipulate NFB and test the impact of these interventions on consumer behavior.

CHAPTER 5

STUDY 3: DOES NFB PREDICT PEOPLE'S PREFERENCE FOR UPLIFTING MUSIC UNDER NEGATIVE MOOD?

To test my theoretical framework that NFB predicts people's tendency to engage in mood repair when they experience bad mood, I ran a single-factor between subjects two-part lab experiment in which participants were asked to provide their responses to the NFB scale during the first part, and were induced with negative (versus neutral) mood and asked to make choices between items that aid or do not aid in mood repair during the second part that took place two weeks later. I hypothesized that among high-NFB participants, those induced with negative mood would be more likely to select mood lifting options compared to those induced with neutral mood, whereas this difference would not be significant among low-NFB participants. There were also four additional goals pertaining to this study. First, I wanted to examine again the test-retest reliability of the NFB scale using the two-part design of the study. Second, I wanted to investigate whether NFB was associated with different cultures and experienced parenting styles. Third, I was interested to examine whether people who score higher on the NFB scale simply have higher private self-consciousness, and are thus more able to introspect on their affective experiences. Fourth, I wanted to examine whether day-to-day affect as opposed to general psychological wellbeing would also be associated with people's NFB.

5.1. Collection of Participants' Responses on the NFB Scale in Part 1

Two hundred and eighteen participants (140 female; mean age = 23) were recruited from Columbia Business School's behavioral lab panel to participate in this study. Participants were paid \$2 for their participation in part 1, and were told that they will be paid \$6 for their participation in part 2. Ten participants failed the attention checks (similar to those in the surveys

administered on Mechanical Turk) and were thus removed from the sample. All participants were asked to fill out the NFB scale ($\alpha = .84$) and other measures including the 6-item mood repair subscale of the TMMS (Salovey et al. 1995), private self-consciousness scale (Scheier and Carver 1985), self-construal scale (Singelis 1994), as well as the Positive Affect Negative Affect Scale (PANAS; Watson, Clark, and Tellegen 1988). After filling out the NFB scale, participants filled out the other measures in the listed order and answered some demographic questions.

5.1.1. Measures

Participants first responded to the 6-item mood repair subscale from the TMMS (Salovey et al. 1995). Then, they answered the 9-item private self-consciousness scale, which measures the extent to which people think about and attend to their personal thoughts and feelings that are not easily accessible to scrutiny by others (Scheier and Carver 1985). Examples of items include “I’m always trying to figure myself out” and “I think about myself a lot”. Next, participants filled out the self-construal scale which has two subscales, a 12-item independent self-construal subscale and a 12-item interdependent self-construal subscale (Singelis 1994). The independent subscale measures the extent to which individuals see themselves as unique and separate from others, a value that is often stressed in the West, and contains items such as “My personal identity independent of others, is very important to me” and “I act the same way no matter who I am with”. The interdependent subscale measures the extent to which individuals emphasize their connectedness and relatedness to others, a value often found in non-Western cultures, and contains items such as “It is important for me to maintain harmony within my group” and “I have respect for the authority figures with whom I interact”. Finally, participants completed the PANAS, a checklist of adjectives related to various affective states (Watson et al. 1988). It measures the degree to which people experience various positive (e.g., excited, interested) and

negative affective states (e.g., irritable, hostile). In the current study, participants were told to rate the degree to which they experienced ten positive affective states and ten negative affective states over the past two weeks.

5.1.2. Results

Correlational analyses were performed on all the measures collected in the study (see table 7). Replicating the previous finding on convergent validity, NFB was positively correlated with the mood repair subscale of the TMMS ($r = .37, p < .001$). NFB was also significantly negatively correlated with private self-consciousness ($r = -.14, p = .045$). People with higher NFB are less attuned to their personal thoughts and feelings. Furthermore, results showed significant positive correlations between NFB and both independent self-construal ($r = .19, p = .007$) and interdependent self-construal ($r = .19, p = .007$). (Controlling for the covariance between both subscales in a linear regression indicated that both uniquely predicted NFB.) It was also found that people who have a higher NFB tend to experience more positive affect ($r = .14, p = .05$) but not the experience of negative affect in the past two weeks.

TABLE 7
CORRELATIONS BETWEEN NFB AND MEASURES COLLECTED IN PART 1 OF STUDY 3

Scale	Alpha	Correlation with NFB	Correlation with Mood Repair Tendency	Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
Mood repair subscale	.76	.37***	.53****	.22***	-.27****	.05
Private self-consciousness	.78	-.14*	-.04	.03	.09	.25****
Independent self-construal	.64	.19**	.36****	.13	-.16*	.15*
Interdependent self-construal	.71	.19**	.27****	.12	-.10	.03
Positive affect	.88	.14*	.32****	.08	-.09	.12
Negative affect	.83	-.03	-.10	.16*	.08	.07

* $p \leq .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

5.1.3. Discussion

In part 1 of study 3, the correlation between NFB and the TMMS mood repair subscale from the earlier surveys was replicated, supporting the convergent validity of the NFB scale. Furthermore, there was a relationship between private self-consciousness and NFB, driven mainly by the positive association between private self-consciousness and tendency to reflect on one's negative feelings. The negative relationship between NFB and private self-consciousness runs contrary to the alternative account that people who score higher on the NFB scale are more attuned to their feelings and are therefore more likely to regulate their feelings. The finding that higher NFB is associated with greater happiness was also conceptually replicated; people with high NFB experienced greater positive affect in the past two weeks. Interestingly, NFB was positively associated with both independent and interdependent self-construal, suggesting that people with stronger cultural identities, whether individualistic or collectivistic, are more motivated to feel better when they experience bad mood. These relationships are driven mainly by general mood repair tendency suggesting the possibility that strategies of mood repair or even the idea that people should do something to repair their negative mood may be inculcated through culture. Finally, similar to my previous findings that NFB was not significantly associated with depression, anxiety and stress, I did not find a significant association between NFB and negative affect in the past two weeks.

5.2 Negative Mood Induction and Mood Repair in Part 2

One hundred and fifty participants returned two weeks later to participate in part 2 of the study (102 female; mean age = 23). Participants were randomly assigned to either a negative mood condition (n = 79) or a neutral mood condition (n = 71). Following the mood manipulation, participants were asked to make several choices between options that were either

mood lifting or non-mood lifting. Finally, they answered some control questions and several scales including, in this order, the NFB scale, the mood repair subscale from the TMMS, the Parental Bonding Instrument (PBI; Parker, Tupling, and Brown 1979), and the NMR scale which measures people's general expectancies about the effectiveness of mood regulation strategies (Catanzaro and Mearns 1990).

5.2.1. Procedure

Participants were told that they would be participating in several unrelated short studies. The mood manipulation was disguised as a study on "Rating Movies" in which the researchers were interested in understanding how viewers perceive programs based on viewing only selected segments of the show. Participants watched two video clips. The first clip, which was the same for the entire sample, was a documentary from the History Channel. The second clip differed depending on which condition participants were assigned to. Those in the negative mood condition watched a clip containing segments from *Lorenzo's Oil*, a movie about a young boy who is diagnosed with a rare medical condition and his parents' desperate and relentless search for a cure as his health declines. Those in the neutral mood condition watched a documentary on the development of the first general-purpose computing device, a predecessor of modern computers. After watching these two clips, participants answered some questions regarding each clip. For each clip, they were asked to indicate whether they have seen the show from which the scenes were taken, what the gist of the clip was, who the main characters were, whether the story made sense to them, and whether they would be interested to watch the full show. Then they rated their current mood as a manipulation check on two 7-point bipolar scales where 1= unpleasant/bad mood and 7= pleasant/good mood. These scores were averaged to form a mood index ($r = .89$).

Next, participants were introduced to a second study in which the researchers were interested in consumer's evaluations of various forms of mass media such as newspaper articles, recorded films and music. They were told that they would be reviewing and rating several different forms of media. In addition, we told them that they would only review a subset of these items because reviewing these items takes time. Hence, they could choose what they would like to review. Participants were then presented with a choice of listening to two pieces of instrumental music that were not mood lifting (a distractor question), followed by a choice of listening to a happy ("Laughs and Swings") or sad ("A Rainy Day") piece of instrumental music (key dependent variable). After making their music choices, they listened to the song they chose and rated their experience listening to the song on two 7-point scales where 1 = did not enjoy it at all/not at all pleasant and 7 = enjoyed it very much/very pleasant ($r = .91$). After listening to the song, participants answered open-ended questions that asked them to explain their choices.

Finally, participants were asked to complete a set of personality questionnaires including the NFB scale ($\alpha = .86$), TMMS mood repair subscale ($\alpha = .74$), PBI, and NMR scale ($\alpha = .87$). The PBI scale comprises a set of 25 items related to two different parenting styles that respondents experienced as they were growing up: care and overprotection (Parker et al. 1979). Participants were asked to indicate on two separate sets of scales the extent to which each of their parents demonstrated certain behaviors. Example care items include "Spoke to me in a warm and friendly voice" and "Was affectionate to me" ($\alpha = .92$ for mother; $\alpha = .90$ for father). Example overprotection items include "Tried to control everything I did" and "Tried to make me feel dependent on her/him" ($\alpha = .88$ for mother; $\alpha = .81$ for father). The 30-item NMR scale measures generalized expectancies about the effectiveness of negative mood regulation strategies (e.g., "When I'm feeling upset, I believe I can usually find a way to cheer myself up" and "When

I'm feeling upset, I believe I won't feel much better by trying to find some good in the situation (reverse-coded)"; Catanzaro and Mearns 1990). Before leaving the session, participants rated how sad and happy each option in the second study was, and rated their current mood on the same two bipolar scales ($r = .86$) they used to rate their mood prior to the second study.

5.2.2. Results

Manipulation Checks. Eighteen people were excluded from the current sample (three participants guessed the hypothesis, two participants had problems with the computer, and the remaining participants failed the attention checks). Responses on the mood manipulation check questions were submitted to a linear regression with mood condition (coded as -1 if negative and 1 if neutral), mean centered NFB scores from part 1, and their interaction term as predictors. There was a significant main effect of the mood condition such that participants in the negative mood condition experienced more unpleasant and bad mood ($M = 3.89$) compared to the participants in the neutral mood condition ($M = 4.94$) after the mood manipulation ($t(128) = 3.88, p < .001$). The main effect of NFB and the interaction effect between the mood condition and NFB were not significant.

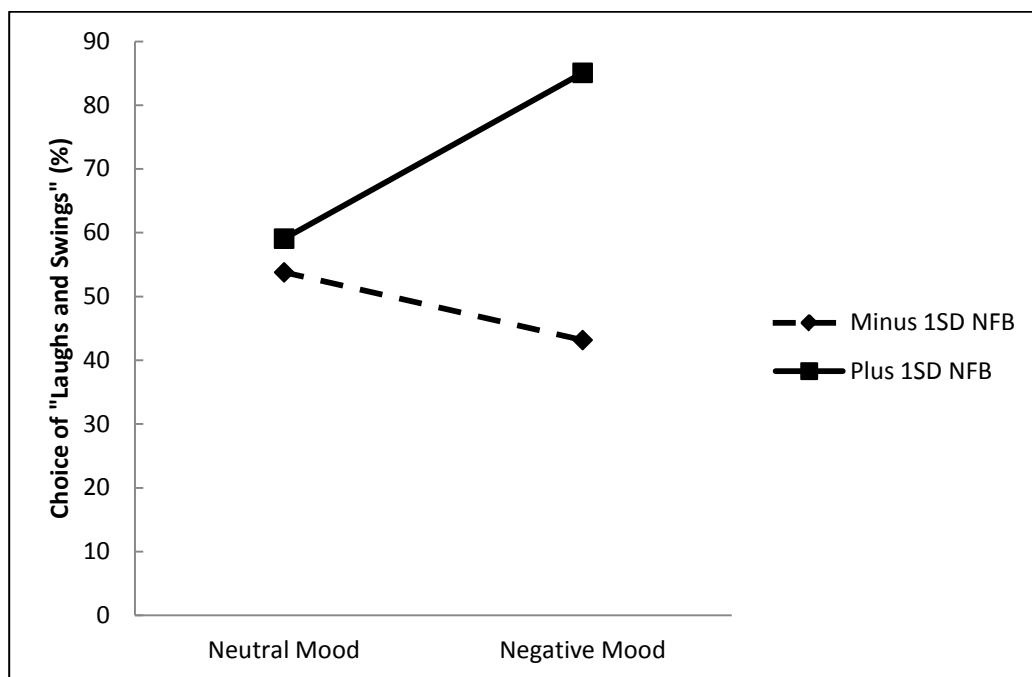
Participants' perceptions of how happy and sad the two songs, "Laughs and Swings" and "A Rainy Day," were also submitted to linear regression analyses using the same predictors. No significant effects emerged. Paired t-tests indicated that in general participants perceived "Laughs and Swings" ($M = 6.39$) as a happier song than "A Rainy Day" ($M = 3.12; t(131) = 22.33, p < .001$), and "A Rainy Day" ($M = 5.08$) as a sadder song than "Laughs and Swings" ($M = 1.69; t(131) = -22.57, p < .001$).

Main Analyses. Participants' choice of song (coded as 0 if "A Rainy Day" and 1 if "Laughs and Swings") was submitted to a binary logistic regression with mood condition (coded

as -1 if negative and 1 if neutral), mean centered NFB scores from part 1, and their interaction term as predictors. Results showed a significant main effect of NFB on choice of song ($\beta = .92$, $Wald = 7.05$, $p = .008$) such that participants with a higher NFB were more likely to choose the mood lifting song. More importantly, there was a significant interaction effect ($\beta = -.74$, $Wald = 4.59$, $p = .032$; see figure 5). This interaction effect remained significant even after controlling for participants' responses on the mood repair subscale of the TMMS measured at both time 1 ($\beta = -.73$, $Wald = 4.42$, $p = .035$) and time 2 ($\beta = -.73$, $Wald = 4.41$, $p = .036$), as well as the NMR scale measured at time 2 ($\beta = -.75$, $Wald = 4.66$, $p = .031$).

FIGURE 5

STUDY 3: THE EFFECT OF MOOD CONDITION AND NFB ON CHOICE OF “LAUGHS AND SWINGS”



A spotlight analysis revealed that among participants with high NFB (+1 *SD* above the sample mean), those induced with negative mood were more likely to choose “Laughs and Swings” over “A Rainy Day” compared to those induced with neutral mood ($\beta = -.69$, $Wald = 4.95$, $p = .026$).

Among participants with low NFB (-1 *SD* below the sample mean), likelihood of selecting the mood lifting song was not significantly different across conditions ($\beta = .21$, Wald = .65, $p = .419$). This provides validating evidence that the NFB scale predicts tendency to engage in mood repair when one experiences negative mood.

Running the same binary logistic regression using NFB at time 2 in place of NFB at time 1 produced a directionally consistent but nonsignificant interaction effect ($p = .155$). Running the same analysis using the mood repair subscale of the TMMS at both time 1 and time 2, and the NMR scale at time 2 in place of the NFB did not produce any significant results (p 's > .55), demonstrating predictive ability of the NFB over these two scales.

Participants' enjoyment and pleasure derived from listening to the song clip they chose was also regressed on the same predictors using linear regression. Results indicated a significant main effect of mood condition, such that participants in the negative mood condition enjoyed listening to their chosen piece of music more than neutral mood participants ($\beta = -.31$, $t(131) = -2.00$, $p = .047$), and a significant main effect of NFB, such that participants with higher NFB enjoyed listening to their chosen piece of music more ($\beta = .64$, $t(131) = 2.54$, $p = .012$). There was also a directionally consistent but non-significant interaction effect that was similar to the main finding above ($\beta = -.43$, $t(66) = -1.69$, $p = .093$). Specifically, among high-NFB participants, those in the negative mood condition enjoyed listening to the song they chose more than those in the neutral mood condition ($\beta = -.56$, $t(131) = -2.62$, $p = .01$). However, this difference was not significant among low-NFB participants ($\beta = -.05$, $t(131) = -.21$, $p = .831$).

Correlation between Measures. To assess test-retest reliability, NFB scores from part 1 were correlated with NFB scores from part 2 (see table 8). The NFB scale demonstrated acceptable test-retest reliability ($r = .73$, $p < .001$), providing further support for the stability of

the measure. Correlational analyses also revealed that NMR was significantly positively correlated with NFB at both time 1 ($r = .31, p < .001$) and time 2 ($r = .42, p < .001$). The modest correlations demonstrate the discriminant validity of NFB from the NMR scale. In addition, we found significant positive correlations between the care by mother subscale of the PBI and NFB at time 1 ($r = .22, p = .013$) and time 2 ($r = .24, p = .005$), and a significant negative correlation between the overprotection by mother subscale and NFB at time 1 ($r = -.20, p = .023$) and time 2 ($r = -.17, p = .05$). These findings suggest that parental upbringing may exert some influence on people's level of NFB.

TABLE 8
CORRELATIONS BETWEEN NFB AND MEASURES COLLECTED IN PART 2 OF STUDY 3

Scale	Alpha	Time 1				
		Correlation with NFB	Correlation with Mood Repair Tendency	Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
Time 2						
NFB	.83	.73****	.59****	.53****	-.57****	-.15
Mood repair tendency	.93	.44****	.68****	.22*	-.23**	.02
Aversion to negative feelings	.89	.48****	.34****	.57****	-.33****	.06
Pleasure from negative feelings	.90	-.51****	-.30****	-.37****	.79****	-.10
Reflection on negative feelings	.91	-.41****	-.17	-.17	-.12	.53****
Mood repair subscale	.74	.34****	.49****	.14	-.29***	.04
Negative mood regulation expectancies	.84	.31****	.49****	.14	-.24**	.06
Care by mother	.91	.22*	.11	.10	-.11	-.20*
Care by father	.89	.07	-.03	.06	.00	-.12
Overprotection by mother	.86	-.20*	-.13	-.06	.11	.19*
Overprotection by father	.82	-.17	-.10	-.03	.05	.22*

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

5.2.3. Discussion

In study 3, I obtained evidence of the moderating role of NFB on mood repair. In particular, high-NFB participants were more likely to repair their bad moods than low-NFB participants. In addition, both mood repair as measured by the TMMS as well as generalized expectancies of mood regulation success as measured by the NMR did *not* moderate people's tendency to choose the uplifting instrumental music piece, demonstrating stronger predictive validity of the NFB scale over these existing measures. It should however be noted that NMR was measured after participants made their song choice. Just as NFB measured at time 2 did not interact significantly with mood to produce mood repair effects, participants' responses on the dependent measure might have influenced their responses on the NMR.

I also examined test-retest reliability in the current study. Test-retest reliability in the current student sample was higher than test-retest reliability in the Mechanical Turk sample. This could be due to the shorter test-retest time interval (one month vs. two weeks) in the current study. It is also possible that the student participants in the lab were more serious and careful in filling out these scales. I also found that NFB was positively associated with success expectancies of negative mood regulation, consistent with the idea that people with higher NFB tend to be more successful at regulating their mood upwards, which in turn enhances their beliefs in the efficacy of negative mood regulation strategies. Nonetheless, the correlation was modest, demonstrating that these constructs are different from each other.

Finally, experiencing greater care from one's mother in the past was positively associated with NFB, whereas being overprotected by one's mother was negatively associated with NFB. This suggests the possibility that from an early age, individuals with high NFB are protected by their mothers (likely the main caregiver for most of the students in the current sample) from

focusing and ruminating on their negative mood states. Similar results were obtained in a subsequent survey with a separate sample of Mechanical Turk workers (N = 206; 78 female; mean age = 34). In this survey, participants were asked to fill out the NFB scale and answer some questions concerning their family's economic condition when they were growing up, the relationship between their parents, their relationship with each of their parents, and how involved each of their parents were in raising them. I also administered an adapted version of the PBI: participants were instructed to indicate the most important and the second most important caregiver or major parental influence in their life, and respond to the items in the PBI based on these two persons that were indicated. Seventy-eight percent (14%) of the participants indicated that their mother (father) was the most important caregiver (others indicated a grandparent, older sibling or foster parent). Fifty-nine percent (15%) of the participants indicated that their father (mother) was the second most important caregiver (others indicated a grandparent, aunt, uncle, older sibling or foster/step-parent parent). Results showed that relationship and involvement but not economic situation ($p = 1.00$) were correlated with NFB. Specifically, higher NFB was positively associated with closer relationships between one's parents ($r = .15, p = .032$), greater maternal involvement ($r = .17, p = .014$), and closer relationship with one's mother ($r = .12, p = .088$). NFB was not significantly correlated with paternal involvement and closeness in relationship with one's father (p 's $> .21$). Replicating the findings pertaining to care and overprotection from the current study, I found a significant positive association between NFB and the amount of care received from the most important caregiver ($r = .27, p < .001$) as well as the second most important caregiver ($r = .17, p = .014$), and a significant negative association between NFB and the amount of overprotection from the most important caregiver ($r = .15, p = .032$) as well as the second most important caregiver ($r = .15, p = .032$). Taken together, these

findings suggest that care and nurturance from one's caregivers foster stronger motives to engage in mood repair, while experiencing constraints and control from one's caregivers dampens motives to engage in mood repair. Future research could further explore developmental antecedents of NFB.

