The Role of Trait Emotional Intelligence in Buffering

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Abstract

Narrowing in on coping and stress management aspects of trait emotional intelligence, this study aims to explore how emotional intelligence may be related to buffering, which is one's ability to subjectively shield off stress. Building on a previous study, it also aims to disentangle whether trait emotional intelligence alone influences buffering or whether a state interaction, such as positive mood is also required to induce buffering. The study was divided into two parts and consisted of 45 Vanderbilt undergraduate students. The study found marginally significant results regarding emotional intelligence (specifically, clarity and attention) improving task performance and stress recovery when interacting with mood condition. Although the results fail to support the main hypothesis, they offer promising insights for future studies.

Keywords: Trait Emotional Intelligence, Buffering, Stress, Mood

The Role of Trait Emotional Intelligence in Buffering

Introduction

Imagine you are a college student facing approaching finals. You have many final examinations and papers to complete within the next few days. While you are very stressed with schoolwork, you are also looking for a summer job, moving out, and your friends want to go out and celebrate the coming of summer. With conflicting emotions and priorities, having a mechanism to help understand, manage, and cope with these stressors becomes increasingly important. If your stress causes you to act out against your friends, they might be less likely to support you when you most need it. However, if you try too hard to please your friends, ignoring your own needs, your classes might suffer. If your emotions cause you to stay focused, they could be quite adaptive. Yet, if your emotions cause you to turn to alcohol for stress relief, they could be quite maladaptive. What would you do in this situation? How would you balance the stresses in your life?   What could you do to lessen the effects of stress you feel? Could people's understanding of their own and other's emotions be related to how well they counteract experiencing stress? This investigation of trait emotional intelligence's relationship to buffering aimed to identify trait, state, and interaction factors that may lead to more effective reduction of negative feelings post-stress.

Although many emotions can be easily recognized, individuals differ in their ability to process and use emotional information. Differences in these abilities can affect the way we behave and make emotional decisions. For example, if a new male employee is unjustly fired in front of an entire law firm, it might be advantageous for him to control his anger until he is in the privacy of his home if he wants to be hired by another firm in

the same city. In this way, emotional intelligence is critical for interacting in a social world and understanding oneself and others (Mayer & Salovey, 1997). Emotional intelligence, however, extends beyond just social interaction. Emotional intelligence (EI) is the ability to recognize, understand, manage, and use emotions (Mayer & Salovey, 1997). EI has multiple functions in our everyday lives. For example, an individual might recognize he or she is feeling proud, understand what that means, manage the emotion within a social context, and use that pride toward future thoughts and actions. The decisions you make and the actions you take are strongly influenced by your emotional intelligence. In addition to emotional intelligence influencing an emotional outcome, prior emotion states can also affect thoughts and thus how one manages a stressor (Mayer & Salovey, 1997). Beyond emotional intelligence and mood impacting emotion outcomes, the buffering hypothesis involves factors that can reduce or protect from the negative affect associated with stressors (Cohen & Wills, 1985). This mechanism is important in eliciting effective coping and emotion regulation. Such factors include positive emotions and social support, which help to stave off the negative effects felt after trying events (Cohen & Willis, 1985).

This study examined whether or not certain traits, particularly high trait emotional intelligence, can lead to more effective reduction of negative affect after a stressor, otherwise known as more effective buffering. Furthermore, this study examined whether the mood you are in right before experiencing a stressor can interact with trait effects to reduce the negative effects of a stressor as well.

Emotional Intelligence (EI)

What does it mean to be emotionally intelligent? Mayer and Salovey explain that emotional intelligence is culturally laden and exists in a social and cultural context (1997). Thus, social and cultural norms dictate which emotions are most adaptive in a given situation and having an understanding of this is a demonstration of emotional intelligence. Trait emotional intelligence is a stable, trait-like, and predictive recognition of emotions, including emotional regulation, and understanding an emotion's effect on cognitions and actions (Lane & Wilson, 2011). For example, emotions can assist in thought and impact decision-making (Mayer & Salovey, 1997). Petrides and Furnham (2003) suggest trait EI affects one's goals, mood, and satisfaction from interpersonal relationships. For example, if one is better able to understand the emotions of others, they are more likely to have positive social relationships with others, thus increasing their social resources in achieving goals. Mayer and Salovey (1997) also argue that emotional intelligence extends beyond just acting in socially acceptable ways, but also includes displaying emotional competence. What this means is that while it may be socially acceptable to act in a certain way, it might not necessarily lead to the best or most adaptive outcome. For instance, it is acceptable and normal to be nervous before an important exam, however if you can turn your nervousness into drive or challenge rather than defeat, you are expressing greater emotional competence. As described in the opening example, utilizing emotional intelligence could lead to choosing a more effective and beneficial coping mechanism, such a creating a list of priorities and deadlines. Having emotional competency can have implications for manipulating emotions in oneself and others to achieve a certain end. Many researchers in psychology are interested in studying emotional intelligence, but due to its multi-faceted nature and

diverse outcomes, there is still much left to be understood, including its impact on a person's daily functioning. For example, if an individual better understands how they are feeling and how their emotions impact others, are they more likely to use their emotions in a more adaptive way, meaning buffering his or her response in the face of a stressor?

High emotional intelligence can also increase one's possible coping repertoire, a facet that will be explored further in the following section. Lane and Wilson (2011) and Ciarrochi, Chan, and Bajgar (2001) found an association between high trait EI and increased positive affect. In Lane & Wilson (2011), athletes with high trait EI reported more positive emotions than athletes with lower trait EI over the course of a long distance race. In Ciarrochi et al. (2001), individuals with high emotional regulation (a facet of EI) produced more positive stories when presented with either a positive or negative stimulus, relative to those with low emotion regulation. However, in addition to positive emotions, individuals with high trait EI are also more strongly negatively affected by a stressful stimulus because they are generally more receptive to mood induction and manipulation (Petrides & Furnham, 2003). This could also imply that individuals with high trait EI experience emotions with greater intensity.

In the larger concept of emotion theory, Winter and Kuiper (1997) found that individuals differ in how they differentiate and process emotional information based on self-schemas. Even in the same situation, two people may experience emotions differently based on factors such as past experiences and future goals. This is consistent with appraisal theory, which states that emotions are the products of personal appraisals, which occur in patterns around considerations of relevance, goal congruence, accountability, coping potential, and future expectations (Roseman & Smith, 2001; Smith

& Lazarus, 1990). These schemas consist of content and functions that are strongly influenced by internal factors such as personality (Winter & Kuiper, 1997). Thus**,** based on the literature we know that emotional intelligence is related to daily functioning, positive affect, coping potential, emotional decision making, and emotional differentiation and processing.