CHAPTER 6

STUDY 4: DOES NFB PREDICT PEOPLE'S PREFERENCE FOR HAPPY NEWS UNDER NEGATIVE MOOD?

In study 3, I obtained supporting evidence that NFB predicts people's tendency to mood repair using happy-sounding music when they experience negative mood. The current study was conducted as a conceptual replication of the previous study. Similar to study 3, I ran a single-factor between-subjects experiment in which participants were asked to provide their responses to the NFB scale during the first part, and were induced with negative (versus neutral) mood and asked to make choices between items that aid or do not aid in mood repair during the second part that took place two weeks later. Note that the sample from the previous study consisted of student lab participants and people's preferences for music of different valence was the main dependent variable. To test the generalizability of the effect beyond a student population, I recruited Mechanical Turk workers as participants and measured people's preferences for reading news of different valence in this study.

I hypothesized that among high-NFB participants, those induced with negative mood would be more likely to select news content that appear more mood lifting compared to those induced with neutral mood; this difference would not be significant among low-NFB participants. Furthermore, NFB would have greater predictive validity than the TMMS (Salovey et al. 1995) and NMR (Catanzaro and Mearns 1990) scales. An additional goal of this study was to investigate whether there were any associations between NFB and people's political beliefs and values.

6.1. Collection of Participants' Responses on the NFB Scale in Part 1

Two hundred and seventy-seven U.S. based participants (138 female; mean age = 35) were recruited from Amazon's Mechanical Turk to participate in this study. Participants were paid \$0.25 for their participation in part 1. Seventeen participants failed the attention check and were thus excluded from the sample. All participants were asked to fill out the NFB scale ($\alpha = .85$), the NMR scale ($\alpha = .93$; Catanzaro and Mearns 1990), as well as the 6-item mood repair subscale of the TMMS ($\alpha = .86$; Salovey et al. 1995). After filling out these scales in order, participants answered a series of questions adapted from the Pew Research Center's (2014) public opinion polls regarding their political attitudes and personal values (see Appendix C for full set of questions) before filling out the demographic questionnaire.

6.1.1. Results

Correlational analyses were performed on all the measures collected in the study (see table 9). NFB was positively correlated with both the NMR scale ($r = .44, p < .001$) and the mood repair subscale of the TMMS ($r = .44, p < .001$). To analyze how NFB relates to political attitudes and personal values items, I conducted an exploratory factor analysis using varimax rotation to cluster the items into separate dimensions. Nine factors emerged from this analysis (see Appendix C). Correlational analyses performed on NFB and these nine factors revealed a significant positive association between factor 1, which comprises of items describing beliefs related to American identity and superiority ($\alpha = .84; r = .19, p = .002$), as well as a significant positive association between factor 2, which comprises of items concerning conservative and traditional values ($\alpha = .80; r = .14, p = .025$). Items from factor 4 were split into two sub-dimensions: items related to expectancies of success due to hard work ($r = .60$) and items related to beliefs that the government should help people with low socioeconomic status ($\alpha = .70$). NFB

TABLE 9

CORRELATIONS BETWEEN NFB AND MEASURES COLLECTED IN PART 1 OF STUDY 4

Scale/Items	Correlation with NFB	Correlation with Mood Repair Tendency	Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
TMMS Mood repair subscale	.44****	.62****	.08	-.20***	-.16**
Negative Mood Regulation Scale	.44****	.63****	.05	-.18***	-.18***
Factor 1 (American identity and superiority)	.19***	.13*	.15*	-.07	-.11
Factor 2 (Conservative and traditional values)	.14*	.12	.08	-.02	-.11
Factor 3 (Interest in politics)	-.01	.16*	-.07	.06	.06
Expectancies of success due to hard work	.17**	.22****	.05	-.06	-.08
Endorsement of government aid for poor	-.03	-.04	-.02	.09	-.06
“This country should do whatever it takes to protect the environment.”	.03	.14*	.16*	-.04	.24****
“People in this country should learn to live with less.”	.04	.10	.09	-.07	.15*
“I recycle and reuse as a daily habit.”	.01	.20***	.05	.02	.19***
“Government is almost always wasteful and inefficient.”	.02	-.08	.08	-.02	-.02
“Most elected officials care what people like me think.”	-.14*	.04	-.14*	.23****	.03
“We should pay less attention to problems overseas and concentrate on problems here at home.”	.09	-.07	.15*	-.21***	.04
“U.S. efforts to solve problems around the world usually end up making things worse.”	-.12	-.08	.01	.05	.15*
“Too much power is concentrated in the hands of a few large companies.”	.02	-.02	.08	-.08	.08
“I am sometimes uncomfortable being around people not of my race.”	-.17**	-.14*	-.05	.16**	.08
“I couldn’t vacation without my smart phone”	-.05	-.01	.05	.12	.05
“Americans need to be willing to give up privacy and freedom in order to be safe from terrorism.”	.01	.18***	.05	.14*	.08

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$.

was positively correlated with expectancies of success due to hard work ($r = .17, p = .005$), but not beliefs about government aid to people with low socioeconomic status ($r = -.03, p = .619$).

Because the Cronbach's alphas for factors 5 to 9 were low, I examined the correlations between NFB and the individual items from these factors. Results indicated significant negative associations between NFB and agreement on the statement "Most elected officials care what people like me think" ($r = -.14, p = .027$) and between NFB and agreement on the statement "I am sometimes uncomfortable being around people not of my race" ($r = -.17, p = .005$). All these correlations remained significant after controlling for political affiliation.

6.1.2. Discussion

NFB was found to be positively associated with both the TMMS mood repair subscale and the NMR scale, replicating findings from the earlier studies. Interestingly, I found that people with higher NFB had stronger American identities, espoused views that supported the use of military force to ensure peace in the world and were more concerned that increased immigration would negatively impact their society. They also tended to hold more religious and traditional values about family and morality, and believed that hard work and determination would lead to success in life. Finally, people with higher NFB were less likely to believe that elected officials cared about what they thought and are less likely to experience discomfort from being around people who are not from their racial group.

6.2. Negative Mood Induction and Mood Repair in Part 2

One hundred and seventy-nine participants (89 female; mean age = 37) participated in part 2 of the study one to two weeks later. They were paid \$0.90 for their participation. Participants were randomly assigned to either a negative mood condition ($n = 86$) or a neutral mood condition ($n = 93$). Following the mood manipulation, participants were asked to make several choices between news article options that were either mood lifting or non-mood lifting. Finally, they answered the NFB scale and some control and demographic questions.

6.2.1. Procedure

Participants were told that they would be participating in several unrelated short studies. Similar to study 3, the mood manipulation was disguised as a study on “Rating Movies” in which the researchers were interested in understanding how viewers perceive programs based on viewing only selected segments of the show. However, instead of watching two video clips, participants watched only one clip which differed depending on which condition they were assigned to. Those in the negative mood condition watched a clip containing a scene from *The Champ* about a young boy crying over the death of his mentor. This video clip has been used in past research (e.g., Cryder, Lerner, Gross, and Dahl 2008) as a manipulation of negative mood. Those in the neutral mood condition watched a shorter version of the same documentary on computing devices that was used in study 3. After watching their assigned video clip, participants answered some questions regarding its content. These questions were similar to the ones asked in study 3. Then they rated their current mood as a manipulation check on two 7-point bipolar scales where 1= unpleasant/bad mood and 7= pleasant/good mood. These scores were averaged to form a mood index ($r = .95$).

Next, participants were introduced to a second study in which the researchers were interested in consumer’s evaluations of various forms of mass media such as news articles. They were told that they would be reviewing and rating several different news articles, and that because it takes time to review these items, they would be asked to choose what they would like to read. Participants were then presented with six different pair-wise choices of news article headlines: three of the pairs included neutral options that were not mood lifting (distractor questions), and the other three pairs valenced options that differed in terms of how mood lifting they were (key dependent variable). The distractor choices were: 1) “Flaw is found in digital

phone system that may let hackers get free service” versus “Microsoft is defensive over media strategy;” 2) “Peugeot recalls 1.18 million SUVs over airbag issue” versus “Volkswagen expands recall over ignition switch problems;” and 3) “City upgrades flood prediction system” versus “Renovation work continues at local schools.” The three critical choices were: 1) “Vietnam vets still battle PTSD decades later” versus “Mother and son reunited after 60 years;” 2) “40-year-old family restaurant razed to the ground after fire broke out” versus “Harvey the happy hound crowned as ‘Britain’s smiliest pet’ thanks to gleaming grin;” and 3) “Doctor convicted of shaking daughter, causing death” versus “Full monty ignites U.K. fashion craze: Men’s birthday suits.” The distractor and critical choices were alternated.

After participants indicated their choices, they answered open-ended questions that asked them to explain their choices and rated their current mood on the same two bipolar scales ($r = .95$) they used to rate their mood prior to the second study. Then they read the article they chose in the choice between “Vietnam vets still battle PTSD decades later” versus “Mother and son reunited after 60 years,” and rated their experience of reading the article on two 7-point scales where 1 = did not enjoy it at all/not at all pleasant and 7 = enjoyed it very much/very pleasant ($r = .74$). Each article comprised approximately 1000 words. Finally, participants were asked to complete the NFB scale ($\alpha = .89$) and rate how sad and happy each option in the second study was before filling out some demographic questions.

6.2.2. Results

Manipulation Checks. Nineteen people who failed the attention checks were excluded from the current sample. Responses on the manipulation check questions were submitted to a linear regression analysis with mood condition (coded as -1 if negative and 1 if neutral), mean centered NFB scores from part 1, and their interaction term as predictors. There was a significant

main effect of the mood condition such that participants in the negative mood condition experienced more unpleasant and bad mood ($M = 3.89$) compared to the participants in the neutral mood condition ($M = 5.94$) after the mood manipulation ($t(156) = 9.93, p < .001$). There was also a significant main effect of NFB such that people with higher NFB experienced a better mood ($t(156) = 2.11, p = .037$). The interaction effect between mood condition and NFB was not significant.

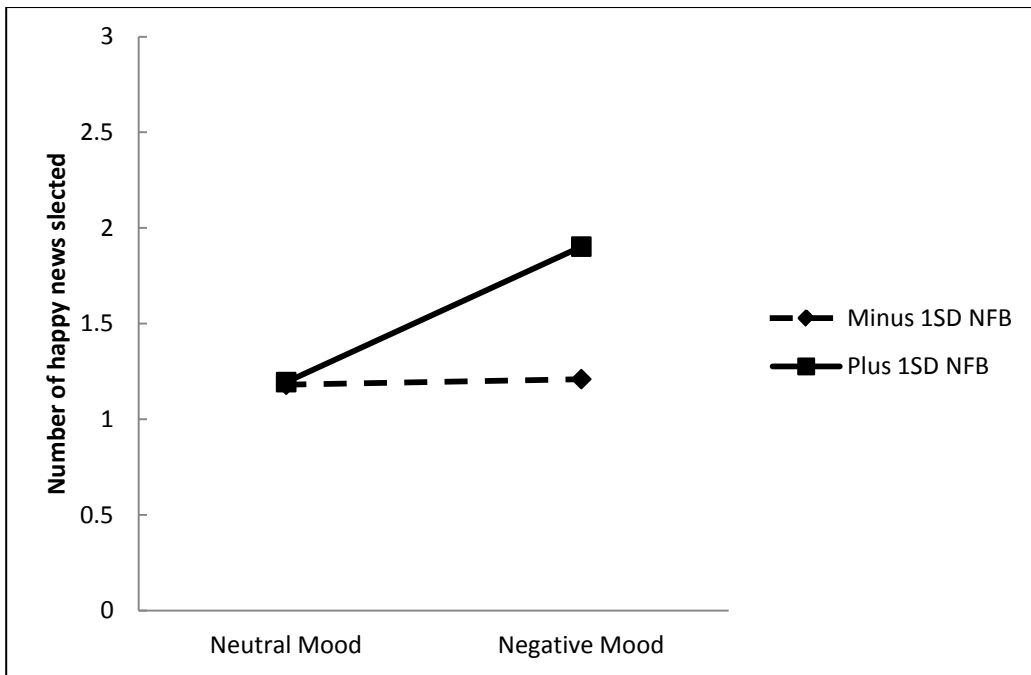
The same linear regression analysis was conducted on participants' perceptions of how happy the mood lifting option was relative to the unpleasant option in each pair. There was a significant main effect of NFB on how happy the news "Mother and son reunited after 60 years" was relative to the news "Vietnam vets still battle PTSD decades later" ($t(156) = 3.07, p = .003$). The main effect of the mood manipulation and the interaction effect between the mood manipulation and NFB were not significant. There was also a significant main effect of NFB on how happy the news "Harvey the happy hound crowned as 'Britain's smiliest pet' thanks to gleaming grin" was relative to the news "40-year-old family restaurant razed to the ground after fire broke out" ($t(156) = 2.34, p = .021$), but non-significant main effect of the mood manipulation and interaction effect between the mood manipulation and NFB. Similarly, there was a significant main effect of NFB on how happy the news "Full monty ignites U.K. fashion craze: Men's birthday suits" was relative to the news "Doctor convicted of shaking daughter, causing death" ($t(156) = 4.34, p < .001$), but non-significant main effect of the mood manipulation and interaction effect between the mood manipulation and NFB. In sum, compared to low-NFB participants, high-NFB participants tended to view the mood-lifting option as much happier than the unpleasant option in each pair. Paired t-tests indicated that participants generally perceived "Mother and son reunited after 60 years" ($M = 5.86$) as happier news than "Vietnam

vets still battle PTSD decades later” ($M = 1.97$; $t(159) = 29.80$, $p < .001$), “Harvey the happy hound crowned as ‘Britain’s smiliest pet’ thanks to gleaming grin” ($M = 6.36$) as happier news than “40-year-old family restaurant razed to the ground after fire broke out” ($M = 2.07$; $t(159) = 33.56$, $p < .001$), and “Full monty ignites U.K. fashion craze: Men’s birthday suits” ($M = 5.60$) as happier news than “Doctor convicted of shaking daughter, causing death” ($M = 1.44$; $t(159) = 33.59$, $p < .001$).

Main Analyses. The number of happy news articles participants chose among the three critical choices was submitted to a multiple linear regression with mood condition (coded as -1 if negative and 1 if neutral), mean centered NFB scores from part 1, and their interaction term as predictors. Results showed a significant main effect of mood such that participants in the negative mood condition selected more happy news than those in the neutral mood condition ($\beta = -.17$, $t(156) = -2.24$, $p = .026$). There was also a significant main effect of NFB on number of happy news selected ($\beta = .27$, $t(156) = 2.30$, $p = .023$) such that participants with higher NFB selected more happy news. More importantly, there was a significant interaction effect ($\beta = -.29$, $t(156) = -2.40$, $p = .018$; see figure 6). This interaction effect remained significant even after controlling for participants’ responses on the mood repair subscale of the TMMS ($\beta = -.28$, $t(155) = -2.34$, $p = .02$) and the NMR scale ($\beta = -.30$, $t(155) = -2.49$, $p = .014$). A spotlight analysis revealed that among participants with high NFB (+1 *SD* above the sample mean), those induced with negative mood selected more happy news compared to those induced with neutral mood ($\beta = -.35$, $t(156) = -3.28$, $p = .001$). Among participants with low NFB (-1 *SD* below the sample mean), the same difference was not significant ($\beta = .02$, $t(156) = .14$, $p = .885$). This provides validating evidence that the NFB scale predicts tendency to engage in mood repair when one experiences negative mood.

Running the same linear regression using NFB at time 2 in place of NFB at time 1 produced significant main effects of the mood condition ($\beta = .16, t(156) = -2.09, p = .038$) and NFB ($\beta = .28, t(156) = 2.40, p = .018$), as well as the same interaction effect ($\beta = -.25, t(156) = -2.14, p = .034$). Spotlight analyses also revealed a significant effect of mood among participants with high NFB ($\beta = -.32, t(156) = -3.01, p = .003$) but not participants with low NFB ($\beta = .01, t(156) = .05, p = .961$). Running the same analysis using the mood repair subscale of the TMMS and the NMR scale in place of the NFB did not produce any significant results (p 's $> .82$), demonstrating predictive ability of the NFB scale over these two scales.

FIGURE 6
 STUDY 4: THE EFFECT OF MOOD CONDITION AND NFB ON
 NUMBER OF POSITIVE NEWS ARTICLES CHOSEN



Enjoyment from Reading Chose Article. Participants' enjoyment and pleasure derived from reading the news article they chose was also regressed on the same predictors using linear

regression. Results indicated a significant main effect of NFB, such that participants with higher NFB enjoyed reading their chosen article more ($\beta = .56, t(156) = 3.21, p = .002$). The main effect of mood and the interaction effect between mood and NFB were not significant (p 's $> .60$).

TABLE 10
CORRELATIONS BETWEEN NFB AND MEASURES COLLECTED IN PART 2 OF STUDY 4

Scale	Alpha	Correlation with NFB	Correlation with Mood Repair Tendency	Time 1		
				Correlation with Aversion to Negative Feelings	Correlation with Pleasure from Negative Feelings	Correlation with Reflection on Negative Feelings
Time 2						
NFB	.89	.75****	.49****	.53****	-.49****	-.38****
Mood repair tendency	.94	.55****	.65****	.28****	-.20*	-.22**
Aversion to negative feelings	.90	.51****	.30****	.62****	-.34****	-.01
Pleasure from negative feelings	.95	-.49****	-.17*	-.38****	.62****	.10
Reflection on negative feelings	.93	-.39****	-.13	-.07	.16*	.61****

* $p < .05$. ** $p < .01$. *** $p < .005$. **** $p < .001$

Test-Retest Reliability. To assess test-retest reliability, NFB scores from part 1 were correlated with NFB scores from part 2 (see table 10). The NFB scale demonstrated acceptable test-retest reliability ($r = .75, p < .001$), providing further support for the stability of the measure.

6.2.3. Discussion

In study 4, I replicated the finding from study 3 that NFB moderates mood repair effects. In particular, high-NFB participants were more likely to repair their bad moods than low-NFB participants. Similar to the non-significant results from study 3, the TMMS and NMR did *not* moderate people's tendency to read more uplifting news articles, demonstrating stronger predictive validity of the NFB scale over these existing measures. Furthermore, NFB measured at time 2 moderated people's tendency to select happy news. The pattern of interaction that

emerged was similar to the one obtained with NFB measured at time 1. Finally, I also examined test-retest reliability in the current study and found that test-retest reliability in the current student sample was acceptable and similar to that in study 3, providing further evidence of the stability of the NFB measure.

CHAPTER 7

STUDY 5: DOES NFB PREDICT ATTITUDES TOWARD MOOD LIFTING ADVERTISEMENT APPEALS?

In the previous two studies, I manipulated participants' mood and examined whether chronic levels of NFB would interact with mood to influence their preference for mood lifting options. The aim of the current study was to investigate how participants who differ on NFB react towards mood lifting advertisement appeals independent of their existing mood states. Specifically, I tested whether individuals with high NFB would generally hold more favorable attitudes towards messages that emphasize happiness given their chronic motive to maintain a positive mood state. Hence, I conducted a single-factor (mood lifting appeal: present vs. absent) between-subjects design experiment, with a continuous NFB factor, to test this hypothesis. In particular, I examined whether NFB would influence participants' attitudes towards a product depending on the type of ad appeal employed. According to the hypothesis, high-NFB participants would have greater preference for the product when the mood lifting appeal is present as opposed to absent. It is uncertain whether low-NFB participants would have lower or similar preference for the product when the appeal is present (vs. absent). It is possible that preference would be lower because low-NFB individuals tend to have a greater desire to focus and dwell on negative moods, and may therefore display stronger reactance towards mood lifting appeals. It is also possible that there would be no difference in preference because they may simply deem the mood lifting appeal to be irrelevant to them.

7.1. Procedure

Four hundred and forty U.S. based participants (264 female; mean age = 38) were recruited from Amazon's Mechanical Turk to participate in this study. They were paid \$0.10 for

their participation in part 1, in which they were asked to fill out the NFB scale ($\alpha = .87$; α for the mood repair tendency subscale = .92; α for aversion to negative feelings subscale = .92; α for pleasure from negative feelings subscale = .91; α for reflection on negative feelings subscale = .90) as well as some demographic questions. After completing the survey in part 1, participants were assigned a qualification in Mechanical Turk which allowed them to participate in part 2 of this study that was conducted within a time period of three weeks after part 1.