Smith and Lazarus (1990) explain that emotions relate people and their environment. Emotional intelligence could be related to emotional differentiation because if one has a greater understanding and grasp on emotional information he or she might better to able to distinguish discrete emotions by having inherent schemas on what makes one positive emotion different from another. Additionally, even though a person has a certain trait such as high emotional intelligence, it is important to determine in what situations this trait is expressed and in what situations it remains unseen. In relating this to mood, is emotional intelligence equally displayed with all emotions, or does the trait and outcome depend on the unique emotional experience?

Buffering with Positive Emotions

Researchers have found many life outcomes associated with trait EI, but this does not necessarily translate easily into other psychological concepts such as buffering. Buffering is essentially "the idea that having a particular resource or positive personality quality can serve to protect a person against the adverse impact of a stressful event" (Carver, 1996). My study investigated the relation between EI and buffering, particularly if high trait EI could be one of these resources that leads to buffering. The buffering hypothesis is a psychological concept that describes how interpersonal resources, such as being in a positive mood or having social support, can cushion individuals from

responding negatively to a subsequent stressor or negative state (Farmer & Sundberg, 2009). Buffering is closely linked to Fredrickson's Broaden and Build Theory, which states that "positive emotions broaden an individual's momentary thought-action repertoire" and thus "promote discovery of novel and creative actions, ideas, and social bonds, which in turn *build* that individual's personal resources" (Fredrickson, 2004). In other words, the action tendencies associated with positive emotions are broadening rather than narrowing, and this broadening bolsters resources. These coping resources can come in many forms. Physical resources built by positive emotions could be strength and energy when confronting a challenging task (Fredrickson, 2001). An example of an intellectual resource Fredrickson provides is increased creativity associated with positive emotions. Social resources built by positive emotions include strengthened social relationships and psychological resources stemming from positive emotions relate to the concept of buffering, by using positive emotions to mentally prepare an individual to deal with subsequent negative experiences (Fredrickson, 2001). Individuals use buffering to extract positive meanings and interpretations to avoid negative emotions (Tugade & Fredrickson, 2007). Because positive emotions are broadening, they influence individuals to look at the bigger picture when faced with a new stressor, so they are better able to handle it by putting it in the larger context of their life (Fredrickson, 2001). Relating to the opening scenario, if a student is about to take a test, a broad perspective might allow them to understand that the test is only a small percentage of a grade from one class that will have an effect upon, but not make or break their cumulative grade point average. From a narrow perspective, the test could be the most important thing to the person at that one point in time, thus causing much greater stress as he or she

approaches it due to inflated importance. In this way, positive emotions can sway a person towards resilience and away from grief by putting the test into a larger perspective if it goes badly (Fredrickson, 2001). Positive emotions have historically been ignored in research because there are fewer of them compared to negative emotions, and they were not seen as problematic like negative emotions (Fredrickson, 1998). Yet understanding positive emotions can shed light on useful concepts such as buffering. I wanted to explore if individuals with high trait emotional intelligence are better able to use buffering to cope with a stressor by testing whether emotional intelligence itself, the mood a person is in, or the interaction of the two can affect a person's emotional reactions to a stressful event. The interaction helped to examine if people with a better understanding of their emotions may be able to benefit more deeply from the state they are in before experiencing a stressor.

Summary

After reviewing the literature and previous studies regarding emotional intelligence and buffering, the next step was to explore whether having high or low emotional intelligence affects the extent to which that person can engage in buffering and if this relationship is influenced by a mood induction. Could having high emotional intelligence allow people to use emotional information in a strategic way to buffer themselves against a stressor? Does this work more effectively if they are in a positive mood? The current study attempts to better understand how EI plays into an individual's life in terms of buffering. I hypothesized participants with high trait emotional intelligence (along the facets of clarity, attention and repair) will show lower distress in response to a stressor regardless of the mood they are in before experiencing the stressor

compared to participants with low emotional intelligence scores because they will be actively regulating their emotions and adaptively understanding the stress they are experiencing in the context of the experiment. Additionally, I hypothesized the affective responses of participants low in emotional intelligence will depend on mood condition because they will need to be in a positive mood to counteract and prevent stress. Another way of stating the hypothesis more concretely is that high emotional intelligence predicted lower negative affect scores than low emotional intelligence (main effect for EI) and that adding a positive mood manipulation would significantly improve the model (EI*Mood interaction). The null was that EI does not predict affect scores and that mood did not contribute to the model. Findings from this study will hopefully offer new insights into the importance of emotional intelligence and pave the way for emotional intelligence workshops or clinical intervention programs.

Methods

The study consisted of 2 parts, an online survey meant to assess emotional intelligence, and an in-laboratory buffering study. The experiment was conducted this way in order to maximize time running participants in the study as well as prevent participants from completely associating the survey with the study and thus having it impact their responses.

Study 1

Participants

The participants were Vanderbilt undergraduate students between the ages of 18 and 23 (average age= 19.375), the majority being college freshmen and sophomores (39.3% and 36.6%, respectively). There were 149 participants in the initial online study

(30 Male, 114 Female). 127 participants completed the survey and 22 had missing data. Vanderbilt's psychology participation pool (SONA) was used to recruit participants for the study as well as e-mail and in-class announcements. Participants were placed into time slots via self sign-up.   Participants were compensated with 2 SONA credits, one for every half hour of participation. Certain classes allot extra credit or course credit for receiving SONA credits.

Materials/Measures

I used an initial screening comprehensive survey containing scales measuring emotional intelligence along the facets of clarity, attention, and repair. To test the reliability of the emotional intelligence information, I also included concepts that have been shown in previous research to correlate with emotional intelligence, such as challenge, coping style inventories, alexithymia, grit, and emotional regulation. The scales of interest for my study were:

The Trait Meta Mood Scale (TMMS), which consists of 48 questions measuring emotional intelligence in terms of attention to feelings, clarity of feelings, and mood repair. (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). The reliability of the TMMS sub-scales, which were the main scales of interest, were $\alpha_{(clarity)}= 0.86$, $\alpha_{(repair)}= 0.84$, and $\alpha_{(attention)}= 0.80$.

The Short Grit Scale (GRIT-S) is 8 items measuring grit, which is commitment to a long-term goal (Duckworth & Quinn, 2009).