Of the 440 participants who completed the NFB scale in part 1, 176 participants completed part 2 (104 female; mean age = 35) in exchange for \$0.25. These participants were told that the researchers were interested in understanding people's perceptions of ads and were asked to imagine themselves in a scenario in which they were thinking of getting some vitamins and came across an advertisement for a vitamin C health supplement. Participants were randomly assigned to either the mood appeal-absent condition ($n = 87$) or the mood appeal-present condition ($n = 89$). Those in the appeal-absent condition were exposed to a print ad for a bottle of *Nutrition Now* vitamin C gummies that had a message that focused on the health benefits of consuming these vitamins, whereas those in the appeal-present condition saw a print ad for the same bottle of vitamins that had a message that focused on the mood benefits of consuming these vitamins (see Appendix D for both advertisements). To enhance the mood appeal manipulation, the print ad for the appeal-present condition featured a smiley face and brighter colors (i.e., white background and orange fonts).

After reading the ad in their respective conditions, participants responded to two questions about the product they were shown: "Right now, how much would you feel like buying this product?" on a 7-point scale where 1 = not at all and 7 = very much, and "Right now, how interested are you in finding out more about this product?" on a 7-point scale where 1 = not at all

interested and 7 = very interested. Responses on these two items were averaged to form an index that constituted that main dependent variable ($r = .86$). Then, they indicated how much they would be willing to pay for a bottle of vitamin Cs (with 100 gummies) from *Nutrition Now*, and rated the extent to which they thought about how the product would improve their health, the extent to which they thought about how the product would help them feel happier, whether they believed the product would make them healthier, and whether they believed the product would make them feel happier on 7-point scales where 1 = not at all and 7 = to a large extent. Following that, they answered some covariate questions regarding whether they have heard of *Nutrition Now* and tried its products, their frequency of consuming health supplements, whether they have been diagnosed by a doctor with a vitamin C deficiency, and the state of their health. They also rated how they felt about consuming vitamin supplements on a 5-point scale where 1 = it is unnecessary and 7 = it is necessary, and their agreement with the statement “I make sure that I maintain a balanced diet” on a 5-point scale where 1 = strongly disagree and 5 = strongly agree. Finally, before answering the demographic questions, participants rated their mood before they did this survey on two different scales where 1 = unpleasant/bad mood and 7 = pleasant/good mood ($r = .93$).

7.2. Results

7.2.1. Effect of Appeal Type and NFB on Product Interest

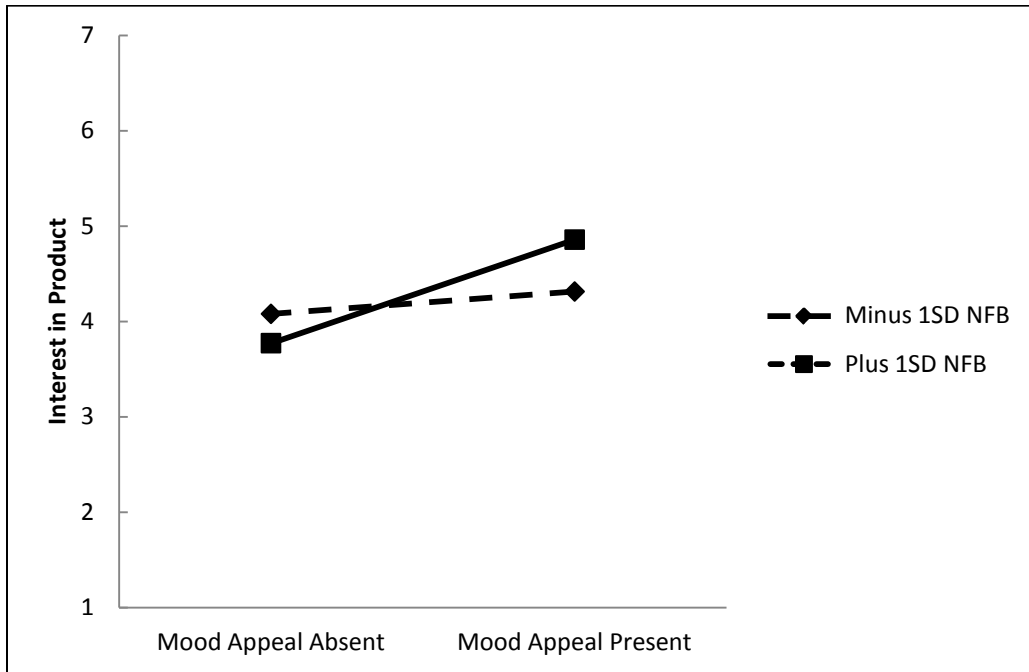
Twenty-three participants failed the attention checks and were thus excluded from the analyses. It was predicted that, regardless of existing mood, high-NFB participants exposed to the mood lifting appeal would be more interested in the product than those exposed to the appeal that focused on health benefits, whereas this difference would be either non-significant or significant in the reverse direction among low-NFB participants. To test this hypothesis, I

submitted the dependent measure to a linear regression analysis with appeal condition (coded as -1 if absent and 1 if present), mean centered NFB scores from part 1, and their interaction term as predictors. Self-reported prior mood that was collected at the end of the survey was also included as a covariate. Results showed a significant main effect of the mood appeal such that participants in the appeal-present condition were more interested in buying and finding out about the product than those in the appeal-absent condition ($\beta = .29$, $t(148) = 2.11$, $p = .037$). The interaction effect was non-significant but directionally consistent with the hypothesis ($\beta = .33$, $t(148) = 1.46$, $p = .148$). After controlling for views concerning the necessity of consuming vitamin supplements and whether participants made sure that they maintained a balanced diet, the interaction effect held up and became more significant ($\beta = .35$, $t(146) = 1.61$, $p = .11$; see figure 7). Views concerning the necessity of vitamins ($\beta = .39$, $t(146) = 3.12$, $p = .002$) and tendency to maintain a balanced diet ($\beta = -.25$, $t(146) = -1.89$, $p = .061$) but not self-reported prior mood ($\beta = -.06$, $t(146) = -.58$, $p = .564$) affected participants' interest to buy and find out more about the product.

A spotlight analysis controlling for these two covariates and prior mood revealed that among participants with high NFB (+1 *SD* above the sample mean), those in the appeal-present condition were more interested in buying and finding out about the product compared to those in the appeal-absent condition ($\beta = .55$, $t(146) = 2.86$, $p = .005$). Among participants with low NFB (-1 *SD* below the sample mean), the same difference was not significant ($\beta = .11$, $t(146) = .55$, $p = .582$). This provides some preliminary evidence that the NFB scale may predict the effectiveness of mood lifting appeals. Additionally, there was no evidence that low-NFB participants have more reactance toward products marketed using mood lifting appeals. Submitting the amount of money participants were willing to pay for the product to the same linear regression did not result in any significant effects.

FIGURE 7

STUDY 5: THE EFFECT OF TYPE OF ADVERTISEMENT APPEAL AND NFB ON INTEREST TO BUY AND
FIND OUT MORE ABOUT PRODUCT



7.2.2. Effect of Appeal Type and NFB on Consideration of Health versus Mood Benefits

The extent to which participants thought about how the product would help them feel happier was submitted to the same linear regression analysis. There was no significant effect of self-reported prior mood ($\beta = .04, t(148) = .37, p = .709$). Results indicated a significant main effect of appeal condition such that participants those exposed to the mood lifting appeal considered how the product would help them feel happier to a greater extent than those exposed to the other appeal ($\beta = .58, t(148) = 4.20, p < .001$), demonstrating that the appeal manipulation was successful. In addition, there was a significant interaction effect ($\beta = .60, t(148) = 2.68, p = .008$): the simple main effect of appeal was significant among high-NFB participants ($\beta = .96, t(148) = 4.84, p < .001$) but not low-NFB participants ($\beta = .19, t(148) = .94, p = .349$). In other

words, high-NFB participants were more likely to consider how the vitamins C product would lift their mood. I regressed the same predictors on the extent to which participants thought about how the product would improve their health. There were no significant main effects of the appeal manipulation ($\beta = .16, t(148) = 1.38, p = .17$) and NFB ($\beta = .28, t(148) = 1.46, p = .15$). The interaction effect between the appeal manipulation and NFB was also not significant ($\beta = -.04, t(148) = -.23, p = .817$).

Submitting participants' expectancies of whether the product would help them feel happier also led to similar results. Type of appeal ($\beta = .13, t(148) = 1.01, p = .312$) and self-reported prior mood ($\beta = -.04, t(148) = -.44, p = .664$) did not have significant effects on participants' expectancies of mood benefits. There was a significant interaction between type of appeal and NFB ($\beta = .54, t(148) = 2.49, p = .014$) such that the simple main effect of appeal was significant among high-NFB participants ($\beta = .48, t(148) = 2.51, p = .013$) but not low-NFB participants ($\beta = -.21, t(148) = -1.11, p = .268$). Hence, high-NFB participants were more likely to believe that the vitamins C product would help them feel happier. There were no significant main effects of the appeal condition ($\beta = .02, t(148) = .17, p = .866$) and NFB ($\beta = .07, t(148) = .36, p = .722$) on participants' expectancies of whether the product would improve their health. The interaction effect between the appeal condition and NFB was also not significant ($\beta = .08, t(148) = .41, p = .68$).

7.2.3. Mediation of Product Interest by Consideration of Mood Benefits

To test whether high-NFB participants were more interested in the vitamin C gummies because of the mood lifting appeal, I ran a moderated mediation with 5,000 bootstrapped samples using model 8 of the PROCESS macro for SPSS with views concerning the necessity of consuming vitamin supplements and whether participants made sure that they maintained a

balanced diet as covariates and the extent to which they thought about how the product could help them feel happier as a mediator on their interest in buying and finding out more the product (Hayes 2013). Results indicated a significant moderated mediation for product interest ($\beta = .31$, with a bias-corrected 95% confidence interval that does not include 0 $\{.1115, .5944\}$). More specifically, among the high-NFB participants, consideration about the mood lifting properties about the product mediated the effect of type of appeal on product interest ($\beta = .49$ with a bias-corrected 95% confidence interval that excludes 0 $\{.2662, .7883\}$). However, among the low-NFB participants, there was no mediation ($\beta = .11$, with a bias-corrected 95% confidence interval that contains 0 $\{-.0959, .3073\}$).

The same analysis was conducted using participants' expectancies of whether the product would help them feel happier as the mediator. There was a significant moderated mediation for product interest ($\beta = .27$, with a bias-corrected 95% confidence interval that does not include 0 $\{.0717, .5375\}$). Among the high-NFB participants, believing that the product would help them feel happier mediated the effect of type of appeal on product interest ($\beta = .22$ with a bias-corrected 95% confidence interval that excludes 0 $\{.0360, .4547\}$). However, among the low-NFB participants, type of appeal did not mediate product interest ($\beta = -.12$, with a bias-corrected 95% confidence interval that contains 0 $\{-.3148, .0549\}$). Taken together, these findings suggest that high-NFB participants were more interested in the product because of the perceived mood-lifting properties of the product.

7.3. Discussion

Study 5 aimed to investigate how participants who differ on NFB react towards mood lifting advertisement appeals irrespective of their existing mood states. It was predicted that individuals with high NFB would generally have more favorable attitudes towards messages that

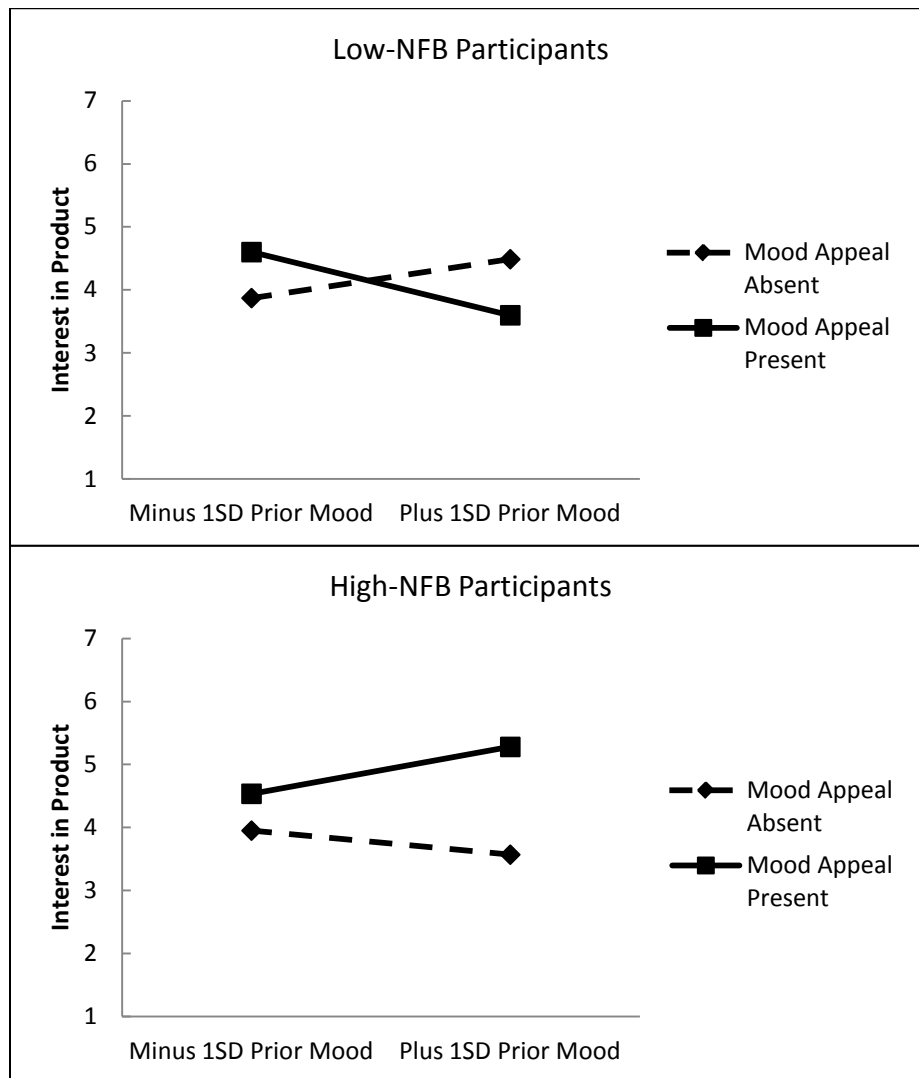
emphasize happiness given their chronic tendency to maintain a positive mood state, whereas individuals with low NFB would display either less favorable or indifferent attitudes towards such appeals. Although the critical interaction between type of appeal and NFB did not reach significance, its pattern of the interaction was directionally consistent with my hypothesis. Subsequent spotlight analyses also revealed that high-NFB participants displayed stronger interest in the product when the appeal emphasized mood lifting benefits as opposed to health benefits. The same contrast was not significant among low-NFB participants, suggesting that in general individuals with low need to engage in mood repair have no reactance towards ads that tout mood benefits.²

In summary, preliminary results from study 5 suggest that NFB can influence people's preferences for mood lifting options independent of their existing mood states. In particular, people with higher NFB tend to show greater interest in products that are marketed as providing some mood lifting benefits. The story is somewhat more complicated for people with low NFB: these individuals are generally indifferent toward mood lifting appeals but seem to display some reactance toward such appeals when they experience negative moods (refer to footnote 1 and figure 8). By and large, individuals with low NFB may deem messages that tout mood benefits as

² To test whether there would be reactance against the mood lifting appeal when low-NFB participants experienced prior negative mood states, I ran a three-way interaction analysis with type of appeal, NFB, prior mood and their interaction terms as predictors on participants' interest to buy and find out more about the product. I included views about the necessity of vitamins and tendency to maintain a balanced diet as covariates in this regression. According to the results, there was a significant three-way interaction ($\beta = .40, t(143) = 2.69, p = .008$; see figure 8). Further examination of this interaction pattern revealed that among low-NFB participants, there was a significant simple two-way interaction between type of appeal and self-reported prior mood on product interest ($\beta = -.29, t(143) = -1.99, p = .048$), which was driven by a significant simple main effect of prior mood among low-NFB participants when the mood lifting appeal was present ($\beta = -.36, t(143) = -2.11, p = .036$). In other words, when the appeal emphasized happiness, the more negative low-NFB participants' prior moods were, the less interest (possibly more reactance) they had in the product. The same simple two-way interaction was not significant among high-NFB participants.

FIGURE 8

STUDY 5: THE EFFECT OF PRIOR MOOD AND TYPE OF ADVERTISEMENT APPEAL ON INTEREST TO BUY AND FIND OUT MORE ABOUT PRODUCT (UPPER PANEL: TWO-WAY INTERACTION AMONG LOW-NFB PARTICIPANTS; LOWER PANEL: TWO-WAY INTERACTION AMONG HIGH-NFB PARTICIPANTS)



irrelevant. However, when they experience negative mood, they may consider such appeals as incompatible with their desire to focus and dwell on their negative mood. Nonetheless, current findings pertaining to participants' prior mood must be interpreted with caution because these findings were based on participants' self-reports which might have been biased by their exposure

to the advertisements and responses on the survey measures. In fact, unlike in previous studies where a mood repair effect was observed among high-NFB participants, there was no enhancement of interest in the product when mood was relatively more unpleasant among high-NFB participants who were shown the mood lifting ad appeal. Future studies should seek to replicate these findings by manipulating mood or using measures of pre-existing mood states that are less subject to response bias.

CHAPTER 8

STUDY 6: DOES NFB PREDICT MOOD REPAIR VIA INDULGENCE IN SNACKS?

Studies in marketing have demonstrated that people tend to increase their consumption of fattening, unhealthy foods in response to negative mood states (Garg, Wansink, and Inman, 2007; Garner, Wansink, Kim, and Park 2014). The prevailing theory is that individuals engage in emotional eating to alleviate themselves from aversive negative mood states (Andrade 2005; Garg et al. 2007; Labroo and Anirban Mukhopadhyay 2009; Tice et al. 2001). The underlying premise for this theory is that food, especially ones with high caloric and sugar content, acts as a mood regulator, enhancing people's current affective state after intake (Morris and Reilly 1987; Polivy and Herman 1976). Providing support for this theory, studies have shown that this effect is attenuated when people do not perceive unhealthy snacks as mood-lifting (Andrade 2005; Tice et al. 2001), and when negative moods are perceived as transient states that need not be regulated (Labroo and Mukhopadhyay 2009).

The purpose of the current study was to test the predictive validity of the NFB scale by examining whether it increases people's tendency to indulge in unhealthy snacks when they experience negative mood. I ran a single-factor between subjects lab experiment at Columbia University in which participants were asked to provide their responses to the NFB scale in an online survey before coming to the lab, and were induced with negative (versus neutral) mood and received snack foods in a sham taste test during the lab session. This taste-rating paradigm is often used as a method to unobtrusively measure food consumption in the lab (e.g., Tice et al. 2001; Heatherton, Striipe and Wittenberg 1998). I hypothesized that among participants with higher NFB, those induced with negative mood would eat a greater quantity of snacks compared

to those induced with neutral mood; this difference would not be significant among participants with low NFB.

To verify that participants do regard eating as a strategy to improve their mood, I conducted a pilot test ($N = 74$) in which I collected Columbia students' responses on the NFB and asked them several questions regarding their use of certain strategies to accomplish different goals (e.g., "I buy new gym wear to make myself exercise"). I included the following questions on mood regulation goals: "When I want to feel more positive emotion, I eat foods that I would enjoy eating," "When I want to feel less negative emotion, I eat foods that I would enjoy eating," and "I try to improve my mood by eating chocolate." Participants responded to these items on a likert scale from 1 (strongly disagree) to 7 (strongly agree). Ratings on the first two questions were averaged ($r = .70$). I found that people with higher scores on our NFB scale tend to eat foods that they would enjoy eating to repair their mood ($r = .37, p < .005$). Further, they were also more likely to report improving their mood by eating chocolate ($r = .27, p < .05$). Hence, indulging in food is a mood regulation strategy that is relevant to Columbia students.

8.1. Procedure

One hundred and thirty-seven participants (85 female; mean age = 22) were recruited from Columbia Business School's behavioral lab panel to participate in this study for \$5. Before coming to the lab session, they answered an online survey that contained the NFB scale ($\alpha = .89$). To disguise the intent of the study, other scales that do not pertain to affect-related constructs (i.e., the style of processing scale [Childers, Houston, and Heckler 1985]; material values scale [Richins 2004]; and need for cognition scale [Cacioppo, Petty, and Kao 1984] were included alongside the NFB scale. There were no significant correlations between these scales and the NFB scale. Participants were told that the purpose of these questionnaires was to

understand the profile of participants who participate in studies at the behavioral lab on a regular basis. Upon coming to the lab, participants were then randomly assigned to either a negative ($n = 68$) or neutral mood ($n = 69$) condition. They were told that they would be participating in several unrelated studies by different professors at the business school.

In the first part of the lab session, participants completed the same mood manipulation task that was employed in study 3. After this task, participants rated their current mood as a manipulation check on two 7-point bipolar scales where 1= unpleasant/bad mood and 7= pleasant/good mood. These scores were averaged to form a mood index ($r = .81$). Then, they proceeded to perform the taste test. They were told that the taste test was a pilot study on differences among people in the perception and taste of various kinds of foods. They were then presented three kinds of snacks (i.e., pretzels, chocolate chip cookies, and small cheese “goldfish” crackers) in separate plates, and were asked to fill out a questionnaire rating each of these snacks on how sweet, salty, bitter, sour, tasty, appetizing, oily they are. Using three different snacks would cater to individual taste preferences and enhance the realism of the taste test. Participants were specifically instructed to take as much as they needed to rate the taste of each snack food, and were encouraged to help themselves to the leftover snacks that would otherwise be thrown out at the end of the study. Unbeknownst to the participants, the amount of each snack food was counted before and after the taste test. The quantity of snack foods consumed by each participant constituted the key dependent measure.

After the taste test, participants filled out another survey that included questions about their current mood ($r = .88$), demographics, liking for each snack food, and frequency of eating snacks in general. The survey also included covariate measures such as how hungry or full they felt before the study, the time of their last meal, whether they exercised before the session,

whether they were currently on a diet, whether they were currently feeling unwell, how health conscious they are, and the extent to which they avoid eating snacks in general. Participants also filled out the Dieting Restraint Scale (Herman and Polivy 1975), and questions about the extent to which they restricted their intake of snacks in the taste test and the extent to which they thought eating can improve their mood. Participants were able to consume the snacks foods as they were filling out the survey.

8.2. Results

8.2.1. Manipulation Check

Fifteen participants failed the attention check and were thus removed from the sample. Responses on the manipulation check questions were submitted to a linear regression analysis with mood condition (coded as -1 if negative and 1 if neutral), mean centered NFB scores from the online survey, and their interaction term as predictors. Results indicated a significant main effect of the mood condition such that participants in the negative mood condition experienced more unpleasant and bad mood ($M = 3.39$) compared to the participants in the neutral mood condition ($M = 4.68$) after the mood manipulation ($t(116) = 5.43, p < .001$; there were two missing responses on the manipulation check). The main effect of NFB and interaction effect between the mood condition and NFB were not significant.

8.2.2. Amount of Snacks Eaten

The number of pretzels, cookies and crackers were counted before and after the taste test. The amount of snack foods each participant consumed was therefore calculated using subtraction. Because the three snack foods differed in size and there was especially high variance in the number of crackers people ate, amounts eaten for each snack food were standardized and the three z-scores for each participant were summed to create an index of total amount of food

consumed. This is in line with procedures employed by Tice et al. (2001). A t-test showed a directionally consistent but nonsignificant effect of negative mood on this index score ($M_{\text{negmood}} = .22$ vs. $M_{\text{neumood}} = -.32$; $t(120) = 1.28$, $p = .202$).

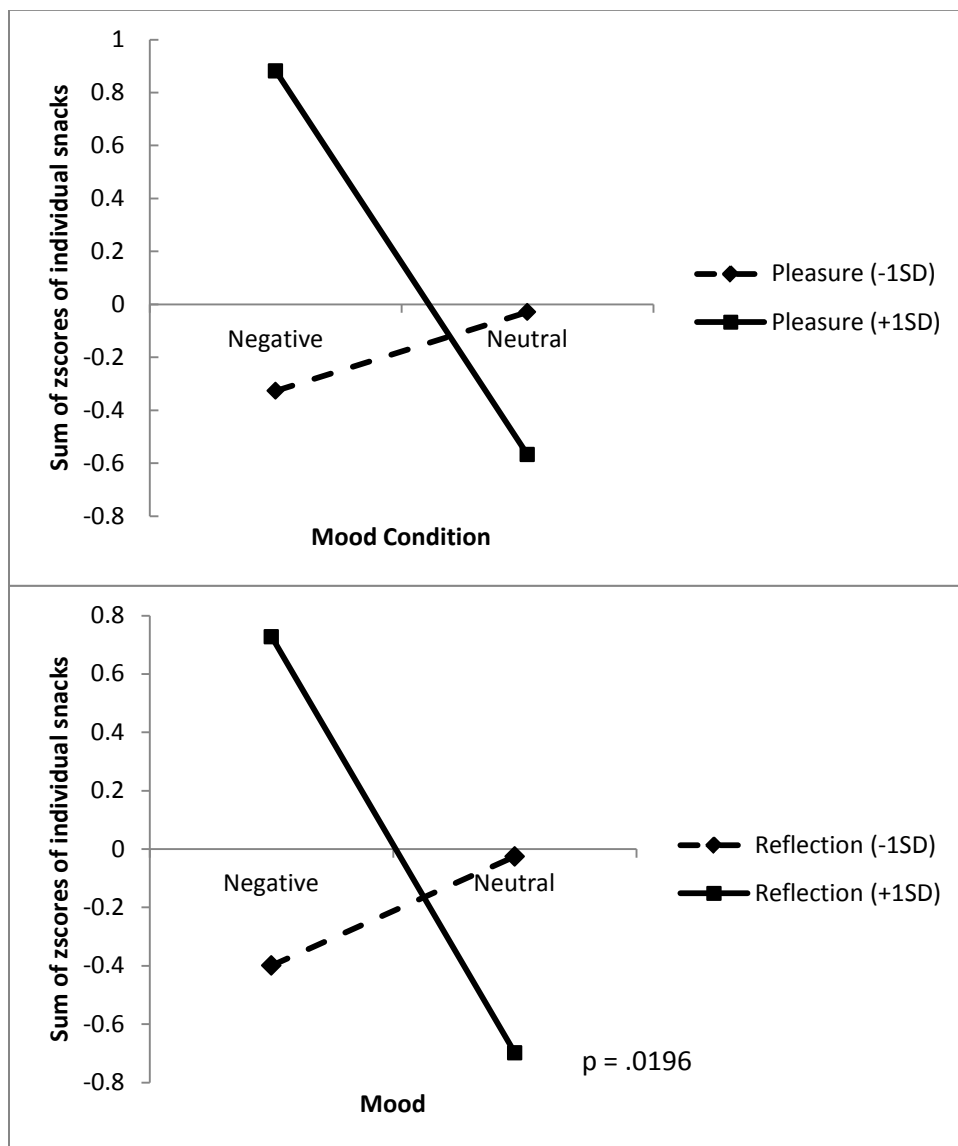
Index scores were submitted to a linear regression with mood condition (coded as -1 if negative and 1 if neutral), mean centered NFB scores from the online survey, and their interaction term as predictors. Contrary to my prediction that NFB would moderate the effect of mood on amount of snack foods eaten, there was no significant interaction effect between NFB and mood condition ($\beta = .25$, $t(118) = .25$, $p = .417$). There were also no significant main effects of mood ($\beta = -1.31$, $t(118) = -1.02$, $p = .311$) and NFB ($\beta = -.19$, $t(118) = -.63$, $p = .532$). Controlling for the covariates measured in this study did not make a difference to the significance of the results.

The same analysis was performed using each of the individual NFB subscales as moderators. Results indicated a significant moderating effect of the pleasure from negative feelings subscale on the total amount of snack foods consumed ($\beta = -.51$, $t(118) = -2.04$, $p = .044$; see figure 9, upper panel). A subsequent spotlight analysis revealed that among participants with high pleasure from negative feelings (+1 *SD* above the sample mean), those induced with negative mood consumed more snacks than those induced with neutral mood ($\beta = -.72$, $t(118) = -2.40$, $p = .018$). Among those with low pleasure from negative feelings (-1 *SD* below the sample mean), there was no significant difference in amount of snacks consumed across the two mood conditions ($\beta = .15$, $t(118) = .49$, $p = .622$). In addition, there was a significant moderating effect of the reflection on negative feelings subscale on the total amount of snack foods consumed ($\beta = -.46$, $t(118) = -2.10$, $p = .038$; see figure 9, lower panel). More specifically, among participants with high reflection on negative feelings (+1 *SD* above the sample mean), those induced with

negative mood consumed more snacks than those induced with neutral mood ($\beta = -.71, t(118) = -2.37, p = .02$). However, among participants with low reflection on negative feelings ($-1 SD$ below the sample mean), there was no significant effect of mood on amount of snacks consumed

FIGURE 9

STUDY 6: THE EFFECT OF MOOD CONDITION AND NFB SUBSCALES (UPPER PANEL: PLEASURE FROM NEGATIVE FEELINGS; LOWER PANEL: REFLECTION ON NEGATIVE FEELINGS) ON INDEX OF AMOUNT OF SNACKS EATEN



($\beta = .19, t(118) = .62, p = .539$). Neither the mood repair tendency subscale nor the aversion toward negative feelings subscale moderated the effect of mood on total amount of snacks consumed.

Additional moderation analyses were run to check whether the current set of data would replicate mood repair findings that have been documented in the literature. Based on past research (e.g., Andrade 2005) suggesting that females might be more susceptible to emotional eating than males, I ran the same analysis to examine whether gender would moderate the effect of mood on amount of snacks eaten. Results indicated a significant interaction between gender and mood condition on total amount of snacks consumed ($\beta = 1.38, t(118) = 3.25, p = .002$). However, contrary to past research, negative mood significantly increased eating behavior among males ($\beta = -1.13, t(118) = -3.37, p = .001$) but not females ($\beta = .25, t(118) = .96, p = .341$). The same analysis was also run to check if the extent to which participants thought eating could improve their mood would moderate the effect of mood on amount of snacks eaten. There were no significant effects. This is surprising in light of previous work (e.g., Tice et al. 2001) that suggests that mood repair using a particular strategy is more likely to take place when people expect that strategy to be effective in lifting one's mood. Nonetheless, this item was measured towards the end of the survey and may have been influenced by the taste test and the other questions being asked in the survey. Finally, I did not find participants' scores on the dieting restraint scale to moderate the effect of mood on amount of snacks eaten in the taste test, in line with findings in the extant literature (Tice et al. 2001; Yeomans and Coughlan 2008).

8.2.3. Mood Improvement

To test whether mood improved after participants ate more snacks, I computed a mood improvement score by subtracting mood measured after the manipulation task from mood

measured immediately after the taste test (before participants filled out the final survey). To test whether participants who tend to gain more pleasure from negative feelings in the negative mood condition were more likely to experience mood improvement following the taste test, mood improvement scores were regressed on mood condition, mean-centered pleasure from negative feelings scores, and their interaction term. There were no significant results from this analysis (interaction: $\beta = -.09$, $t(118) = -.71$, $p = .478$).

The same regression was run with mean centered reflection on negative feelings scores as the moderator. In this case, there was a marginally significant interaction between the mood condition and reflection on negative feelings on mood improvement ($\beta = -.21$, $t(118) = -1.81$, $p = .074$). A subsequent spotlight analysis revealed that among participants with high reflection on negative feelings (+1 *SD* above the sample mean), those induced with negative mood experienced more improvement in mood than those induced with neutral mood ($\beta = -.59$, $t(118) = -3.79$, $p < .001$). However, among participants with low reflection on negative feelings (-1 *SD* below the sample mean), there was no significant effect of mood on mood improvement ($\beta = -.19$, $t(118) = -1.18$, $p = .241$).

Given the significant interaction effect between the mood condition and the reflection on negative feelings subscale, I tested whether the consumption of snacks mediated the mood improvement experienced by participants in the negative mood condition with high reflection on negative feelings. I ran a moderated mediation with 5,000 bootstrapped samples using model 7 of the PROCESS macro for SPSS on total amount of snacks eaten (Hayes, 2013). Results indicated a significant moderated mediation for the amount of snacks eaten ($\beta = -.07$, with a bias-corrected 95% confidence interval that does not include 0 {-.1922, -.0011}). More specifically, among participants with high reflection on negative feelings, amount of snacks eaten mediated the effect

of negative mood on mood improvement ($\beta = -.11$ with a bias-corrected 95% confidence interval that excludes 0 $\{-.2633, -.0221\}$). However, among participants with low reflection on negative feelings, amount of snacks eaten did not mediate the effect of negative mood on mood improvement ($\beta = .03$, with a bias-corrected 95% confidence interval that contains 0 $\{-.0677, .1646\}$). Hence, these findings suggest that participants in the negative mood condition with chronic tendency to reflect on their negative mood were more likely to experience improvement in their mood because of their increased consumption of snacks.

8.3. Discussion

Engaging in pleasurable eating is a common mood regulation strategy (Thayer et al. 1994), and it has been shown in the literature that people tend to select indulgent food or increase their consumption of such foods under inductions of negative mood, particularly in the service of up-regulating their mood state (e.g., Garg et al. 2007, Tice et al. 2001). The aim of the present study was to demonstrate that the NFB scale is predictive of people's regulatory eating patterns when they experience negative mood. Specifically, it was hypothesized that, compared to a control condition, negative mood would encourage consumption of snacks, and that this effect would be magnified among participants with higher NFB levels. Contrary to this prediction, the NFB full scale did not moderate the expected mood repair effect, which was only directionally consistent and not significant in the current sample.

Investigating moderating effects using the various subscales of NFB led to surprising findings. It was found that higher scores on both the pleasure from negative feelings and reflection on negative feelings subscales (which corresponds to *lower* scores on the NFB full scale) predicted greater eating patterns among participants in the negative (vs. neutral) mood condition. In other words, people who tend to find comfort and dwell in their negative feelings as

well as those who tend to focus and deliberate over the root causes of their negative feelings consumed more snacks when they were induced with negative mood. Clearly, there are numerous goals and unconscious motives that may influence eating behavior. Hence, it is uncertain whether these individuals were indeed consuming these snacks with the specific goal of lifting their mood. Nonetheless, participants with high reflection on negative feelings experienced significant mood improvement after consuming more snacks.

There are several possible explanations for these findings. First, participants who score higher on these two subscales might have been more involved in the taste test given that assessing the taste of different foods is a highly introspective task that would be compatible with the introspective mindsets that these individuals tend to have. Thus, they might have spent more time savoring the food and ended up eating more snacks. To test if this is true, I computed standard deviations scores for participants' taste ratings (within snacks, within types of tastes, and across different snacks and tastes) to examine if there was greater variance among participants with higher pleasure from negative feelings and reflection on negative feelings scores. Apart from a weak positive correlation between reflection on negative feelings and standard deviation scores among the appetizing items across the three different kinds of snacks ($r = .21, p = .021$), there was no indication of greater variance in tastes among participants who tend to derive more pleasure and reflect more on their negative feelings. Nevertheless, the lack of significant findings is insufficient to rule out this possible explanation.

Another possible reason why participants who tend to derive pleasure from negative mood states ate more snacks in the negative mood condition is because these individuals perceived eating junk food as an opportunity to prolong the duration of their negative feelings. Stated differently, they may have viewed indulging in snacks as a chance to engage in self-pity

or to experience guilt from overeating. Correlational analyses performed on the current data revealed a significant positive correlation between pleasure from negative feelings and participants scores on the dieting restraint scale ($r = .20, p = .031$; in particular, participants who gain more pleasure from negative feelings are more likely to report having feelings of guilt after overeating, $r = .22, p = .016$, giving too much time and thought to food, $r = .22, p = .016$, and dieting more frequently, $r = .18, p = .053$). An independent t -test also showed that participants who stated that they were currently on a diet possess higher pleasure from negative feelings scores ($n = 14, M = 2.50$) than those who were not currently on a diet ($n = 107, M = 1.85, t(119) = 2.73, p = .007$). Initial indulgence in snacks during the taste test might have also led these individuals to perceive continued restraint as a lost cause and thus increase their eating behavior, a phenomenon commonly known as the what-the-hell-effect (Polivy and Herman 1985).

A third explanation of why participants who scored high on both the pleasure and reflection subscales consumed more snacks in a negative mood pertains to self-control failure. It is plausible that these individuals experienced greater depletion from the negative mood induction given their stronger propensity to dwell and ponder over their negative feelings. This might have in turn compromised their ability to monitor their consumption and led to disinhibited, automatic eating. Higher cognitive load from focusing on their negative feelings might have also caused them to crave for snack foods which are typically perceived as “quick energy products” and “treats” (Oliver and Wardle 1999).

Although these results are somewhat surprising and it is unclear at the moment what forces are driving them, it is noteworthy that they are consistent with past findings on depression in the clinical psychology literature. For example, it has been found that individuals with depression (vs. non-depressed controls) are likely to consume more food in a negative mood

(Dingemans, Martijn, van Furth, and Jansen 2009). Furthermore, tendency to ruminate in response to depressed mood has also been linked to eating disordered pathology over and above the impact of emotional distress (Gilboa-Schechtman, Avnon, Zubery, and Jeczmiem 2006). In my dissertation, I have found pleasure from negative feelings and reflection on negative feelings to have significant positive associations with depressive symptoms. Further investigation of the current findings and their underlying mechanisms may help uncover psychological factors that account for the relationship between depression and disordered eating patterns.

One limitation of the current study was that participants received snacks as part of a taste test. Hence, they might have viewed the behavior of eating snacks as pursuing an instrumental (vs. pleasurable) goal. Nonetheless, past research on emotional eating (e.g., Dingemans et al. 2009; Tice et al. 2001; Yeomans and Coughlan 2008) has employed the same paradigm to measure mood repair through indulgence in fattening, unhealthy foods. However, unlike in past research, I did not allot a specific duration for the taste test. In other words, participants could spend as much or as little time they desired to complete the taste test. Future replications of this study should include another cover story that does not entail pursuit of an instrumental goal, or fully replicate the procedure used by previous work (i.e., fix a reasonable duration for the taste test across both mood conditions).

The emergence of the significant moderations of pleasure from negative feelings and reflection on negative feelings on the effect of negative mood on snack consumption suggest that the psychological mechanisms, which mediate the effect of negative mood on eating behavior, may be more complicated than previously thought. Although these results are intriguing, it remains uncertain whether these are robust findings. Future replications are therefore needed to determine whether these effects will hold up, and if so, what mechanisms underlie these effects.

CHAPTER 9

STUDY 7: DOES NFB PREDICT MOOD REPAIR VIA UNPLANNED PURCHASING BEHAVIOR?

“Shopping has always been a form of therapy.” (Paco Underhill in Lanier, 2005, p. 175)

As mentioned in the introduction of this dissertation, there appears to be a popular lay belief that shopping is a form of retail therapy. Shoppers often explicitly relate shopping to negative affect (Rook 1987), and engage in self-gifting behaviors to cheer themselves up or reward themselves (Mick and Demoss 1990). Shoppers also engage in impulse shopping when they experience certain moods. Impulse shopping, or immediate buying behavior in response to a sudden and potent urge that arises within the consumer (Beatty and Ferrell 1998; Rook 1987), is spontaneous and reflects a desire to buy without rational consideration of why the consumer should have the product (Rook 1987; Rook and Fisher 1995). In qualitative research, respondents commonly mention the presence of positive mood states like being excited or carefree before they make an impulse purchase (Rook and Gardner 1993). Impulse shopping also commonly takes place when people experience negative mood, likely as an attempt to alleviate the unpleasant mood (Elliott 1994; O’Guinn and Faber 1989; Rook and Gardner 1993).

The present study seeks to investigate how NFB is associated with real world shopping behavior. Given that one way to repair one’s mood is through retail therapy, people with high NFB may be more likely to purchase self-treats that are unplanned. To investigate this possibility, I ran a field study at a supermarket in which shoppers who completed their shopping were approached. In addition to filling out the NFB scale, shoppers who agreed to participate in this study were asked to categorize each of the products they purchased as being planned, spontaneous, etc. I hypothesized that NFB would be positively associated with spontaneous

purchases. Shoppers were also asked to report how positive or negative their prior mood was. Hence, I was able to test whether prior mood interacted with shoppers' NFB levels to determine shopping behavior.

9.1. Procedure

Shoppers who had made purchases were recruited near the check-out counters of Morton Williams, a mid-size supermarket (about 5,000 square feet) located across the street from Columbia University. In order to reduce any extraneous factors that may influence the results, people shopping in pairs or groups and people shopping with children were not sampled. Shoppers were recruited across a variety of time periods over a one-month period. They were told that the researchers were interested in shopping behavior among grocery store shoppers at Morton Williams and were asked if they would like to participate in a 5-minute survey in exchange for a snack of their choice. There were four snack choices, two of which were relatively healthier (a mixed fruits snack and a granola bar) than the other two (peanut butter cups and chocolate candies). A total of 111 shoppers agreed to participate in this study (72 female; mean age = 31).

Once participants agreed to participate, the research assistant told them that there were different types of purchases that people tended to make. In particular, the items people buy can be classified under each of the following categories: 1) Planned purchase – something they knew they would be buying before entering the store; 2) Recalled purchase – something they did not plan to buy in advance, but they remembered that they needed or wanted to buy when they were already in the store; 3) Spontaneous purchase – something they bought spontaneously while they were shopping; 4) Goal-related purchase – something they bought for a particular reason or goal that they knew before entering the store (e.g., thirsty, lunch, something sweet, etc.), but only

figured out what to buy when they were already in the store; 5) Other purchase – something that does not fit into the above categories (e.g., gift, substitute, etc.). The research assistant reviewed each of these categories and their definitions with participants. Then, he asked participants for their receipts and reviewed each item on the receipt with them. Participants classified each of the items they purchased into one of these categories. (NB: The goal-related purchase category was included subsequently after the study had begun running. Hence, data with respect to this category is available for only 96 participants.)