The Emotion Regulation Questionnaire (ERQ), which measures expressive suppression and cognitive reappraisal (Gross & John, 2003). This means either changing how you are thinking about a situation or selectively not expressing an emotion.

The Toronto Alexithymia Scale (TAS-20), which contains 20 items examining difficulty in identifying feelings, difficultly describing feelings, and tendencies towards externally oriented thinking (Bagby, Parker, & Taylor, 1993). Externally oriented thinking refers to qualities such as preferring to ask people about what they did in a given day rather than how they are feeling.

The Range and Differentiation of Emotional Experience Scale (RDEES) contains 14 items measuring range and differentiation targeting the experience of emotions (Kang & Shaver, 2004).

The Differentiation of Positive Emotion Scale (DOPES), which was used to measure emotional differentiation (Kirby, Tugade, Smith, & Morrow, 2009). The DOPES is meant to assess the degree to which individuals tend to report differentiated or undifferentiated positive emotions in response to positive vignettes by examining the extent to which the participant reports feeling interested/curious, proud, grateful, challenges/determined/motivated, hopeful, happy, awed, and content/satisfied in response to the situation.

The Trait Challenge Scale, AFCP, and PFCP were included for an ongoing project by another lab member (McLain, 2012). The reliability for the entire survey across all scales was α= 0.86.

For consistency and survey fluidity, all scales with the exception of the DOPES were reduced to a five point Likert scale where participants were asked to indicate their extent of agreement with the statements with responses labeled "strongly disagree", "somewhat disagree", "neither agree nor disagree", "somewhat agree" and "strongly agree". Items from the various measures were intermixed (See Appendix A).

Procedure

The comprehensive survey described above was administered to participants who signed up for the study on SONA via Research Electronic Data Capture (REDcap), which is an online data collection, management, and exportation tool hosted at Vanderbilt University (Harris, Taylor, Thiele, Payne, Gonzalez, & Conde, 2009; Vanderbilt Institute for Clinical and Translational Research grant support UL1 TR000445 from NCATS/NIH). Because it was an online study, participants completed the survey on their own time, at their convenience.

Study 2

Participants

There were 45 participants who completed all procedures in the buffering laboratory portion of the study (9 Male, 36 Female). Participants were recruited through the same manner as described in Study 1. Participants were randomly assigned to either the Positive or Neutral mood induction condition (21=Positive condition, 24=Neutral condition).

Materials/Measures

Part 2 of the study used the Discrete Emotions Adjective List (DEAL/FEEL), which lists emotions adjectives and asks participants to indicate the extent to which they are currently experiencing the emotions from "not at all" to "moderately" to "extremely" on a 7-point scale in order to assess mood throughout the experiment (Kirby, Yih, & Smith, 2013), (See Appendix B). Although the DEAL contains 23 emotion adjectives, for brevity's sake and because my hypotheses did not involve specific emotions, I grouped the 12 positive (relief, calm, determination, gratitude, interest, hope/optimism, pride,

amusement, curiosity, happiness, eagerness, and satisfaction) and 10 negative
(resignation, frustration, anger, boredom, anxiety, overwhelmedness, fear, annoyance,
embarrassment, and disappointment) emotions together to form a composite positive and
composite negative score for each participant for each the baseline, mid, and post stressor
mood assessments, which were used in the results analysis. Surprise was considered a
neutral emotion and not included in analysis.

Participants were given a writing task to write about either 3 happy experiences
and then elaborate on 1 (Positive condition) or give a description of 3 convenience stores
located on Vanderbilt's campus and then elaborate on 1 (Neutral condition) (See
Appendix C). For the word task stressor, participants listed words that begin with "J" for
2 minutes, while experimenters manually and audio recorded their responses using
Amadeus Pro, a sound recording computer program. Experimenters told participants the
average Vanderbilt student could list 30 words, which is an overestimation to elicit
additional social pressure. Prior research has shown the writing task to be a successful
mood manipulation and the word task to be a successful stress manipulation (Ong, 2013).

Questionnaires were administered on a Mac computer located in a psychological
science laboratory on Vanderbilt's campus (Wilson 210D). Data were collected via
REDcap. The data were later exported to Excel and R for analysis.

Procedure

When participants arrived, the experimenter gave them a consent form and
explained that they will be engaging in a series of cognitive tasks to assess how their
attitudes and beliefs affect task performance. Participants first completed a baseline
mood assessment (Pre-DEAL) (Appendix B).   The experimenter then gave participants

the writing task mood induction (See Appendix C). Participants entered their responses

into a text box in REDcap. After the writing task, the experimenter had the participant

fill out the mood assessment again via REDcap (Appendix B). Immediately following

that, the experimenter used Amadeus Pro to administer the word task as a stressor. After

the word task stressor, the experimenter administered the final DEAL survey (Appendix

B). Finally, the experimenter debriefed the participants, explaining the word task as a

stressor and the mood induction's role in buffering (For a full script of the study, see

Appendix D).

Results

I conducted correlational analyses on the various subscales in the online

emotional intelligence screening survey described in Study 1. For the scope of this paper,

I will only be discussing the results of the correlations with the sub-scales of the Trait

Meta Mood Scale (*Clarity*, *Attention*, and *Repair*). Please note that although the

correlations were calculated with missing data, there did not appear to be any systematic

patterns in missing items. 22/149 surveys were not complete, with the most missed item

being TMMS 36 (14.8% of responses missing). Because the correlations between the

TMMS sub-scales were 0.32, 0.50, and 0.22, I decided to conduct the analysis on the

various facets (*Clarity*, *Attention*, and *Repair*) separately (See Table 3).

Table 3: Correlates Among Sub-Scales of TMMS

	TMMS_Clarity	TMMS_Attention	TMMS_Repair
TMMS_Clarity	1	0.317***	0.502***
TMMS_Attention	0.317***	1	0.218**
TMMS_Repair	0.502***	0.218**	1

*=<.05, **=<.01, ***=<.001

In terms of correlations of significance, emotional intelligence was negatively

correlated with all sub-scales of the Toronto Alexithymia Scale, and positively correlated

with grit, emotional range and experiential differentiation, accommodative focused and

problem focused coping, trait challenge, and emotional regulation (See Table 4). The

correlation with alexithymia means that the greater emotional intelligence one has, the

less difficulty he or she has describing feelings, identifying feelings, and the less he or

she relies on externally oriented thinking, such as preferences for observation instead of

internal reflection and analysis (Bagby et al., 1993). This was expected, simply based on

the meaning of the two constructs because they are, by definition, almost completely

opposite. For example, high emotional intelligence is a heightened ability to understand,

identify, and manage emotions, whereas alexithymia is difficulty in these facets,

particularly describing emotions (Mayer & Salovey, 1997; Bagby et al.,1993).