Participants additionally filled out a short survey which included questions concerning their mood before entering the store that day, their satisfaction with the shopping experience, whether their mindset while they were shopping was leisurely or rushed, whether they were shopping for themselves or others, the last time they had their meal, and how much they generally enjoyed shopping. Prior mood before shopping was rated on a 7-point scale where 1 = very bad and 7 = very good, whereas satisfaction and general enjoyment of shopping were rated on a 7-point scale where 1 = not at all and 7 = very/very much. The survey also included demographic questions and questions regarding their patronage and shopping frequency at Morton Williams, as well as the complete NFB scale. To control for potential order effects that could bias participants' responses, the research assistant counterbalanced the order of the classification task and the survey. After participants completed both parts, they made their snack choice and were thanked for their participation in the study.

9.2. Results

Based on participants' receipts, I was able to obtain information about the date and time that the purchases were made, the total number of items that were purchased and the total expenditure. The number of items classified in each category and the proportion of total items

that fell into each category was computed for each participant. The key dependent measures were the number and proportion of items that were categorized as spontaneous purchases.

9.2.1. Preliminary Analyses

Correlational analyses conducted among the NFB, its subscales, prior mood, satisfaction and general enjoyment of shopping revealed significant results (see table 11). Specifically, NFB was marginally correlated with prior mood such that higher NFB was associated with better mood ($r = .17, p = .071$). NFB was also positively associated with shopping satisfaction ($r = .24, p = .013$); people with higher NFB tended to experience more satisfaction while shopping. I also replicated my previous finding that people with higher NFB tend to derive more enjoyment from shopping ($r = .20, p = .032$). Significant results also emerged from correlational analyses conducted between three of these survey measures and participants' purchase data. In particular, prior mood was negatively associated with the number ($r = -.20, p = .035$) and proportion of spontaneous purchases ($r = -.18, p = .064$) that participants made. In other words, more negative mood was related to greater number of spontaneous purchases, which suggests the possibility that participants were buying more spontaneous purchases in response to bad mood. Shopping satisfaction was also negatively associated with the number ($r = -.26, p = .007$) and proportion of spontaneous purchases ($r = -.30, p = .001$) that participants made. Furthermore, I found that prior mood was positively associated with the number ($r = .20, p = .047$) and proportion of goal-related purchases ($r = .27, p = .008$) that participants made, and satisfaction was positively associated with proportion of planned purchases made ($r = .19, p = .048$). Finally, NFB did not predict participants' choice of snack in the current study.

TABLE 11

CORRELATIONS BETWEEN KEY MEASURES AND COVARIATES IN STUDY 7

	Prior Mood	Satisfaction	Enjoy shopping
NFB	.17*	.24**	.20**
Mood repair tendency	.28****	.32****	.27****
Aversion to negative feelings	.10	.18*	.18*
Pleasure from negative feelings	-.09	-.07	.00
Reflection on negative feelings	.00	-.05	-.10
Number of planned purchases	-.04	.07	-.03
Number of recalled purchases	.07	-.02	-.04
Number of spontaneous purchases	-.20**	-.26***	.02
Number of goal-related purchases	.20**	-.04	.13
Number of other purchases	-.10	.00	-.08
Proportion of planned purchases	-.09	.19**	-.10
Proportion of recalled purchases	.07	-.07	-.05
Proportion of spontaneous purchases	-.18*	-.30****	.01
Proportion of goal-related purchases	.27***	.08	.17
Proportion of other purchases	-.08	.02	-.10
Total number of purchases	-.06	-.07	.01
Total expenditure	.03	-.07	.02

NOTE.—Controlling for the order in which the categorization task and survey was conducted did not significantly affect the strength of the correlations reported in this table.

* $p < .1$. ** $p < .05$. *** $p < .01$. **** $p < .005$.

9.2.2. Main Analyses

Based on my hypothesis, I expected people with higher NFB to make more spontaneous purchases. To test this hypothesis, correlational analyses were conducted between NFB (and its subscales) and the number and proportion of items falling into each category, as well as total number of items purchased and amount of expenditure (see table 12). Contrary to my prediction, NFB was negatively associated with the number ($r = -.24, p = .011$) and proportion of spontaneous purchases made ($r = -.27, p = .004$); people with high NFB bought fewer rather than more items spontaneously. Interestingly, results also showed that NFB was positively correlated with number ($r = .22, p = .032$) and proportion of goal-related purchases made ($r = .26, p =$

.011). In other words, people with higher NFB were more likely to enter the store with specific goals but not items in mind, and make their purchase decisions upon entering the store. These significant findings held up even after controlling for order in which the categorization task and survey were conducted, as well as other measures in the survey including prior mood, satisfaction and general enjoyment of shopping. There were no significant relationships between NFB and the other types of items, total number of items purchased and expenditure.³

TABLE 12
CORRELATIONS BETWEEN NFB AND KEY MEASURES IN STUDY 7

	NFB	Mood repair tendency	Aversion to negative feelings	Pleasure from negative feelings	Reflection on negative feelings
Number of planned purchases	.06	-.08	.13	-.06	-.03
Number of recalled purchases	-.05	-.12	-.04	-.12	.10
Number of spontaneous purchases	-.24**	-.18*	-.12	.09	.22**
Number of goal-related purchases	.22**	.23**	-.01	-.21**	-.17
Number of other purchases	-.03	-.02	-.03	-.10	.07
Proportion of planned purchases	.05	-.01	.10	.10	-.10
Proportion of recalled purchases	-.05	-.10	-.03	-.11	.11
Proportion of spontaneous purchases	-.27****	-.21**	-.10	.14	.23*
Proportion of goal-related purchases	.26**	.28***	.00	-.25**	-.16
Proportion of other purchases	-.02	-.10	.00	-.05	.07
Total number of purchases	-.01	-.11	.04	-.09	.05
Total expenditure	-.08	-.11	-.05	-.06	.08

NOTE.—Controlling for the order in which the categorization task and survey was conducted did not significantly affect the strength of the correlations reported in this table.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .005$.

³ To investigate whether the pleasurable nature of the spontaneous purchases would influence participants' shopping behavior, two independent raters classified each product participants purchased as "hedonic," "utilitarian," or "either hedonic or utilitarian" (e.g., unspecified grocery items; Kappa = .72; disagreements were resolved through discussion). Hedonic products (e.g., chocolates, flavored soda) are those that are consumed primarily for pleasure and sensory enjoyment, whereas utilitarian products (e.g., skim milk, painkillers) are those that are used to attain practical or instrumental goals (Strahilevitz and Myers 1998). The number of hedonic purchases as well as the number of hedonic purchases that were spontaneously acquired was computed for each participant. Correlational analyses revealed non-significant correlations between NFB and number of hedonic purchases ($r = -.04, p = .716$), and between NFB and number of purchases that were both hedonic and spontaneous ($r = -.14, p = .177$). Regression analyses using NFB, prior mood and their interaction term as predictors did not lead to any significant findings. (The same set of analyses using utilitarian purchases as the dependent variable also led to null results.)

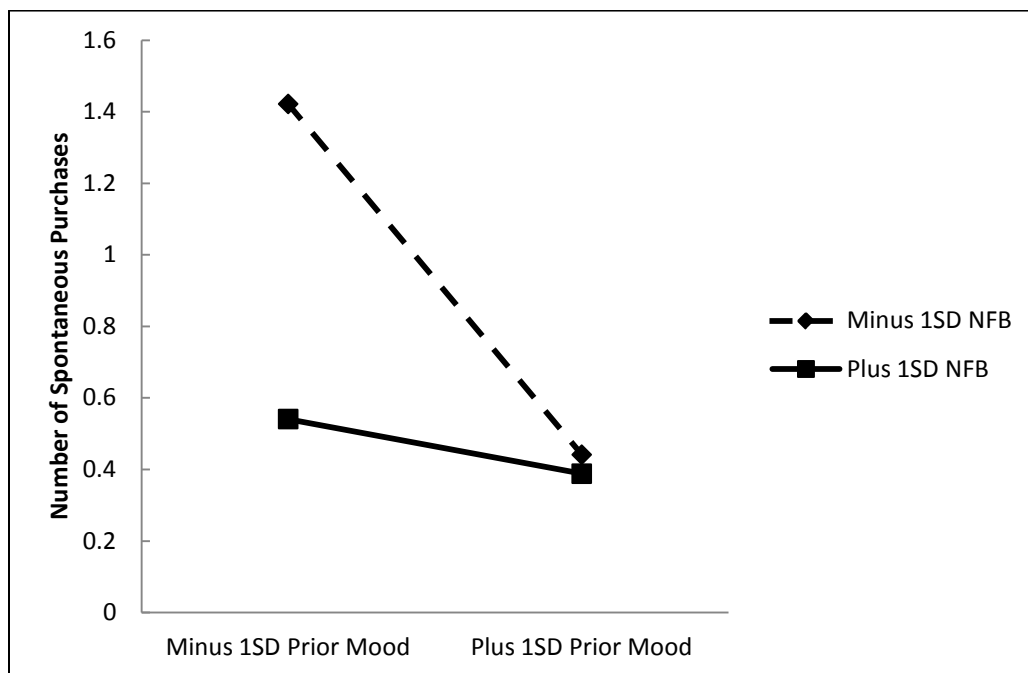
To investigate whether NFB interacted with prior mood to influence participants' purchasing behavior, I ran a regression analysis including mean-centered NFB, mean-centered prior mood and their interaction term as predictors as well as order of categorization task and survey, satisfaction and general enjoyment of shopping as covariates on the various purchase measures. I obtained significant effects on the number of spontaneous items shoppers purchased. In particular, there was a marginally significant main effect of NFB ($\beta = -.35$, $t(102) = -1.95$, $p = .055$) and a significant main effect of prior mood ($\beta = -.21$, $t(102) = -2.20$, $p = .03$) that was qualified by a marginally significant interaction effect between prior mood and NFB ($\beta = .24$, $t(102) = 1.92$, $p = .057$; see figure 10). Subsequent spotlight analyses conducted at +1 *SD* above the sample mean of NFB and -1 *SD* below the sample mean of NFB demonstrated that among shoppers with high NFB, there was no significant effect of prior mood on number of spontaneous purchases ($\beta = -.06$, $t(102) = -.48$, $p = .63$). However, among shoppers with low NFB (-1 *SD* below the sample mean), there was a significant effect of prior mood such that shoppers who were experiencing poorer moods purchased more spontaneous items ($\beta = -.37$, $t(102) = -2.78$, $p = .007$).

The same regression analysis conducted with mean-centered aversion to negative feelings scores instead of mean-centered NFB scores led to similar effects on number of spontaneous purchases. A significant interaction effect between prior mood and NFB emerged ($\beta = .16$, $t(102) = 2.31$, $p = .023$). Subsequent spotlight analyses conducted at +1 *SD* above the sample mean of aversion to negative feelings and -1 *SD* below the sample mean of aversion to negative feelings demonstrated that among shoppers with high aversion to feelings, there was no significant effect of prior mood on number of spontaneous purchases ($\beta = -.01$, $t(102) = -.11$, $p = .914$). However, among shoppers with low aversion to negative feelings (-1 *SD* below the sample mean), there

was a significant effect of prior mood such that shoppers who were experiencing poorer moods purchased more spontaneous items ($\beta = -.40, t(102) = -3.13, p = .002$). Hence, the pattern of the interaction effect between prior mood and aversion to negative feelings was similar to that between prior mood and NFB. Interestingly, shoppers who had lower NFB, in particular aversion to negative feelings, were more likely to purchase items spontaneously when they experienced relatively poorer moods.

FIGURE 10

STUDY 7: THE EFFECT OF PRIOR MOOD AND NFB ON NUMBER OF SPONTANEOUS PURCHASES



9.3. Discussion

Study 7 aimed to investigate how people's NFB levels are associated with their shopping behavior in a real-world setting. I examined whether NFB would predict shoppers' tendency to make unplanned, spontaneous purchases. Contrary to my expectation that individuals with higher NFB would buy more products spontaneously, they made *fewer* of such purchases. Furthermore,

shoppers' NFB levels interacted with their prior mood to predict shoppers' purchases of spontaneous items. Specifically, low-NFB shoppers who entered the store with poorer mood purchased more items spontaneously, and this pattern was driven largely by their lower aversion to negative feelings.

Why might shoppers with low NFB make more spontaneous purchases than shoppers with high NFB? One possible reason is that high-NFB shoppers might have been avoiding such purchases to maintain a positive mood (preliminary correlational analyses showed a positive correlation between NFB and prior mood) or preempt potential feelings of guilt that are associated with impulse purchases, whereas low-NFB shoppers were less concerned about how spontaneous purchases might affect their subsequent mood. An interesting implication that follows from this explanation is that people with high NFB may avoid indulgent behaviors that provide immediate gratification but produce subsequent guilt or regret. Future research could examine how NFB affects the way people weigh short term versus long term happiness and satisfaction. Currently, it is also uncertain why shoppers with low NFB would make more spontaneous purchases when they experience poorer mood. Perhaps negative mood served as a signal of threat in the environment and therefore triggered spontaneous buying behavior in response to perceived threat.

The present study had some limitations. First, all the measures in the study were based on self-reports by participants. Hence, these measures were subject to biased reporting (e.g., shoppers may want to think of themselves as rational shoppers). Perhaps high-NFB participants were less likely to report making spontaneous purchases because they wanted to feel better about themselves. Although the term "spontaneous" was used in place of "impulse" in order to reduce any unpleasant connotation, they might have nonetheless perceived spontaneous purchases to be

vices. In addition, initial responses on the NFB might have affected participants' responses on the classification task, and vice versa. Even though the order in which these tasks were administered was controlled for in the analyses, responses on the initial task might have nonetheless influenced responses on the subsequent task. Another limitation of the current study pertains to the specific context (i.e., supermarket) in which it was conducted. It is uncertain whether these findings may hold up in another type of retail context (e.g., departmental store).

CHAPTER 10

STUDY 8: USING NFB TO REVISIT THE EFFECTS OF MOOD ON

AUTOBIOGRAPHICAL RECALL

Since the 1980s, researchers have been investigating how mood affects people's retrieval of memories. One prominent finding by Bower (1981) is that following a mood induction, people tend to retrieve memories of similar valence to their induced mood state (e.g., a negative mood would lead to the retrieval of unpleasant memories; c.f. Isen, Shalke, Clark, and Karp 1978). Other researchers have also demonstrated trait-mood effects (e.g., people with depressive symptoms tend to report more unpleasant memories; Blaney 1986; Matt, Vasquez, and Campbell 1992). Bower (1981) argued that this mood-congruency effect occurs because of our associative network of memories. At the time when people store their memories, they may experience certain positive or negative mood states. When a particular mood state becomes activated, it cues the retrieval of memories associated with that mood. Hence, during negative mood, unpleasant thoughts and memories come easily to mind, whereas during positive mood, pleasant thoughts and memories are more readily accessed.

There have been replications of the mood-congruency effect in people's recall of past memories (e.g., Singer and Salovey 1988). However, some studies have uncovered the opposite effect: negative mood facilitates the retrieval of pleasant memories (e.g., Parrott & Sabini, 1990; Rusting, 1998). Parrott and Sabini (1990) found that participants in a negative mood were more likely to recall positive memories (e.g., from the past week or from high school) than those in a positive mood. Researchers have proposed that this mood-incongruency effect emerges because people are motivated to regulate their negative moods by thinking of positive memories from their past (Isen 1985, 1987; Josephson, Singer, and Salovey 1996; Parrott and Sabini 1990). Isen

(1985, 1987) also suggested that people attempt to maintain positive moods by thinking about pleasant events, that is, engage in behaviors that support mood maintenance.

To reconcile these contradictory findings, researchers have identified situational variables as well as individual differences known to influence people's ability and/or motivation to engage in mood regulation that determine when mood-congruence or mood-incongruency effects arise. For instance, Rusting and DeHart (2000) demonstrated that participants instructed to engage in positive reappraisal of the induced negative mood were more likely than those instructed to focus continually on the induced negative mood and control participants to recall more pleasant memories. They also showed that this difference held up among participants with higher scores on the NMR (Catanzaro and Mearns, 1990; individuals who tend to expect that their efforts at negative mood regulation will be successful) but not those with lower scores on the NMR. Other work has shown that these effects are moderated by self-esteem (Smith and Petty 1995), tendency to repress versus acknowledge one's mood (McFarland & Buehler 1997), dysphoria (Joorman and Siemer 2004), as well as instructions to engage in rumination (Lyubomirsky, Caldwell, & Nolen-Hoeksema 1998). These findings suggest that NFB may also play a significant role in people's retrieval of mood-congruent versus mood-incongruent memories.

To test whether the NFB scale would moderate the effect of mood on the valence of recalled memories, I ran a two-part study using participants from Amazon's Mechanical Turk. In the first part, participants were asked to provide their responses to the NFB scale. In the second part, I ran a single-factor between-subjects experiment in which participants were induced with negative, neutral or positive mood. After this mood induction, they were instructed to recall memories from their childhood. I hypothesized that individuals with low NFB would be more likely to display the mood-congruency effect after a negative mood induction given their low

motivation to regulate their negative mood. That is, they would retrieve more unpleasant memories in a negative mood than a neutral mood. They may do so because of their associative network of memories or because they like to focus on and/or dwell in their negative mood states. On the other hand, individuals with high NFB would be more likely to display the mood-incongruity effect in a negative mood. That is, they would retrieve more pleasant memories in a negative mood than a neutral mood to regulate their negative mood. It is less certain how NFB would affect people's recall of memories in the positive mood condition. Low-NFB individuals may retrieve more pleasant memories following the positive (vs. neutral) mood condition if the associative network model applies to them. High-NFB individuals may also retrieve more pleasant memories if they are motivated to maintain their positive mood.

10.1. Procedure

Eight hundred participants from Amazon's Mechanical Turk filled out a qualification survey containing the NFB scale ($\alpha = .86$) for 10-cents. Seven hundred and forty of them were contacted to participate in a follow-up survey; sixty of them failed the attention check question in the qualification survey and thus were not contacted for the follow-up study. Two hundred and fifty-six participants (139 female; mean age = 37) responded to the follow-up survey and were paid \$1 for their participation.

In the follow-up survey, participants were randomly assigned to a negative ($n = 88$), neutral ($n = 86$) or positive ($n = 82$) mood condition. They were told that they would be participating in several unrelated studies on people's imagination and memory. In the first section of the survey, participants completed the same mood manipulation task that was employed in the ad appeal validation study (study 5). Participants in the positive mood condition watched a scene from the motion picture *When Harry Met Sally* that has been used in previous

research to induce positive mood (Converse, Lin, Keysar, and Epley 2008). After this task, participants rated their current mood as a manipulation check on two 7-point bipolar scales where 1= unpleasant/bad mood and 7= pleasant/good mood. These scores were averaged to form a mood index ($r = .96$).

Next, participants proceeded to perform the autobiographical recall task. In particular, they were asked to recall five childhood (i.e., before age 15) events that happened to them, and to imagine that these events were happening to them at that moment. Participants briefly described each of these five memories, and then rated each of these memories on a 9-point scale where -4 = extremely unpleasant, 0 = neutral, +4 = extremely pleasant. After rating their memories, participants rated their current mood using the same scales for the manipulation check, how much they enjoyed the task on a 7-point scale where 1 = did not enjoy it at all and 7 = enjoyed it very much, and how involved they felt in performing the task on a 7-point scale where 1= felt very uninvolved and 7 = felt very involved. Finally, they filled out the Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, and Swann 2003), a brief measure of the Big Five personality traits, a question on whether they had a history of clinical depression, as well as some demographic questions. The Big Five and depression questions were included because previous research has shown that neuroticism and depression may influence mood congruency effects in autobiographical recall tasks (Bradley, Mogg, Galbraith, and Perrett 1993; Joormann and Siemer 2004; Lyubomirsky, Caldwell, and Nolen-Hoeksema 1998).

10.2. Results

10.2.1. Manipulation Check

Seventeen participants failed the attention check and were thus removed from the sample. Responses on the mood manipulation check questions was submitted to a multiple linear

regression with two mood condition contrast codes (contrast 1 is coded such that negative mood = -2, neutral mood = 1, and positive mood = 1; contrast 2 is coded such that negative mood = 0, neutral mood = -1, and positive mood = 1), mean-centered NFB scores from the qualification survey, and the two interaction terms between each contrast code and mean-centered NFB scores as predictors. There was a significant main effect of contrast 1 such that participants in the negative mood condition experienced more unpleasant and bad mood ($M = 4.15$) compared to the participants in both the neutral mood condition and the positive mood condition ($M = 5.93$, $\beta = .65$, $t(224) = 11.56$, $p < .001$). However, the main effect of contrast 2 was not significant ($\beta = -.04$, $t(224) = -.43$, $p = .665$); in other words there was no significant difference in mood between the neutral and positive mood conditions, suggesting that the positive mood manipulation was ineffective in lifting one's mood. Both of the interaction terms were not significant.