Conversely, emotional intelligence was positively correlated with grit, range, emotion

differentiation, coping, challenge, and emotion regulation, which again, was expected

based on the meaning of these constructs. One would expect that higher emotional

intelligence would yield greater resolve in the face of challenges (grit and challenge),

regulation and coping to understand and move past adverse events (emotion regulation,

and problem and accommodative focused coping), and finally greater emotional range

and specificity of experience, or at least the ability to identify and report greater

experiential diversity of emotions. Clarity specifically was most highly positively

correlated with emotion differentiation, meaning the higher emotional clarity one has, the

more likely they are to differentiate and understand the subtleties between their emotional

experiences. Attention to emotions was most highly correlated with range, meaning that

people who pay attention to their emotions also report experiencing a wide range of

emotions, which seems logical in the sense that they are noticing the change in emotions

they are feeling. Finally, mood repair was most positively correlated with coping and

trait challenge. Thus, participants who report repairing their mood are also more likely to

report using problem and accommodative focused coping as well as higher levels of trait

challenge, which they are likely able to achieve because they are repairing their mood

and coping with difficulties that arise in the face of challenges.

Table 4: Trait Correlates of EI

	TMMS_Clarity	TMMS_Attention	TMMS_Repair
TMMS_Clarity	1	0.317***	0.502***
TMMS_Attention	0.317***	1	0.218**
TMMS_Repair	0.502***	0.218**	1
TAS_Identifying	-0.278***	-0.0004	0.059
TAS_Describing	-0.437***	-0.394***	-0.001
TAS_EOT	-0.437***	-0.495***	-0.326***
Grit	0.281***	-0.068	0.300***
RDEES_Range	0.463***	0.677***	0.278***
RDEES_Differentiation	0.583***	0.333***	0.463***
AFCP	0.503***	0.064	0.666***
PFCP	0.563***	0.114	0.630***
Trait_Chall	0.555***	0.131	0.618***
ERQ_Reappraisal	0.435***	0.108	0.539***
ERQ_Suppression	0.330***	0.006	0.425***

*$p<0.05$, **$p<0.01$, ***$p<0.001$

Mood Manipulation Check

To begin addressing the mood aspect of the buffering question, it first had to be

confirmed the mood manipulation had been effective in increasing happiness in the

Positive condition and not in the *Neutral* condition. Furthermore, I examined if the

writing task mood induction increased the *Composite Positive Affect* score compared to

Composite Negative Affect as reported by participants after the task.

Figure 1: Average Change in Reported Happiness for *Positive* and *Neutral*

Condition Before and After the Mood Induction

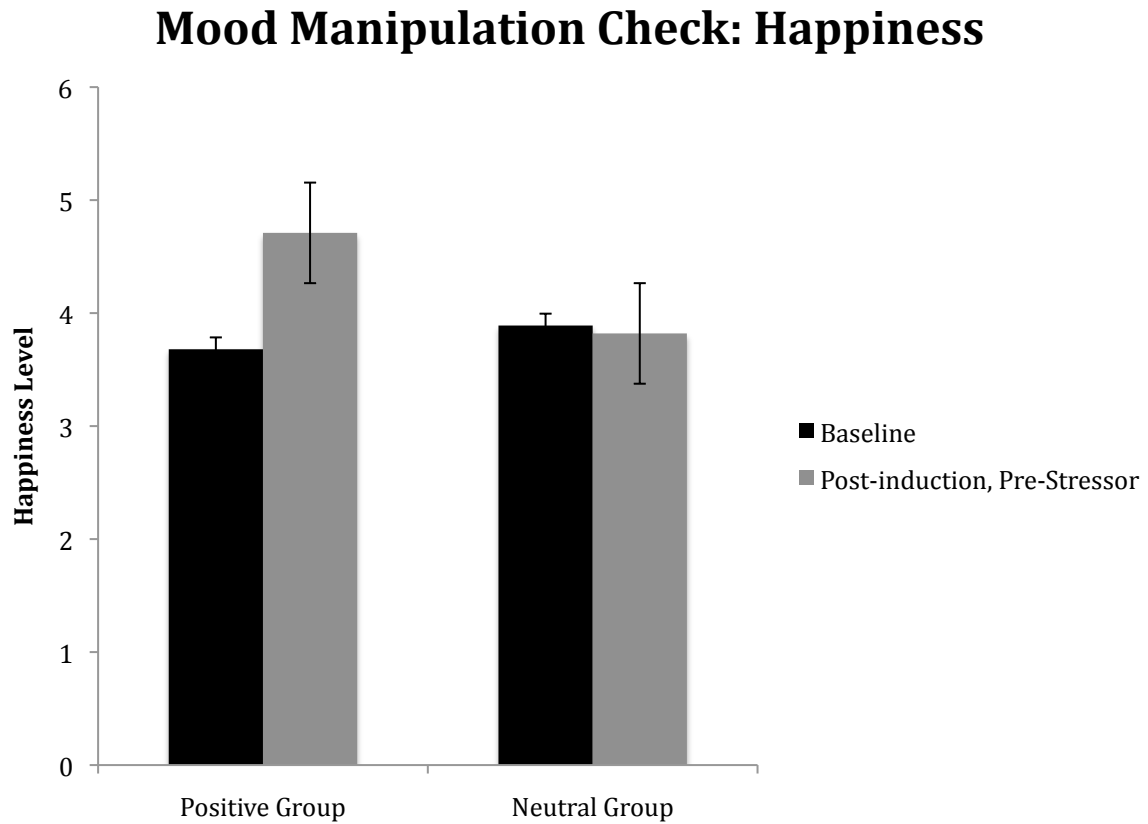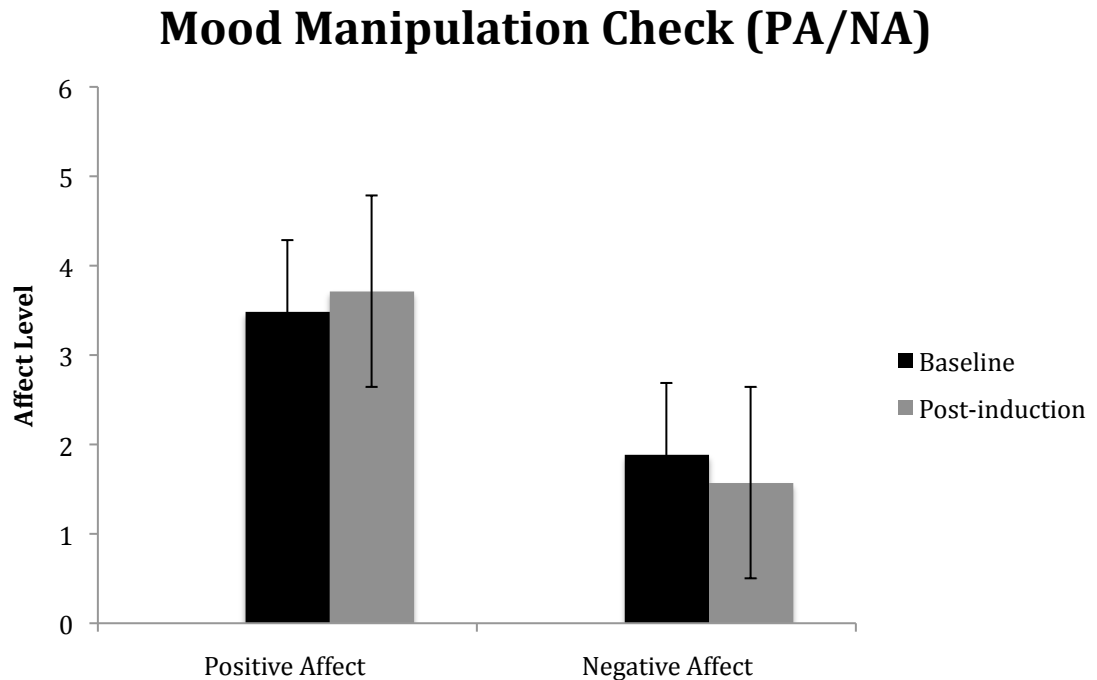
Mood Manipulation Check: Happiness

Figure 2: Average Change in Reported *Positive Affect* and *Negative Affect*

in *Positive* and *Neutral* Condition Before and After the Mood Induction

Mood Manipulation Check (PA/NA)

As shown, the mood manipulation was effective in increasing happiness in the

Positive condition (t = -2.22, p-value = 0.03*) and not in the *Neutral* condition (t = 0.19,

p-value = 0.85). In a more global analysis, the mood induction did not significantly

increase general *Positive Affect* (t=-1.07 p=0.29 *ns.*), but did significantly reduce

Negative Affect (t = 1.85, p-value = 0.07.). Overall, the results yielded the predicted trend

and thus the mood manipulation was effective. See Appendix E for more information.

Stress Manipulation Check

Regardless of condition, the average change in *Composite Negative Affect* means

before and after the stressor was -1.34, meaning that after the stressor, on average,

participants reported their *Negative Affect* to be 1.34 units greater on the 7-point scale

than it was before the stressor (See Appendix E). Thus, the stressor was effective in

increasing overall *Negative Affect* post-stress (t = -6.42, p-value = 1.04e-08***).

Figure 3: Average Change in NA Before and After the Word Task Stressor

Stress Manipulation Check
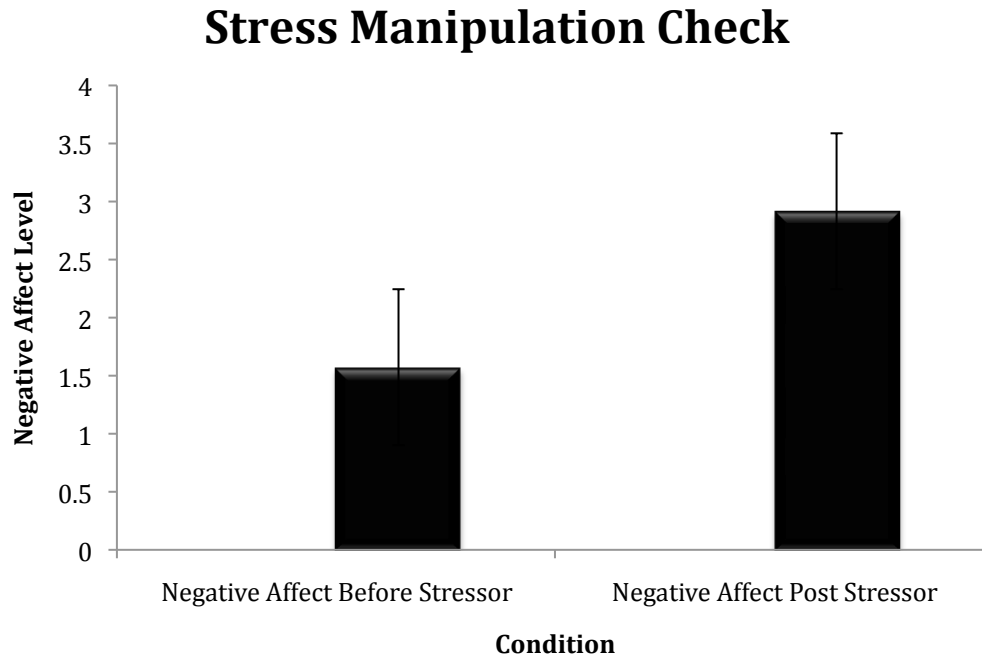
Hypotheses Tests: Regression Analysis on Predictors of Buffering

Next, regression analyses were used to examine the most significant predictors of

buffering. As mentioned above, *Composite Positive* and *Composite Negative* score refer

to the average of the 12 positive emotions and 10 negative emotions contained in the

DEAL. Additionally, high and low emotional intelligence scores were divided by median

split of their respective sub-scales for the regression analysis (*Clarity* median=39,

Attention median=51, *Repair* median=22; See Appendix F). A median split was used as

the high and low EI distinction due to difficulty recruiting additional participants for the

study.

Main Effect for Condition

There was no main effect for *Condition* on *Unique Words* or *Positive* or *Negative*

Affect post stressor, after controlling for previous moods. The same was true for the

Change in Positive and *Negative Affect* before and after the stressor (See Appendix G).

The average number of *Unique Words* generated in *the Positive Condition* was 12.48 and

in the *Neutral Condition*, 12.96 (*ns*).