10.2.2. Valence of Memories Recalled

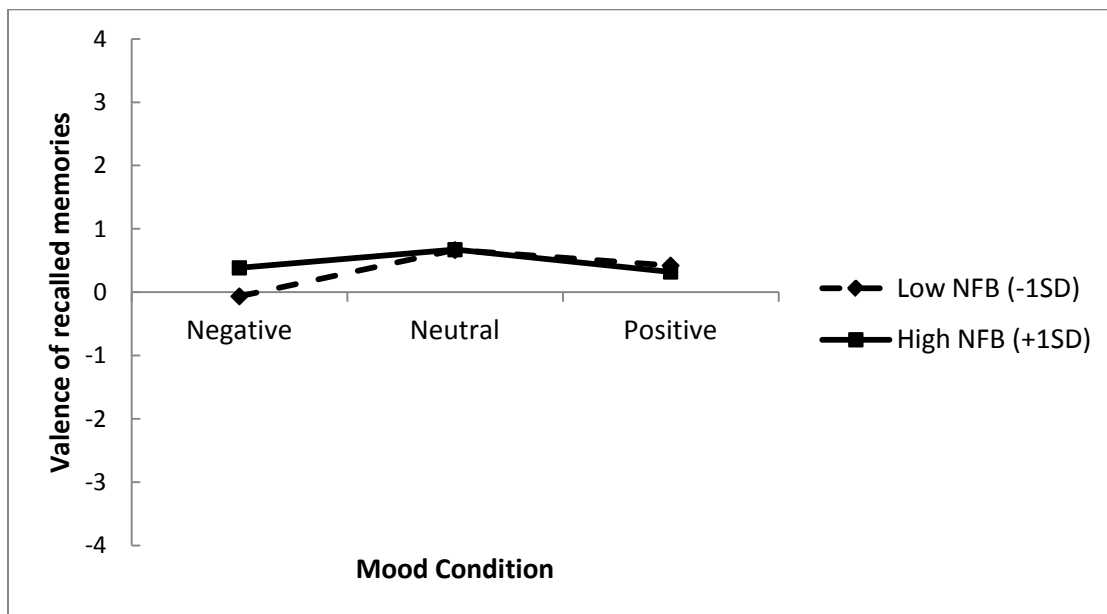
In line with procedures employed by Rusting and DeHart (2000), participants' ratings for each memory were averaged to form an overall negativity-positivity index for the memories. A one-way ANOVA performed on this index revealed a non-significant difference in valence of memories across the three mood conditions ($F(2, 236) = 1.12$, $p = .329$). A subsequent contrast analysis (negative mood = -2, neutral mood = 1, and positive mood = 1) indicated a directionally consistent but non-significant mood congruency effect whereby participants in the negative mood condition tended to recall less positive valence memories compared to those in the neutral and positive mood conditions ($t(236) = 1.27$, $p = .206$).

To test the hypothesis that high-NFB (low-NFB) individuals would be more likely to exhibit the mood incongruency (congruency) effect, index scores were submitted to a multiple linear regression with two mood condition contrast codes (contrast 1 is coded such that negative

mood = -2, neutral mood = 1, and positive mood = 1; contrast 2 is coded such that negative mood = 0, neutral mood = -1, and positive mood = 1), mean-centered NFB scores from the qualification survey, and the two interaction terms between each contrast code and mean-centered NFB scores as predictors. A marginally significant effect of contrast 1 emerged ($\beta = .15, t(224) = 1.84, p = .067$) whereby participants in the negative mood condition tended to recall more negative memories than those in the neutral and positive mood conditions. There was also a non-significant interaction effect between contrast 1 and NFB ($\beta = -.17, t(224) = -1.38, p = .169$), which remained non-significant but became stronger after controlling for depression and neuroticism ($\beta = -.19, t(221) = -1.54, p = .126$; see figure 11).

FIGURE 11

STUDY 8: THE EFFECT OF MOOD CONDITION AND NFB ON VALENCE OF MEMORIES RECALLED



To examine the pattern of this interaction, a spotlight analysis was conducted at +1 *SD* above the sample mean and -1 *SD* below the sample mean with depression and neuroticism as covariates.

Among participants with high NFB (+1 *SD* above the sample mean), there was no significant

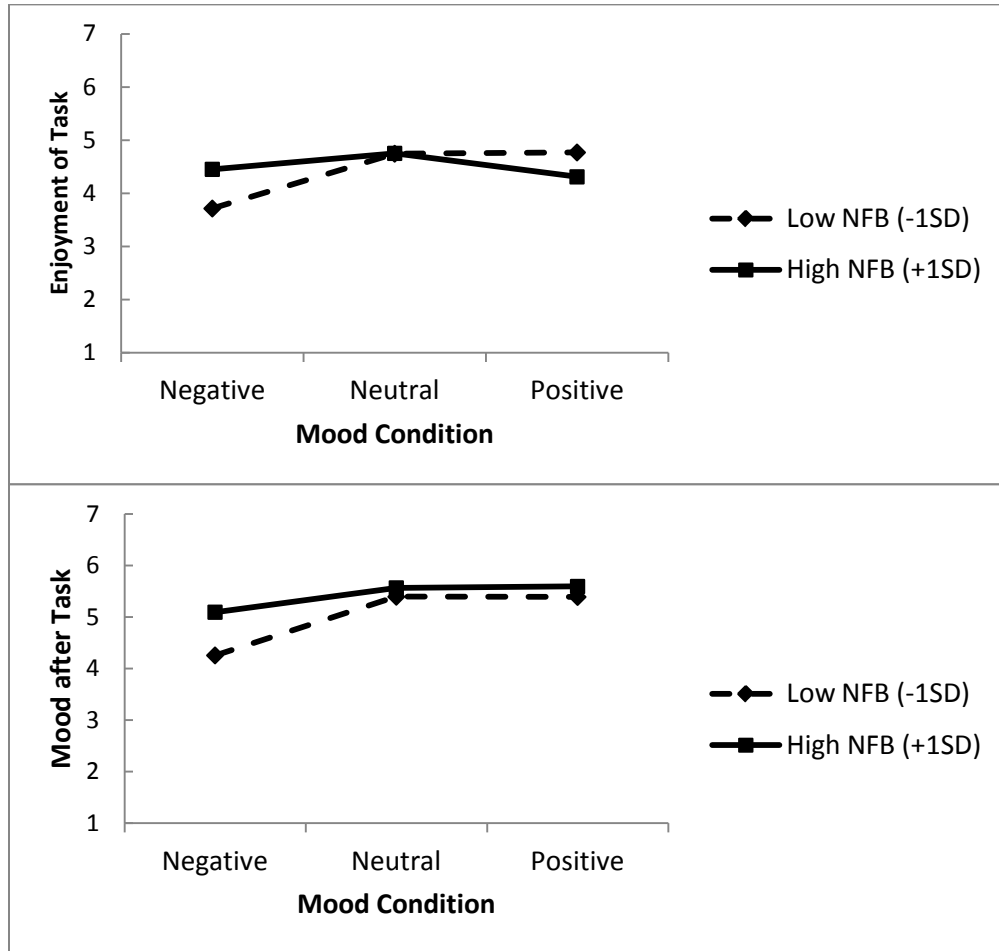
effect of contrast 1 on valence of recalled memories ($\beta = .01, t(221) = .05, p = .957$). However, among participants with low NFB ($-1 SD$ below the sample mean), those induced with negative mood recalled more negative memories than those induced with neutral mood and positive mood ($\beta = .26, t(118) = 2.10, p = .037$). These findings partially support my hypothesis. Although high-NFB individuals were not more likely to recall mood incongruent memories, low-NFB individuals were more likely to recall mood congruent memories.

10.2.3. Experience of the Recall Task

To examine whether the mood induction and NFB had an effect on participants' experience of the recall task, participants' enjoyment of the task was regressed on the same predictors and covariates in the same multiple linear regression analysis that was conducted for valence of memories recalled. A significant main effect of contrast 1 emerged ($\beta = .20, t(221) = 2.33, p = .021$) whereby participants in the negative mood condition enjoyed the task less than those in the neutral and positive mood conditions. However, this main effect was qualified by a significant interaction between contrast 1 and mean centered NFB scores ($\beta = -.27, t(221) = -2.18, p = .03$; see figure 11, upper panel). Among participants with high NFB, there was no significant main effect of contrast 1 ($\beta = .02, t(221) = .14, p = .888$). Among participants with low NFB, those in the negative mood condition enjoyed the task less than those in the neutral mood and positive mood conditions ($\beta = .38, t(221) = 3.05, p = .003$). I conducted the same multiple regression analysis on participants' mood after completing the recall task. The analysis revealed a significant main effect of contrast 1 such that participants in the negative mood condition experienced more unpleasant and bad mood than those in the other two conditions ($\beta = .29, t(221) = 4.30, p < .001$). There was also a significant main effect of NFB such that participants with higher NFB experience more pleasant and good mood following the recall task

FIGURE 12

STUDY 8: THE EFFECT OF MOOD CONDITION AND NFB ON 1) ENJOYMENT OF TASK (UPPER PANEL)
AND 2) MOOD AFTER TASK (LOWER PANEL)



($\beta = .38, t(221) = 2.68, p = .008$). These two main effects were qualified by a significant interaction effect between contrast 1 and NFB ($\beta = -.25, t(221) = -2.55, p = .012$; see figure 12, lower panel). Specifically, there was no effect of contrast 1 among participants with high NFB ($\beta = .12, t(221) = 1.35, p = .177$). However, among participants with low NFB, those in the negative

mood condition experienced more unpleasant and bad mood after the recall task than those in the neutral mood and positive mood conditions ($\beta = .46, t(221) = 4.63, p < .001$).⁴

10.3. Discussion

The current study was aimed at testing whether NFB would moderate mood state dependent memory recall. I hypothesized that after a negative (vs. neutral) mood induction, low-NFB participants would be more likely to retrieve mood-congruent memories but high-NFB would be more likely to retrieve mood-incongruent memories. Results partially supported my hypothesis. Among low-NFB participants, those induced with negative mood recalled less pleasant memories than those induced with neutral and positive mood. However, among high-NFB participants, there was no difference in valence of memories across the mood conditions. Because the positive mood manipulation was unsuccessful, conclusions regarding how NFB influences people's recall of memories in a positive mood cannot be made.

It is plausible that low-NFB participants retrieved more unpleasant memories in a negative mood state because of their associative memories or simply because of their low motivation to engage in mood repair (i.e., they prefer to perpetuate their negative feelings). The latter explanation is consistent with past research indicating that people with a propensity to focus repeatedly on their distress (i.e., individuals with a ruminative orientation; Nolen-Hoeksema, 1991) tend to display more mood-congruent cognitions (McFarland and Buehler 1998). Nonetheless, the current data do not allow me to tease apart these two explanations.

⁴ Regressing participants' involvement scores on the same set of variables led to a marginally significant main effect of NFB such that higher NFB scores were associated with greater involvement in the recall task ($\beta = .24, t(221) = 1.90, p = .059$). Importantly, this main effect was qualified by a marginally significant interaction between contrast 1 and NFB ($\beta = -.16, t(221) = -1.83, p = .068$). Among high-NFB participants, there was a directional but non-significant effect of contrast 1 such that those in the negative mood condition were more involved than those in the neutral mood and positive mood conditions ($\beta = -.12, t(221) = -1.56, p = .119$). Among the low-NFB participants, the same contrast was not significant ($\beta = .09, t(221) = 1.03, p = .303$).

Although high-NFB participants were not more likely to engage in mood-incongruent recall, they did recall more positive memories compared to low-NFB participants. It is possible that high-NFB participants were trying to override the accessibility of negative memories as seen in their greater involvement in the autobiographical recall task (refer to footnote 3). Furthermore, they may not have perceived retrieval of positive memories to be a dominant mood repair strategy. Perhaps making the choice to recall pleasant versus unpleasant memories more salient to high-NFB participants could have increased their use of this strategy. Consequently, high-NFB participants in the current study did experience greater enjoyment and positive feelings following the recall task relative to low-NFB participants, suggesting that they might have engaged in some mood repair.

One obvious limitation of the current study is the ineffectiveness of the positive mood manipulation. As a result, I was unable to test the mood-congruency hypothesis and the mood maintenance hypothesis with respect to positive mood. Another limitation of this study is the use of self-report measures, in particular, participants' valence ratings of their memories. Such ratings may be subject to response biases like self presentation concerns. Future studies should employ other means that are less susceptible to these biases (e.g., memory latency measure; Wisco and Nolen-Hoeksema 2010) to test the hypotheses. Future research could also investigate how NFB may moderate mood congruency and mood incongruency effects in a variety of cognitive operations including selective attention and self-perception (e.g., Bower 1981; McFarland and Buehler 2012). It would also be interesting to test whether these cognitive processes of mood repair operate automatically or under strategic control.

Past research has yielded contradictory findings with respect to the effect of mood on autobiographical recall, with some studies showing stronger mood-congruency effects and others

documenting stronger mood-incongruency effects. This had led researchers to identify moderators that determine the relative strength of these two types of phenomena. The current study contributes to this research by investigating another possible moderator of these effects, NFB. Findings from the current study suggest that individuals with low NFB experiencing negative moods may perpetuate or exacerbate these feelings by thinking about unpleasant thoughts and memories. Individuals with high NFB on the other hand seem to be less susceptible to this cycle.

CHAPTER 11

GENERAL DISCUSSION

In this dissertation, I provided empirical evidence for the construct, the “Need to Feel Better.” This construct challenges the assumption that people have a universal tendency to want to feel better and that people necessarily attempt to repair their mood when they feel bad. I propose that people differ in the way they need to feel better in four ways: their general tendency to engage in mood repair behaviors, the aversion they have toward negative feelings, the pleasure they gain from these feelings, and their inclination to reflect on these feelings as opposed to doing something to feel better. To this end, I constructed a scale that captures these differences, and demonstrated that it possesses a clear and stable factor structure, good construct validity, and acceptable test-retest reliability (study 1, Chapter 3). Using the scale I developed, I found that NFB is related to various affective and self-regulation constructs, personality and lifestyle variables, parental upbringing, cultural and national identity, values, and psychological well-being (studies 2-4, Chapters 4-6). Furthermore, as shown in studies 3 and 4 (Chapters 5 and 6), scores on the NFB scale predict people’s tendency to engage in mood repair when they experience negative mood. Specifically, people with high NFB are more likely to consume positive media content when they are in a bad (vs. neutral) mood, whereas people with low NFB do not exhibit the same tendency. Importantly, the NFB scale appeared to have better predictive ability compared to existing mood repair scales (i.e., TMMS mood repair subscale and the NMR). In addition, I obtained preliminary evidence that the NFB predicts people’s preferences for products that are marketed using advertising appeals that emphasize the attainment of happiness independent of their existing mood states (see study 5, Chapter 7). To investigate whether NFB predicts mood repair via consumption behaviors, I tested whether people with

higher NFB would be more likely to consume indulgent snacks under a negative mood (study 6, Chapter 8) and make more spontaneous purchases at a supermarket (study 7, Chapter 9).

Although I did not obtain support for these hypotheses, the results that emerged provide new theoretical perspectives concerning consumption under negative mood states. For example, in study 6, participants who tend to derive more pleasure from negative feelings were more likely to indulge in unhealthy snacks when they were induced with negative mood, suggesting the possibility that these individuals were motivated to consume more snacks for reasons other than mood repair. Finally, using the NFB scale, I revisited the effect of mood on autobiographical recall and found that NFB predicts the extent to which people recall unpleasant memories when they experience negative mood (study 8, chapter 10). Specifically, people with low NFB appeared to be more susceptible to the mood-congruency effect in the context of autobiographical recall.

11.1. Contributions of the Current Research

11.1.1. Contribution to Theory Development

The development of our construct may help to account for inconsistent findings in the mood repair literature. Although earlier studies have provided evidence that people tend to engage in mood repair when they experience negative mood, recent studies have not been able to replicate this finding or find it to be less robust than previously thought. There is an emerging consensus that mood repair occurs only when certain conditions are present (e.g., individuals must view mood as dynamic; Andrade 2005). My findings suggest that people must possess sufficient motivation to feel better in order for them to engage in mood repair, and extends current understanding of why individuals are not motivated to terminate their negative mood and continue to remain in it. For example, individuals who do not find negative feelings aversive are

less motivated to regulate these feelings. The development of the NFB scale could also allow us to tease apart mood-congruency and mood-incongruency effects in the literature. For example, in study 8 (chapter 10), I found that participants with low but not high NFB were susceptible to the mood-congruency effect (low-NFB participants were more likely to recall unpleasant memories in a negative versus neutral mood).

My dissertation also highlights significant limitations of treating consumption under negative mood as a surrogate for mood repair. As shown in studies 6 and 7 (Chapters 8 and 9), it is not always the case that people consume more when they experience negative mood states, and even if they do, the consumption of pleasure or heightened consumption in general may be motivated by reasons other than mood repair. Furthermore, people may perceive consumption behaviors as a temporary fix with undesirable ramifications in the long run, and therefore choose to avoid these behaviors to preempt subsequent negative feelings (see study 7, section 9.3). The NFB construct enables us to determine whether people's behaviors under negative moods are indeed driven by hedonic motives to repair mood.

11.1.2. Contribution to Managerial and Consumer Welfare Implications

The NFB scale allows us to identify people who differ in their motivation to feel better, and to understand the profile of these different groups of individuals. In my dissertation, I found that certain demographic groups (e.g., female consumers, elderly people) tend to have higher NFB (study 2, chapter 4). NFB is also associated with a variety of cultural, personality and lifestyle variables. For example, individuals who identify strongly with individualistic cultures (people with strong American identities), were raised by affectionate parents, and espouse more traditional and religious values tend to have higher NFB (studies 2-4, Chapters 4-6). Having a broader understanding of consumer segments with both high and low NFB levels would enable

marketers to be more effective in their targeting strategies for “feel-good” products and mood-lifting advertisement appeals. As suggested by preliminary evidence from study 5 (Chapter 7), marketers could target appeals that emphasize happiness at segments that possess higher NFB. Additionally, understanding the psychological profiles of high- and low-NFB consumers could allow marketers to create fit between NFB and the type of products or offerings that would appeal to them. For example, products related to certain individual differences associated with NFB (e.g., promotion focus, conscientiousness) could be marketed to high-NFB consumers using mood-lifting advertisement appeals. The NFB scale would therefore be beneficial in helping marketers develop and test practical suggestions for implementing segmentation.

Findings from studies 6 and 7 suggest that people may consume more unhealthy snacks and make more spontaneous purchases when they experience negative mood because of their tendency to dwell and reflect on their negative feelings and their intolerance of negative feelings. Exploring interventions that limit these practices is imperative when engaging in these behaviors becomes detrimental for consumers (e.g., overeating, spending impulsively, etc.). Interventions that prevent consumers from ruminating and wallowing in their negative moods may help prevent binge-eating of unhealthy foods. In addition, interventions that manipulate consumers’ aversion toward negative feelings (e.g., heightening the salience of potential guilt and pain from overspending) may be useful in curbing impulse purchasing. Consequently, designing interventions based on each facet of NFB could help decrease or even increase people’s engagement in various consumption behaviors (e.g., increasing consumers’ mood repair tendencies could encourage them to shop more). Furthermore, given evidence that people with high NFB tend to experience greater positive affect and subjective well-being, interventions that motivate low-NFB individuals to repair their mood may increase their life satisfaction. In

addition, tendency to derive pleasure from negative feelings and tendency to reflect on negative feelings emerged as significant predictors of depression, anxiety and stress symptoms (study 2, section 4.4). Hence, further investigation of these relationships may illuminate the etiology of mood and anxiety disorders and lead to the development of effective treatments.

11.2. Limitations and Future Research Directions

There are several limitations pertaining to the NFB construct. First, NFB has been tested mainly as a trait as opposed to a state. In future research, I aim to design interventions specific to each facet of NFB, and examine whether these interventions would manipulate people's desire to feel better and hence engage in mood repair activities.

Second, in my dissertation, I defined feeling "better" as a general positive affective state and tested how individuals with high NFB react towards a general negative mood state. It remains uncertain whether NFB would generalize to the regulation of content-specific emotions such as anxiety and anger. A future research direction would be to test whether NFB applies to general moods, to specific emotional states, or both. To the extent that it generalizes to specific emotional states, interventions can be targeted at high-NFB consumers who experience specific emotions (e.g., policies for compensating angry customers from high-NFB segments).