Figure 4: Means of Positive and Negative Affect by Condition Over the Course of the

Experiment (Baseline to Post Mood Induction/Pre Stressor to Post Stressor)

Means of PA/NA by Condition
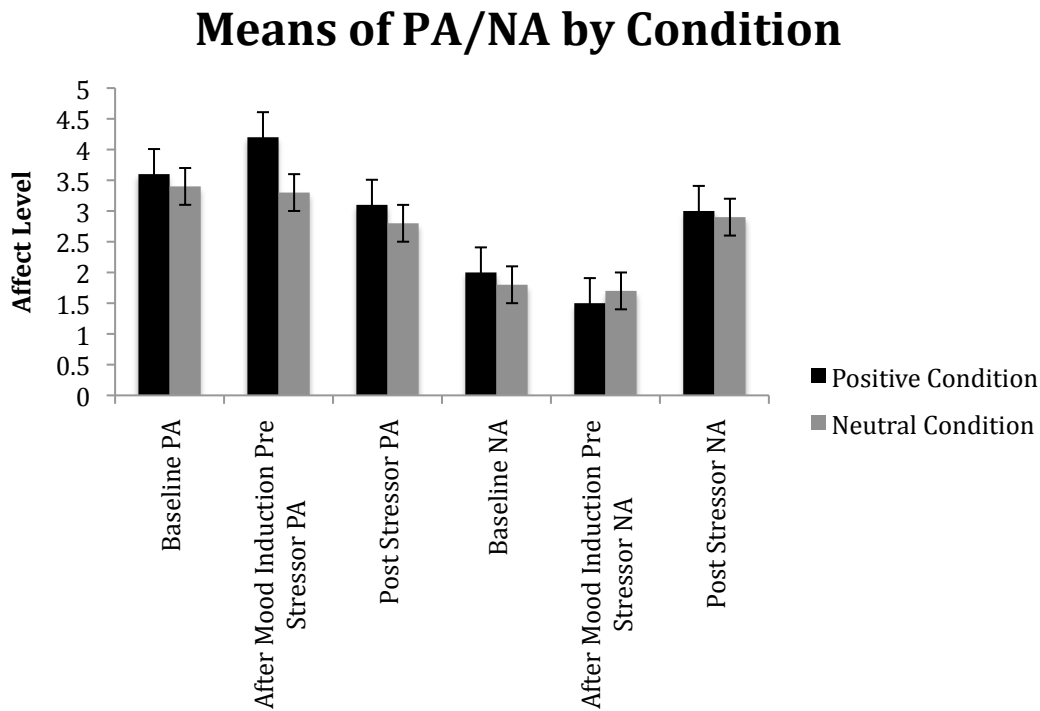
Main effect for EI Sub-scale

The means of *Composite Positive* (post stressor), *Composite Negative* (post stressor),

Positive Affect Change (from before to after stressor), *Negative Affect Change* (from

before to after stressor), and number of *Unique Words* generated (performance on

stressor task) can be found sorted by high and low groups for each EI sub-scale in Table

5. Additional information on means can be found in Appendix G.

Table 5: Means of *Positive* and *Negative* Emotion Outcomes (post-stressor) and

Number of *Unique Words* by EI Sub-scale Group

High Clarity				
Positive Affect Post Stress	Negative Affect Post Stress	PA Change Before-After Stressor	NA Change Before-After Stressor	Unique Words
2.92	2.75	0.71	-1.31	13.13
Low Clarity				
Positive Affect Post Stress	Negative Affect Post Stress	PA Change Before-After Stressor	NA Change Before-After Stressor	Unique Words
3.01	3.09	0.79	-1.37	12.32

High Attention				
Positive Affect Post Stress	Negative Affect Post Stress	PA Change Before-After Stressor	NA Change Before-After Stressor	Unique Words
3.01	1.75	0.91	-1.44	13.00
Low Attention				
Positive Affect Post Stress	Negative Affect Post Stress	PA Change Before-After Stressor	NA Change Before-After Stressor	Unique Words
2.84	2.98	0.62	-1.27	12.52

High Repair				
Positive Affect Post Stress	Negative Affect Post Stress	PA Change Before-After Stressor	NA Change Before-After Stressor	Unique Words
3.15	2.77	0.74	-1.33	12.63
Low Repair				
Positive Affect Post Stress	Negative Affect Post Stress	PA Change Before-After Stressor	NA Change Before-After Stressor	Unique Words
2.60	3.21	0.77	-1.37	12.93

The regression analysis did not yield a significant main effect for EI sub-scale

with the exception of *Clarity* predicting more *Unique Words* ($p<0.01$) after controlling

for *Negative Composite* scores in the baseline and post mood induction, pre stressor

mood assessments (See Appendix G). The same was true for *Clarity* predicting more