Additionally, I did not distinguish between feeling better in the moment (e.g., pleasure from enjoyable activities) versus a meta-level of feeling better (e.g., feeling effective from exerting control). The latter refers to motivational states that upon fulfillment may lead to a positive state of satisfaction. Future research should examine whether NFB extends to specific emotional and motivational states. Related to this, it would be interesting to test whether different mood repair strategies have different properties—for example, consuming high-caloric foods might bring forth immediate visceral pleasure, whereas listening to happy music may require more cognitive

participation for pleasure to be derived from—and whether high-NFB individuals would be sensitive to these differences. It would also be interesting to investigate how NFB is related to different kinds of happiness defined in the literature (e.g., hedonic wellbeing which consists of happiness from instant gratification vs. eudaimonic wellbeing which consists of happiness that comes from working toward greater good; Ryan and Deci 2001).

Third, the NFB scale does not encompass individuals' strategic attempts to remain in a negative mood. For example, people may choose to be angry to perform better in confrontations (Tamir and Ford 2012). Also, the NFB scale does not include people's attempts to counteract distressful negative states with less distressful negative states in order to feel better. For example, people may engage in defensive pessimistic thinking in relation to an uncertain outcome to reduce their levels of anxiety (Norem and Cantor 1986), or they may combat fear and uncertainty about their future with anger (e.g., the Occupy Wall Street protests).

Several unexpected findings in the current dissertation warrant further investigation. First, contrary to my prediction that high-NFB participants would consume more unhealthy snacks under a negative mood, I found that participants with a greater chronic tendency to derive more pleasure and reflect on negative feelings (which would lead to lower levels of NFB) ate more snacks when they were induced with a negative mood (see Chapter 8). Second, I obtained a significant negative association between NFB and number of spontaneous purchases, which was the direct opposite of my initial hypothesis (see Chapter 9). It is uncertain whether individuals who engaged in greater consumption or buying behavior in these studies were doing so to strategically repair their moods. In other words, they might have been motivated by other conscious or unconscious goals. Possible explanations for these results (e.g., intentional prolonging of negative affect such as guilt from consuming unhealthy snacks) have been raised

in sections 8.3 and 9.3. In future research, I plan to replicate these findings and test these alternative accounts. I would also like to introduce interventions that are related to particular mental models or lay beliefs (e.g., consuming certain foods can boost one's levels of endorphins and increase happiness), and test whether these interventions would interact with NFB to determine consumption behavior.

In future research, I would also like to investigate whether high-NFB individuals would engage in preemptive mood repair strategies in response to anticipated future mood-states. For instance, would a sales representative with high NFB be more likely to schedule a vacation after a busy peak sales period? In addition, I would like to attain greater understanding regarding the antecedents of NFB. Preliminary findings from my dissertation suggest that culture and parenting are factors that may contribute to one's NFB. I would like to explore these factors in greater depth (e.g., how NFB differs across countries) and uncover other possible antecedents in the future.

REFERENCES

- Andrade, Eduardo B (2005), "Behavioral Consequences of Affect: Combining Evaluative and Regulatory Mechanisms," *Journal of Consumer Research*, 32 (December), 355-362.
- Andrade, Eduardo B. and Joel B. Cohen (2007), "Affect-Based Evaluation and Regulation as Mediators of Behavior: The Role of Affect in Risk-Taking, Helping and Eating Patterns," in *Do Emotions Help or Hurt Decision Making: A Hedgfoxian Perspective*, ed. Kathleen Vohs, Roy Baumeister, and George Loewenstein, New York: Russell Sage, 35–68.
- Areni, Charles S., and Mitchell Burger (2008), "Memories of "Bad" Days Are More Biased Than Memories of "Good" Days: Past Saturdays Vary, but Past Mondays Are Always Blue," *Journal of Applied Social Psychology*, 38(6), 1395-415.
- Arnold, Mark J., and Kristy E. Reynolds (2009) "Affect And Retail Shopping Behavior: Understanding The Role Of Mood Regulation And Regulatory Focus," *Journal of Retailing*, 83(3), 308-20.
- Augustine, Adam A., Scott H. Hemenover, Randy J. Larsen, and Tirza E. Shulman (2010), "Composition and Consistency of the Desired Affective State: The Role of Personality and Motivation," *Motivation and Emotion*, 34(2), 133-43.
- Baumann, Donald J., Robert B. Cialdini, and Douglas T. Kenrick (1981), "Altruism as Hedonism: Helping and Self-Gratification," *Journal of Personality and Social Psychology*, 40 (6), 1039-1046.
- Baumeister, Roy F., Todd F. Heatherton, and Diane M. Tice (1994), *Losing Control: How and Why People Fail at Self-Regulation*. San Diego: Academic Press, Inc.
- Bazerman, Max H., George F. Loewenstein, and Sally Blount White (1992), "Reversals of Preference in Allocation Decisions: Judging an Alternative versus Choosing among

- Alternatives,” *Administrative Science Quarterly*, 37, 220-40.
- Beatty, Sharon E. and M. Elizabeth Ferrell (1998), “Impulse Buying: Modeling Its Precursors,” *Journal of Retailing*, 74 (2), 169–91.
- Blaney, Paul H. (1986), “Affect and Memory: A Review,” *Psychological Bulletin*, 99 (2), 229-46.
- Boehm, Julia K., and Laura D. Kubzansky (2012), “The Heart's Content: The Association Between Positive Psychological Well-Being and Cardiovascular Health,” *Psychological Bulletin*, 655-91.
- Bower, Gordon H. (1981), “Mood and Memory,” *American Psychologist*, 36,129-48.
- Bradley, Brendan, Karin Mogg, Michael Galbraith, and Andrew Perrett (1993), “Negative Recall Bias and Neuroticism: State vs. Trait Effects,” *Behaviour Research and Therapy*, 31 (1), 125-7.
- Bryant, Fred (2003), “Savoring Beliefs Inventory (SBI): A Scale For Measuring Beliefs About Savouring.” *Journal of Mental Health*, 12, 175-96.
- Bushman, Brad J., Roy F. Baumeister, and Collen M. Phillips (2001), “Do People Aggress to Improve Their Mood? Catharsis Beliefs, Affect Regulation Opportunity, and Aggressive Responding.” *Journal of Personality and Social Psychology*, 81, 17-32.
- Cacioppo, John T., and Richard E. Petty (1982), “The Need for Cognition,” *Journal of Personality and Social Psychology*, 42(1), 116-31.
- _____ and Chuan Feng Kao (1984), “The Efficient Assessment of Need for Cognition,” *Journal of Personality Assessment*, 48(3), 306-7.
- Cantril, Hadley (1965), *The Pattern of Human Concerns*. New Brunswick, NJ: Rutgers University Press.

- Carstensen, Laura L., Derek M. Isaacowitz, and Susan T. Charles (1999), "Taking Time Seriously: A Theory of Socioemotional Selectivity," *American Psychologist*, 54(3), 165-81.
- Carver, Charles S., Michael F. Scheier, and Jagdish K. Weintraub (1989), "Assessing Coping Strategies: A Theoretically Based Approach," *Journal of Personality and Social Psychology*, 56(2), 267-83.
- Carver, Charles S., and Teri L. White (1994), "Behavioral Inhibition, Behavioral Activation, and Affective Responses to Impending Reward and Punishment: The BIS/BAS Scales," *Journal of Personality and Social Psychology*, 67(2), 319-33.
- Catanzaro, Salvatore J., and Jack Mearns (1990) "Measuring Generalized Expectancies for Negative Mood Regulation: Initial Scale Development and Implications," *Journal of Personality Assessment*, 54, 546-63.
- Chen, Lei, Shuhua Zhou, and Jennings Bryant (2007), "Temporal Changes in Mood Repair Through Music Consumption: Effects of Mood, Mood Salience, and Individual Differences," *Media Psychology*, 9(3), 695-713.
- Childers, Terry L., Michael J. Houston, and Susan E. Heckler (1985), "Measurement of Individual Differences in Visual versus Verbal Information Processing," *Journal of Consumer Research*, 12 (September), 125-34.
- Cialdini, Robert B., Betty Lee Darby, and Joyce E. Vincent (1973), "Transgression and Altruism: A Case For Hedonism," *Journal of Experimental Social Psychology*, 9(6), 502-516.
- Cohen, Joel B. and Eduardo B. Andrade (2004), "Affective Intuition and Task-Contingent Affect Regulation," *Journal of Consumer Research*, 31 (September), 358-67.

- Cohen, Joel B., Michel T. Pham and Eduardo B. Andrade (2008), "The Nature and Role of Affect in Consumer Behavior," In *Handbook of Consumer Psychology*, Eds. Curt Haugtvedt, Frank Kardes, and Paul Herr. Mahwah, NJ: Erlbaum (pp.297-348).
- Converse, Benjamin A., Shuhong Lin, Boaz Keysar, and Nicholas Epley (2008), "In the Mood to Get Over Yourself: Mood Affects Theory-of-Mind Use," *Emotion*, 8 (5), 725-30.
- Crowe, Ellen, and E. Tory Higgins (1997), "Regulatory Focus and Strategic Inclinations: Promotion and Prevention in Decision-Making," *Organizational Behavior and Human Decision Processes*, 69, 117-32.
- Crowne, Douglas P. and David Marlowe (1960), "A New Scale of Social Desirability Independent of Psychopathology," *Journal of Consulting Psychology*, 24 (1), 347-54.
- Cryder, Cynthia E., Jennifer S. Lerner, James J. Gross, and Ronald E. Dahl (2008), "Misery is Not Miserly Sad and Self-Focused Individuals Spend More," *Psychological Science*, 19(6), 525-30.
- Cunningham, Michael R. (1988) "What Do You Do When You're Happy Or Blue? Mood, Expectancies, and Behavioral Interest," *Motivation and Emotion*, 12, 309-31.
- Diener, E. D., Robert A. Emmons, Randy J. Larsen, and Sharon Griffin (1985), "The Satisfaction with Life Scale," *Journal of Personality Assessment*, 49 (1), 71-5.
- Dingemans, Alexandra E., Caroline Martijn, Eric F. van Furth, and Anita Jansen (2009), "Expectations, Mood, and Eating Behavior in Binge Eating Disorder. Beware of the Bright Side," *Appetite*, 53(2), 166-73.
- Elliott, Richard (1994), "Addictive Consumption: Function and Fragmentation in Postmodernity," *Journal of Consumer Policy*, 17, 159-79.
- Erber, Ralph (1991), "Affective and Semantic Priming: Effects of Mood on Category

- Accessibility and Inference,” *Journal of Experimental Social Psychology*, 27, 480–498.
- Erber, Ralph, Daniel M. Wegner, and Nicole Therriault (1996), “On Being Cool and Collected: Mood Regulation in Anticipation of Social Interaction,” *Journal of Personality and Social Psychology*, 70 (April), 757–66.
- Eysenck, Hans J., and Sybil BG Eysenck (2013), *Personality Structure and Measurement (Psychology Revivals)*. Routledge, NY.
- Faber, Ronald J., and Kathleen D. Vohs (2011), “Self-Regulation and Spending: Evidence from Impulsive and Compulsive Buying,” In *Handbook of Self-Regulation, Second Edition: Research, Theory, and Applications*, edited by Kathleen D. Vohs and Roy F. Baumeister. New York, N.Y.: The Guildford Press.
- Fishbach, Ayelet, and Aparna A. Labroo (2007), “Be Better or be Merry: How Mood Affects Self-Control,” *Journal of Personality and Social Psychology*, 93 (2), 158-173.
- Fujita, Frank, Ed Diener, and Ed Sandvik (1991), “Gender Differences in Negative Affect and Well-Being: The Case for Emotional Intensity,” *Journal of Personality and Social Psychology*, 61(3), 427-34.
- Gardner, Meryl P., Brian Wansink, Junyong Kim, and Se-Bum Park (2014), “Better Moods for Better Eating? How Mood Influences Food Choice,” *Journal of Consumer Psychology*, 24(3), 320-35.
- Garg, Nitika, Brian Wansink, and Jeffrey J. Inman (2007), “The Influence of Incidental Affect on Consumers’ Food Intake,” *Journal of Marketing*, 71(1), 194-206.
- Gasper, Karen, and Kosha D. Bramesfeld (2006), “Should I Follow My Feelings? How Individual Differences in Following Feelings Influence Affective Well-Being, Experience, and Responsiveness,” *Journal of Research in Personality*, 4(6), 986-1014.

- Gilboa-Schechtman, Eva, Liora Avnon, Eynat Zubery, and Pablo Jeczmiem (2006), "Emotional Processing in Eating Disorders: Specific Impairment or General Distress Related Deficiency," *Depression and Anxiety*, 23, 331-9.
- Gibson, Rhonda, Charles F. Aust, and Dolf Zillmann (2000), "Loneliness of Adolescents and their Choice and Enjoyment of Love-Celebrating Versus Love-Lamenting Popular Music," *Empirical Studies of the Arts*, 18(1), 43-8.
- Gosling, Samuel D., Peter J. Rentfrow, and William B. Swann Jr. (2003), "A Very Brief Measure of the Big-Five Personality Domains," *Journal of Research in Personality*, 37 (6). 504-28.
- Harmon-Jones, Eddie, Cindy Harmon-Jones, David M. Amodio, and Philip A. Gable (2011), "Attitudes toward Emotions," *Journal of Personality and Social Psychology*, 101(6), 1332-50.
- Hayes, Andrew F (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis*. New York: The Guilford Press.
- Heatherton, Todd F., Meg Striepe, and Lauren Wittenberg (1998), "Emotional Distress and Disinhibited Eating: The Role of Self," *Personality and Social Psychology Bulletin*, 24(3), 301-13.
- Heimpel, Sara A., Joanne V. Wood, Margaret A. Marshall, and Jonathon D. Brown (2002), "Do People With Low Self-Esteem Really Want To Feel Better? Self-Esteem Differences in Motivation to Repair Negative Moods," *Journal of Personality and Social psychology*, 82, 128-47.
- Herman, C. Peter, and Janet Polivy (1975), "Anxiety, Restraint, and Eating Behavior," *Journal of Abnormal Psychology*, 84(6), 666-72.

- Higgins, E. Tory (1997), "Beyond Pleasure and Pain," *American Psychologist*, 52, 1280-300.
- Higgins, E. Tory, Ronald S. Friedman, Robert E. Harlow, Lorraine C. Idson, Ozlem N. Ayduk, and Amy Taylor (2001), "Achievement Orientations from Subjective Histories of Success: Promotion Pride Versus Prevention Pride," *European Journal of Social Psychology*, 31, 3-23.
- Hochschild, Arlie Russell (1979), "Emotion Work, Feeling Rules, and Social Structure," *American Journal of Sociology*, 85 (3), 551-75.
- Hofmann, Stefan G., and Todd B. Kashdan (2010), "The Affective Style Questionnaire: Development and Psychometric Properties," *Journal of Psychopathology and Behavioral Assessment* 32(2), 255-63.
- Isen, Alice M (1984), "Toward Understanding the Role of Affect on Cognition," In *Handbook of Social Cognition*, ed. Robert S. Wyer, Thomas Srull, and Alice M. Isen. Hillsdale, N.J.: Lawrence Erlbaum Associates, Inc.
- _____ (1985), "Asymmetry of Happiness and Sadness in Effects on Memory in Normal College Students: Comments on Hasher, Rose, Zacks, Sanft, and Doren," *Journal of Experimental Psychology: General*, 114, 388-91.
- _____ (1987), "Positive Affect, Cognitive Processes, and Social Behavior," In *Advances in experimental social psychology*, vol. 20, 203-53, ed. by Leonard Berkowitz. New York: Academic Press.
- _____ Thomas E. Shalcker, Margaret Clark, and Lynn Karp (1978), "Affect, Accessibility of Material in Memory, and Behavior: A Cognitive Loop?" *Journal of Personality and Social Psychology*, 36 (1), 1-12.
- John, Oliver P., Eileen M. Donahue, and Robert L. Kentle (1991), "The Big Five Inventory—

Versions 4a and 54,” *Berkeley: University of California, Berkeley, Institute of Personality and Social Research*.

John, Oliver P., Laura P. Naumann, and Christopher J. Soto (2008), “Paradigm Shift to the Integrative Big Five Trait Taxonomy: History, Measurement, and Conceptual Issues,” in *Handbook of Personality: Theory and Research*, ed. O. P. John, R. W. Robins, and L. A. Pervin, New York, NY: Guilford Press, 114-58.

Joormann, Jutta, and Matthias Siemer (2004), “Memory Accessibility, Mood Regulation, And Dysphoria: Difficulties In Repairing Sad Mood With Happy Memories?” *Journal of Abnormal Psychology*, 113, 179-188.

Josephson, Braden R., Jefferson A. Singer, and Peter Salovey (1996), “Mood Regulation and Memory: Repairing Sad Moods with Happy Memories,” *Cognition and Emotion*, 10 (4), 437-44.

Kacen, Jacqueline J. (1994), “Phenomenological Insights into Moods and Mood-related Consumer Behaviors,” in *Advances in Consumer Research*, Vol. 21, ed. C. T. Allen and D. R. John, Provo, UT: Association for Consumer Research, 519-25.

Kennedy, Quinn, Mara Mather, and Laura L. Carstensen (2004), “The Role of Motivation in the Age-Related Positivity Effect in Autobiographical Memory,” *Psychological Science*, 15(3), 208-14.

Kidwell, Blair, David M. Hardesty, and Terry L. Childers (2008), “Consumer Emotional Intelligence: Conceptualization, Measurement, and the Prediction of Consumer Decision Making,” *Journal of Consumer Research*, 35 (June), 154–66.

Knobloch, Silvia, and Dolf Zillmann (2002), “Mood Management Via the Digital Jukebox,” *Journal of Communication*, 52 (2), 351-366.

- Kruglanski, Arie W., Erik P. Thompson, E. Tory Higgins, M. Atash, Antonio Pierro, James Y. Shah, and Scott Spiegel (2000), ““To” Do The Right Thing” Or To “Just Do It”:
Locomotion And Assessment As Distinct Self-Regulatory Imperatives,” *Journal of Personality and Social Psychology*, 79(5), 793-815.
- Labroo, Aparna and Anirban Mukhopadhyay (2009), “Lay Theories of Emotion Transience and the Search for Happiness: A Fresh Perspective on Affect Regulation,” *Journal of Consumer Research*, 36 (2), 242–54.
- Larsen, Randy J. (1984), “Theory and Measurement of Affect Intensity as an Individual Difference Characteristic,” unpublished doctoral dissertation, Department of Psychology, University of Illinois, Champaign, IL 61620.
- _____ (2000), “Toward a Science of Mood Regulation,” *Psychological Inquiry*, 11 (3), 129-141.
- Lazarus, Richard S., and Susan Folkman (1984), *Stress, Appraisal, and Coping*. New York: Springer.
- Lovibond, Peter F., and Sydney H. Lovibond (1995), “The Structure of Negative Emotional States: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories,” *Behaviour Research and Therapy*, 33 (3), 335-43.
- Luce, Mary Frances (1998), “Choosing to Avoid: Coping with Negative Emotion-Laden Consumer Decisions,” *Journal of Consumer Research*, 24 (March), 409–433.
- Luomala, Harri. T., and Martti Laaksonen (1999), “Mood-Regulatory Self-Gifts: Development of a Conceptual Framework,” *Journal of Economic Psychology*, 18 (4), 407-434.
- Lyubomirsky, Sonja, Nicole D. Caldwell, and Susan Nolen-Hoeksema (1998), “Effects of Ruminative and Distracting Responses to Depressed Mood on Retrieval of

- Autobiographical Memories,” *Journal of Personality and Social Psychology*, 75 (1), 166-77.
- Lyubomirsky, Sonja, and Heidi S. Lepper (1999), “A Measure of Subjective Happiness: Preliminary Reliability and Construct Validation,” *Social Indicators Research*, 46 (2), 137-55.
- Manucia, Gloria K., Donald J. Baumann, and Robert B. Cialdini (1984), “Mood Influences on Helping: Direct Effects or Side Effects?” *Journal of Personality and Social Psychology*, 46 (February), 357–64.
- Matt, Georg E., Carmelo Vázquez, and W. Keith Campbell (1992), “Mood-Congruent Recall of Affectively Toned Stimuli: A Meta-Analytic Review.” *Clinical Psychology Review*, 12 (2), 227-55.
- Mayer, John D., and Alexander A. Stevens (1994), “An Emerging Understanding of the Reflective (Meta-) Experience of Mood,” *Journal of Research in Personality*, 28(3), 351-73.
- Mayer, John D., Peter Salovey, David R. Caruso, and Gill Sitarenios (2003), “Measuring Emotional Intelligence with the MSCEIT V2.0,” *Emotion*, 3(1), 97-105.
- Meadowcroft, Jeanne M., and Dolf Zillmann (1987), “Women’s Comedy Preferences during the Menstrual Cycle,” *Communication Research*, 14, 204–218.
- McFarland, Cathy and Roger Buehler (1997), “Negative Affective States and the Motivated Retrieval of Positive Life Events: The Role of Affect Acknowledgment,” *Journal of Personality and Social Psychology*, 73 (1), 200-14.
- _____ (2012), “Negative Moods and the Motivated Remembering of Past Selves: The Role of Implicit Theories of Personal Stability,” *Journal of Personality and Social Psychology*,

102 (2), 242-63.