Unique Words when controlling for *Composite Positive Affect* in the baseline and mid-experiment mood assessments (p<0.05).
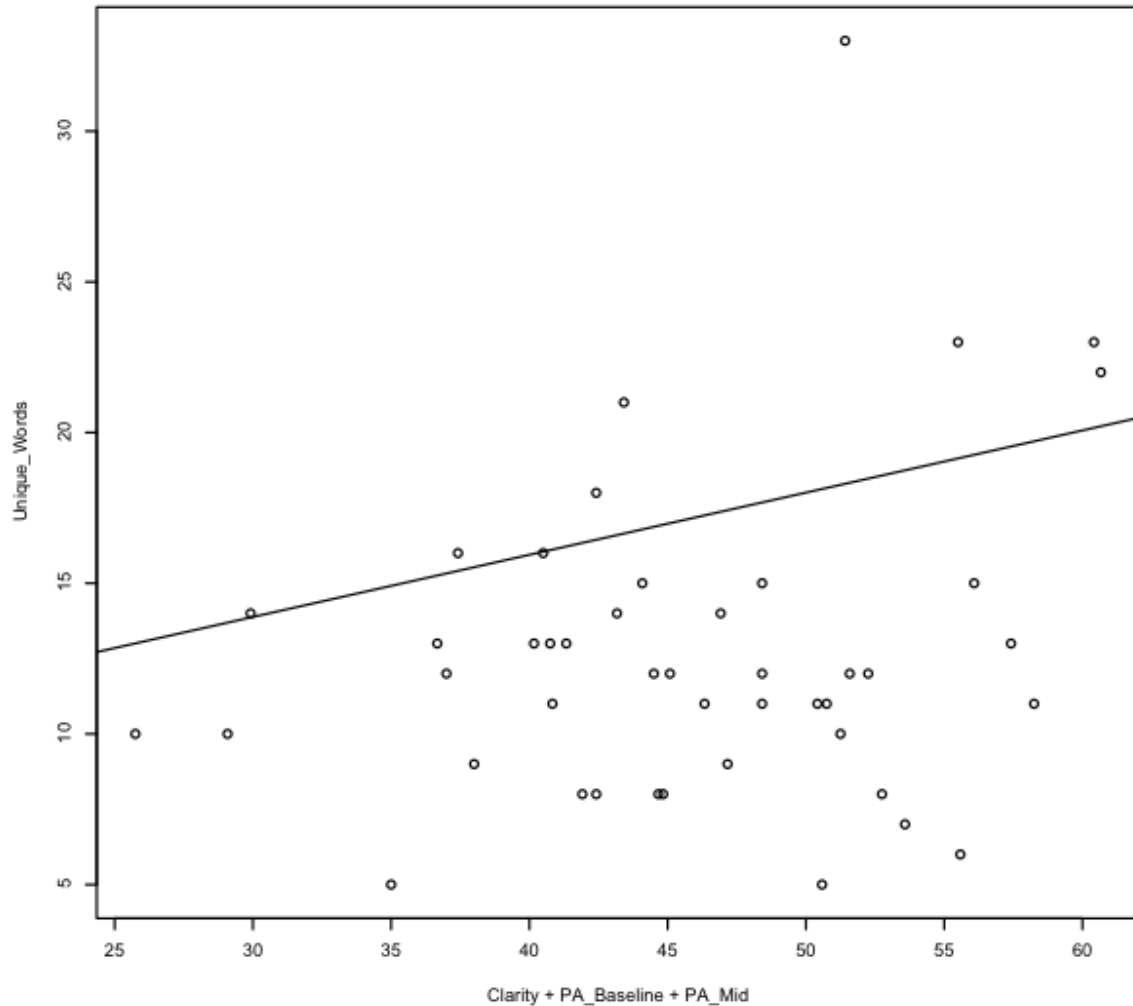
Figure 5: Linear regression for *Clarity* Predicting *Unique Words*

Generated (After Controlling for *Baseline NA* and *Mid NA*)
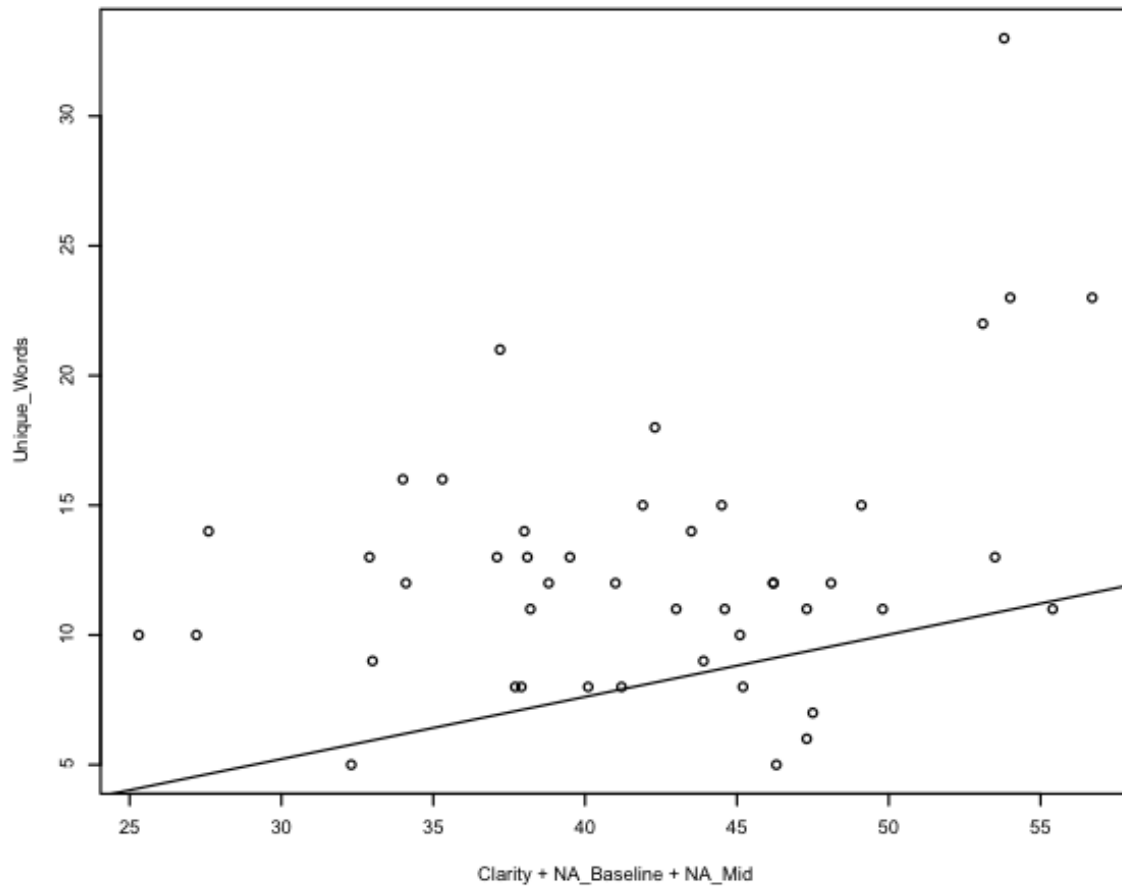
Unique Words= 0.24 (*Clarity*) + 5.00 (*Negative Affect Baseline*) - 2.55 (*Negative Affect Mid*)

Adjusted R^2 = 0.4178, p-value=1.296E-05

Figure 6: Linear regression for *Clarity* Predicting *Unique Words*

Generated (After Controlling for *Baseline PA* and *Mid PA*)

Unique Words= 0.21 (*Clarity*) - 2.05 (*Positive Affect Baseline*) + 1.13 (*Positive Affect Mid*)

Adjusted R^2 =0.08, p-value=0.09

Interaction Effects

Many of the interactions were not significant as well, with the exception of the

Neutral Condition and high *Attention* interaction predicting lower *Negative Affect* post

stress (p<0.1) as well as predicting lower *Change in Negative Affect* from right before to

after the stressor (p<0.1). *Condition* was also significant in both of these equations at p<0.05. All equations controlled for previous positive and negative mood (as reported by baseline and mid-experiment mood assessments). Thus, participants with high *Attention* to emotions in the *Neutral Mood Condition* were more likely to report lower *Negative Affect* after the stressor after controlling for how they previously reported feeling. (See Appendix G).