- Mick, David Glen and Michelle Demoss (1990), "Self-Gifts: Phenomenological Insights from Four Contexts," *Journal of Consumer Research*, 17 (3), 322–32.
- Morris, William N. and Nora P. Reilly (1987), "Toward the Self Regulation of Mood: Theory and Research," *Motivation and Emotion*, 11 (September), 215–249.
- Nabi, Robin L., Keli Finnerty, Tricia Domschke, and Shawnika Hull (2006), "Does Misery Love Company? Exploring the Therapeutic Effects of TV Viewing on Regretted Experiences," *Journal of Communication*, 56(4), 689-706.
- Nolen-Hoeksema, Susan, Blair E. Wisco, and Sonja Lyubomirsky (2008), "Rethinking Rumination." *Perspectives on Psychological Science*, 3(5), 400-24.
- Norem, Julie K., and Nancy Cantor (1986), "Defensive Pessimism: Harnessing Anxiety as Motivation," *Journal of Personality and Social Psychology*, 51 (6), 1208-17.
- O'Guinn, Thomas C. and Ronald J. Faber (1989), "Compulsive Buying: A Phenomenological Exploration," *Journal of Consumer Research*, 16 (September), 147–57.
- Oliver, Georgina, and Jane Wardle (1999), "Perceived Effects of Stress on Food Choice," *Physiology and Behavior*, 66(3), 511-5.
- Parker, Gordon, Hilary Tupling, and L. B. Brown (1979) "Parental Bonding Instrument (PBI)," *British Journal of Medical Psychology*, 52, 1-10.
- Parkinson, Brian and Peter Totterdell (1999), "Classifying Affect-Regulation Strategies," *Cognition and Emotion*, 13, 277–303.
- Parrott, W. Gerrod (1993) "Beyond Hedonism: Motives for Inhibiting Good Moods and for Maintaining Bad Moods," in *Handbook of Mental Control, Century Psychology Series*, ed. D. M. Wegner and J. W. Pennebaker, Englewood Cliffs, NJ: Prentice-Hall., 278-305.

- Parrott, Gerrod W., and John Sabini (1990), "Mood And Memory Under Natural Conditions: Evidence For Mood Incongruent Recall," *Journal of Personality and Social Psychology*, 59, 321-36.
- Pham, Michel Tuan (2009), "The Lexicon and Grammar of Affect-as-Information in Consumer Decision Making: The GAIM," in *Social Psychology of Consumer Behavior*, Michaela Wänke (Ed.), Psychology Press, 167-200.
- Polivy, Janet and C. Peter Herman (1976). "Effects of Alcohol on Eating Behavior Influence of Mood and Perceived Intoxication," *Journal of Abnormal Psychology*, 85, 601-6.
- _____ (1985), "Dieting as a Problem in Behavioral Medicine," in *Advances in Behavioral Medicine*, Edward S. Katkin and Steven B. Manuck, eds. New York: JAI Press, 1-37.
- Puri, Radhika (1996), "Measuring and Modifying Consumer Impulsiveness," *Journal of Consumer Psychology*, 5 (2), 87-113.
- Richins, Marsha L. (2004), "The Material Values Scale: Measurement Properties and Development of a Short Form," *Journal of Consumer Research*, 31 (June), 209-19.
- Richins, Marsha L. and Scott Dawson (1992), "A Consumer Values Orientation for Materialism and Its Measurement: Scale Development and Validation," *Journal of Consumer Research*, 19 (December), 303-16.
- Ridgway, Nancy M., Monika Kukar-Kinney, and Kent B. Monroe (2008), "An Expanded Conceptualization and a New Measure of Compulsive Buying," *Journal of Consumer Research*, 35 (4), 622-39.
- Rook, Dennis W. (1987), "The Buying Impulse," *Journal of Consumer Research*, 14 (September), 189-99.
- Rook, Dennis W. and Robert J. Fisher (1995), "Normative Influences on Impulsive Buying

- Behavior,” *Journal of Consumer Research*, 22 (December), 305–13.
- Rook, Dennis W. and Meryl Paula Gardner (1993), “In the Mood: Impulse Buying’s Affective Antecedents,” *Research in Consumer Behavior*, 6, 1–28.
- Rosenberg, Morris (1965), *Society and the Adolescent Self-Image*. Princeton, NJ: Princeton University Press.
- Rusting, Cheryl L. (1998). “Personality, Mood, and Cognitive Processing of Emotional Information: Three Conceptual Frameworks,” *Psychological Bulletin*, 124 (2), 165-196.
- Rusting, Cheryl L., and Tracy DeHart (2000), “Retrieving Positive Memories to Regulate Negative Mood: Consequences for Mood-Congruent Memory,” *Journal of Personality and Social Psychology*, 78(4), 737-52.
- Ryan, Richard M., and Edward L. Deci (2001), “On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-Being,” *Annual Review of Psychology*, 52(1), 141-66.
- Salovey, Peter, John D. Mayer, Susan L. Goldman, Carolyn Turvey, and Tibor P. Palfai (1995), “Emotional Attention, Clarity, and Repair: Exploring Emotional Intelligence Using the Trait Meta-Mood Scale,” In *Emotion, Disclosure, and Health*, ed. J. Pennebaker, Washington, DC: American Psychological Association, 125–54.
- Schmich, Mary (1986), “A Stopwatch on Shopping,” *Chicago Tribune*, http://articles.chicagotribune.com/1986-12-24/features/8604060073_1_shopping-shaky-ground-festive-hat
- Simons, Jeffrey S., and Raluca M. Gaher (2005) “The Distress Tolerance Scale: Development and Validation of A Self-Report Measure,” *Motivation and Emotion*, 29(2), 83-102.
- Singelis, Theodore M. (1994), “The Measurement of Independent and Interdependent Self-

- Construals,” *Personality and Social Psychology Bulletin*, 20 (October), 580–91.
- Singer, Jefferson A., and Peter Salovey (1988), “Mood and Memory: Evaluating the Network Theory of Affect,” *Clinical Psychology Review*, 8 (2), 211-251.
- Smith, Stephen M., and Richard E. Petty (1995), “Personality Moderators of Mood Congruency Effects on Cognition: The Role Of Self-Esteem and Negative Mood Regulation,” *Journal of Personality and Social Psychology*, 68(6), 1092-107.
- Strahilevitz, Mihal and John G. Myers (1998) “Donations to Charity as Purchase Incentives: How Well They Work May Depend on What You Are Trying to Sell,” *Journal of Consumer Research*, 24 (March), 434-46.
- Strizhakova, Yuliya, and Marina Krcmar (2007), “Mood Management and Video Rental Choices,” *Media Psychology*, 10 (1), 91-112.
- Tamir, Maya (2009), “What Do People Want To Feel And Why? Pleasure and Utility In Emotion Regulation,” *Current Directions in Psychological Science*, 18, 101-5.
- Tamir, Maya, and Brett Q. Ford (2012), “When Feeling Bad is Expected to Be Good: Emotion Regulation and Outcome Expectancies in Social Conflicts,” *Emotion*, 12 (4), 807-16.
- Tangney, June P., Roy F. Baumeister, and Angie Luzio Boone (2004), “High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success,” *Journal of Personality*, 72 (2), 271-324.
- Tice, Dianne M., and Ellen Bratslavsky (2000), “Giving in to Feel Good: The Place of Emotion Regulation in the Context of General Self-Control,” *Psychological Inquiry*, 11 (3), 149-59.
- Tice, Dianne M., Ellen Bratslavsky, and Roy F. Baumeister (2001), “Emotional Distress Regulation Takes Precedence over Impulse Control: If You Feel Bad, Do It!” *Journal of*

- Personality and Social Psychology*, 80 (January), 53–67.
- Thayer, Robert E., J. R. Newman, and T. M. McClain (1994), “Self-Regulation of Mood: Strategies for Changing a Bad Mood, Raising Energy and Reducing Tension,” *Journal of Personality and Social Psychology*, 67 (5), 910–25.
- Watson, David, Lee Anna Clark, and Auke Tellegen (1988), “Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales,” *Journal of Personality and Social Psychology*, 54 (6), 1063–70.
- Wisco, Blair E., and Susan Nolen-Hoeksema (2010), “Valence of autobiographical memories: The role of mood, cognitive reappraisal, and suppression,” *Behaviour Research and Therapy*, 48, 335-40.
- Wood, Joanne V., Sara A. Heimpel, Laurie A. Manwell, and Elizabeth J. Whittington (2009), “This Mood is Familiar And I Don't Deserve to Feel Better Anyway: Mechanisms Underlying Self-Esteem Differences in Motivation to Repair Sad Moods,” *Journal of Personality and Social Psychology*, 96(2), 363-80.
- Yeomans, Martin R., and Emma Coughlan (2009), “Mood-Induced Eating. Interactive Effects of Restraint and Tendency to Overeat,” *Appetite*, 52(2), 290-8.
- Zillmann, Dolf (1988), “Mood Management: Using Entertainment to Full Advantages,” in *Communication, Social Cognition, and Affect*, ed. Lewis Donohew and Howard E. Sypher, Hillsdale, NJ: Erlbaum, 147–71.
- Zvolensky, Michael J., Erin C. Marshall, Kirsten Johnson, Julianna Hogan, Amit Bernstein, and Marcel O. Bonn-Miller (2009), “Relations Between Anxiety Sensitivity, Distress Tolerance, And Fear Reactivity To Bodily Sensations To Coping And Conformity Marijuana Use Motives Among Young Adult Marijuana Users,” *Experimental and*

Clinical Psychopharmacology, 17(1), 31-42.

APPENDIX A

ORIGINAL SCALE ITEMS IN ITEM GENERATION PROCESS

Initial Pool of 79 Items

When I feel upset, I usually find a way to cheer myself up.^a
When I feel upset, I immediately do something to feel better.*
When I feel upset, I often wallow in it.
When I feel upset, I make myself feel better by treating myself to something I like.^a
When I feel upset, I just allow myself to feel depressed.
When I feel upset, I'll be upset for a long time.^a
I tend to dwell on my negative feelings.^a
I always give in to my negative emotions.
I try not to give in to my negative emotions.^a
When I experience negative mood, I don't try to change this mood.^a
When I experience negative mood, I allow myself to experience this mood.^a
It's okay to feel negative emotions at times.*
I can tolerate being upset.*
There is nothing wrong with feeling very emotional.^a
I find pleasure in sadness.^a
I dislike how it feels when I am sad.*
I dislike how it feels when I am angry.^a
I really like feeling happy.*
I like how it feels when I am furious.*
I like thinking about sad things.*
I'll do anything to stop feeling distressed or upset.*
When I feel distressed or upset, I must do something about it immediately.*
I shouldn't feel negative emotions.*
There's no need to change negative emotions.*
There's nothing wrong with feeling negative emotions.*
I know feeling negative emotions is wrong.^a
When I experience negative mood, I wouldn't want to change this mood.^a
When I experience negative mood, I don't try to change it because I believe it is important to experience.^a
When I experience negative mood, I don't need to feel better.^a
I don't need to feel happy all the time.*
It is fine to be in a negative mood.^a
I enjoy the occasional negative mood states.
Experiencing negative mood is not threatening to me.*
I try to make myself feel better when I'm upset because it makes it easier to be around people.^a
I try to make myself feel better when I'm upset because it makes me personable.^a
I try to make myself feel better when I'm upset because I want to get things done.^a
I try to make myself feel better when I'm upset because I want to be productive.^a
I try to make myself feel better when I'm upset because I want to feel good.
I try to make myself feel better when I'm upset because I hate experiencing negative mood.^a
My feelings of distress or being upset are not acceptable.^a
Feeling distressed or upset is unbearable to me.*
I am ashamed of myself when I feel distressed or upset.
There's nothing worse than feeling distressed or upset.
When I'm upset, I become angry with myself for feeling that way.
When I'm upset, I become embarrassed for feeling that way.
There is no need to make myself feel better because negative moods are fleeting and transient.^a
There is no need to make myself feel better because I can tolerate negative moods.^a
Resisting positive feelings helps me think more realistically.
Being in a positive mood is distracting.
Sometimes I inhibit my positive feelings to motivate myself to work hard.

Sometimes I inhibit my positive feelings to protect myself from future disappointment.
 Sometimes I inhibit my positive feelings to be respectful or considerate of others.
 Excessive happiness could cause bad fortune.
 Sometimes I feel that I don't deserve to be in a good mood.^a
 Denying myself of positive feelings can strengthen my character.
 Good moods are trivial and insignificant.*
 Staying in a negative mood helps me be more focused.^a
 Being in a negative mood helps me think more analytically.
 Sometimes I maintain my negative feelings to motivate myself to work hard.
 Sometimes I maintain my negative feelings to atone for my guilt.
 Sometimes I maintain my negative feelings to punish myself.*
 Sometimes I maintain my negative feelings to empathize with others.
 Staying in a negative mood helps me feel confident of handling the worse when it comes.
 Staying in a negative mood helps me signal to others my need for social support.*
 I sometimes think that worrying makes unfortunate events less likely.
 I sometimes become angry so as to avoid feeling sad.*
 I sometimes stay in a negative mood to prove a point to others.*
 I sometimes stay angry to protest others' treatment toward me.
 I sometimes stay in a negative mood to punish others for treating me badly.
 I sometimes stay in a negative mood to show my displeasure with the state of matters.^a
 It bothers me when people tell me to cheer up when I am feeling upset.*
 When I experience negative mood, I don't try to make myself feel better because I distrust such positive feelings.^a
 When I'm feeling upset, it's more important to resolve my negative mood than find something to make me feel happy.^a

* Items from the initial pool of 79 items that were kept in the reduced set of 49 items

^a Items from the initial pool of 79 items that were modified and included in the reduced set of 49 items

Frequency Scale Items from Reduced Set of 49 Items

When I'm feeling upset, I like to dwell in it.
 When I'm feeling upset, I don't try to change it.
 When I'm feeling upset, I allow myself to experience it.
 When I'm feeling upset, I wouldn't want to change this mood.
 When I'm feeling upset, I don't try to change it because I don't deserve to feel better.
 I can tolerate being upset.
 I like how it feels when I am furious.
 I like thinking about sad things.
 When I'm feeling upset, I immediately do something to feel better.
 When I'm feeling upset, I look for ways to cheer myself up.
 When I'm feeling upset, I feel the need to make myself feel better.
 When I feel distressed or upset, I must do something about it immediately.
 When I'm feeling upset, I need to do nice things for myself to improve my mood.
 I really like feeling happy.
 When I am in negative mood I try to make myself feel better because it makes me personable.
 I dislike how it feels when I am sad.
 Experiencing negative feelings bothers me.
 Experiencing negative feelings threatens me.
 When I'm in a negative mood, I try to make myself feel better because I want to get things done.

Agreement Scale Items from Reduced Set of 49 Items

Staying in a negative mood is not good for me.
 One should not allow negative feelings to last too long.
 I shouldn't feel negative emotions.
 Feeling distressed or upset is unbearable to me.
 Negative emotions are not acceptable to me.

I'll do anything to stop feeling distressed or upset.
When I'm feeling upset, I need to do positive things to cheer myself up.
If I'm in a bad mood, I try to make myself feel better because it makes it easier to be around people.
If I'm in a bad mood, I try to make myself feel better because I want to be productive.
I prefer to dwell on my negative feelings rather than to make myself feel better.
There's nothing wrong with feeling negative emotions.
It's okay to feel negative emotions at times
Sometimes I enjoy feeling bad.
Sometimes I find a little pleasure in being angry.
Sometimes I maintain my negative feelings to punish myself.
I sometimes become angry so as to avoid feeling sad.
I sometimes stay in a negative mood to prove a point to others.
I sometimes stay in a negative mood to show my displeasure with the situation.
It bothers me when people tell me to cheer up when I am feeling upset.
When I'm feeling upset, I don't need to feel better.
There's no need to change negative emotions.
Trying to make myself feel better when I'm feeling upset is unnatural.
When I'm feeling upset, I wouldn't feel right trying to make myself feel happy.
There is no need to make oneself feel better because negative moods do not last very long.
There usually is no need for me to make myself feel better because I can handle negative feelings.
Staying in a negative mood helps me focus and think more clearly.
Staying in a negative mood helps me signal to others my need for support.
I don't need to feel happy all the time.
Good moods are trivial and insignificant.
If I'm in a negative mood, I don't try to change it because it's important to experience your feelings as they are.

APPENDIX B

SUMMARY STATISTICS FOR CONFIRMATORY FACTOR ANALYSES

	Models			
	Higher-order factor model	Four-factor correlated model	Four-factor uncorrelated model	One-factor model
Goodness-of-Fit Statistics				
Chi-square badness-of-fit	114.5581	111.5892	97.1499	1082.9045
Chi-square degrees of freedom	100	98	102	104
Probability > Chi-square	.1515	.1645	.6172	<.0001
Goodness-of-Fit Index	.9018	.9029	.8906	.3298
Adjusted Goodness of Fit Index	.8664	.8652	.8541	.2633
RMSEA Estimate	.0350	.0341	.0000	.2812
Bentler's Comparative Fit Index	.9902	.9909	1.0000	.3427
Normed Fit Index	.9288	.9307	.9193	.3271

APPENDIX C

POLITICAL ATTITUDES AND PERSONAL VALUES ITEMS FROM STUDY 4

	Factor and Reliability								
	1	2	3	4	5	6	7	8	9
	$\alpha = .84$	$\alpha = .80$	$\alpha = .85$	$\alpha = .77$	$\alpha = .49$	$r = -.31$	$\alpha = .51$	$\alpha = .36$	-
Using overwhelming military force is the best way to defeat terrorism around the world.	.79								
The best way to ensure peace is through military strength.	.71								
The U.S. stands above all other countries in the world.	.61								
The growing number of newcomers from other countries threatens traditional American customs and values.	.56								
Immigrants today are a burden on our country because they take our jobs, housing and health care.	.54								
I often feel proud to be American.	.53								
I am worried that there will soon be another terrorist attack in the United States.	.51								
Immigrants today strengthen our country because of their hard work and talents.*	-.44								
Religion is a very important part of my life		.78							
Homosexuality should be accepted by society.*		-.76							
Society is better off if people make marriage and having children a priority.		.69							
The use of marijuana should be made legal.*		-.63							
The government should do more to protect morality in society.		.53							
Children are better off when a parent stays home to focus on the family.		.42							
I follow closely news about candidates and election campaign in political elections.			.89						
I follow closely what's going on with the government and public affairs.			.89						
I enjoy talking about government and politics with friends and family.			.81						
I am enthusiastic about voting in the upcoming elections.			.68						
Hard work and determination are no guarantee of success for most people*				-.81					
Most people who want to get ahead can make it if they're willing to work hard.				.71					
The government should do more to help needy Americans, even if it means going deeper into debt.*				-.62					
The economic system in this country unfairly favors powerful interests.*				-.46					
Government aid to the poor does more harm than good, by making people too dependent on government assistance.				.45					
This country should do whatever it takes to protect the environment.					.70				
People in this country should learn to live with less.					.63				
I recycle and reuse as a daily habit.					.48				

APPENDIX C (CONTINUED)

POLITICAL ATTITUDES AND PERSONAL VALUES ITEMS FROM STUDY 4

	Factor and Reliability								
	1	2	3	4	5	6	7	8	9
	$\alpha = .84$	$\alpha = .80$	$\alpha = .85$	$\alpha = .77$	$\alpha = .49$	$r = -.31$	$\alpha = .51$	$\alpha = .36$	-
Government is almost always wasteful and inefficient.						.74			
Most elected officials care what people like me think.*						-.56			
We should pay less attention to problems overseas and concentrate on problems here at home.							.78		
U.S. efforts to solve problems around the world usually end up making things worse.							.51		
Too much power is concentrated in the hands of a few large companies.							.49		
I am sometimes uncomfortable being around people not of my race.								.72	
I couldn't vacation without my smart phone								.55	
Americans need to be willing to give up privacy and freedom in order to be safe from terrorism.								.35	
The police should not be able to search people just because they think they look suspicious.									.79

* Reversed-coded items

APPENDIX D

ADVERTISEMENTS FROM STUDY 5 (TOP IMAGE: MOOD LIFTING APPEAL ABSENT CONDITION; BOTTOM IMAGE: MOOD LIFTING APPEAL PRESENT CONDITION)

 Nutrition Now®

Wanna get healthy? See how it's like for yourself with our new gummy vitamins.



Boost immune support and get healthier today.

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Wanna feel happy? See how it feels for yourself with our new gummy vitamins!



Boost immune support and get happier today!