Figure 7: *Negative Affect* Level After Word Task Stressor by *Condition* and High or Low *Attention to Emotions* Group

Attention X Condition Interaction in Predicting Negative Affect Post Stress
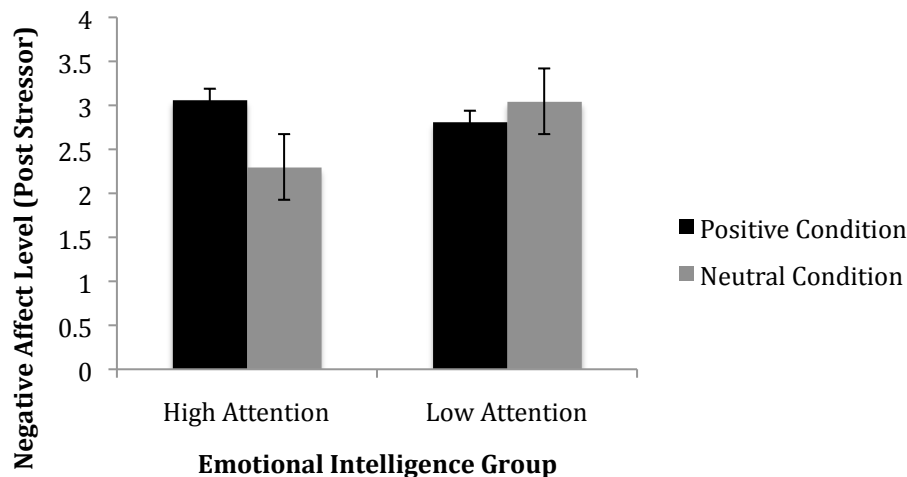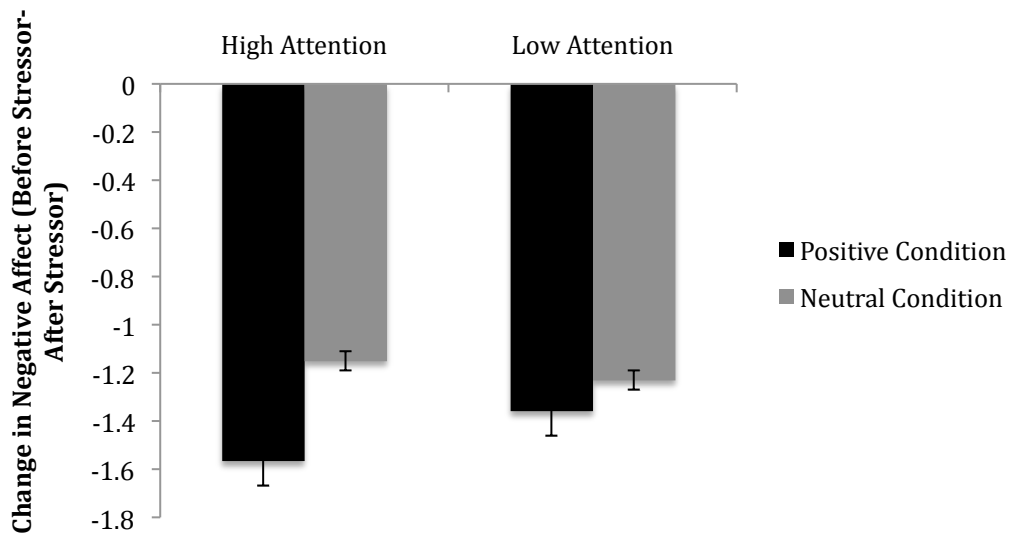

Negative Affect Post Stress= -0.03 (*Attention*) - 0.24 (*Negative Affect Baseline*) + 1.16 (*Negative Affect Mid*) + 2.05 (*Condition*) - 0.04 (*Attention*Condition)*

Adjusted R^2=0.4393, p-value=3.269E-05

Figure 8: *Change in Negative Affect* Level (Before to After Stressor) by

Condition and High or Low *Attention to Emotions* Group

Condition X Attention in Predicting Change in NA Pre and Post Stressor

Change in Negative Affect from Before and After Stressor= 0.03 (*Attention*) + 0.14 (*Negative Affect Baseline*) - 1.95 (*Condition*) + 0.03 (*Attention*Condition*)

Adjusted R^2 =0.067, p-value=0.15

Overall, the results fail to reject the null hypothesis being tested, and fail to show

emotional intelligence facets *Clarity*, *Attention*, and *Repair* as defined by the Trait Meta

Mood Scale to be predictive of lower *Negative Affect* post stress alone, or when

combined with a pre-stress mood induction.

Further Exploration

Because the hypotheses were not supported, I conducted further regressions on

the affective assessment after the mood induction, before the stressor, to explore whether

emotional intelligence (*Clarity*, *Attention*, and *Repair*) was predictive of emotional

response to the mood induction. When controlling for previous mood and condition,

Repair inversely predicted *Negative Affect* post mood induction at p<0.05 (*Negative Affect Mid*= 0.57 (*Negative Affect Baseline*) - 0.16 (*Condition*) - 0.04 (*Repair*), Adjusted R^2= 0.4721, p-value= 1.83E-06). *Condition* was also marginally significant in predicting lower *Negative Affect* response (p<0.1). Including the *Repair* X *Condition* interaction in the analysis, *Condition* was a significant predictor at p<0.05 and *Repair* at p<0.01 in predicting lower *Negative Affect*. The interaction was significant at p<0.05 (*Negative Affect Mid*= 0.53 (*Negative Affect Baseline*) - 0.97 (*Condition*) - 0.05 (*Repair*) + 0.04 (*Condition*Repair*), Adjusted R^2=0.5209, p-value=7.412E-07). More detailed results can be found in Appendix G. Thus, in the absence of buffering support, the data did yield evidence of emotional *Repair* lowering *Negative Affect*, controlling for previous mood and *Condition*, after the writing task mood induction. This trend of high emotional intelligence predicting lower post task *Negative Affect,* was what we would have hoped to find in the previous section, predicting the stressful word task. Although that was not the case, we are still able to conclude that emotional intelligence, specifically mood *Repair,* may have an effect on predicting outcomes on non-stressful tasks.

Discussion

The results of the study, although not entirely conclusive on trait emotional intelligence's effect on buffering, did yield important and interesting implications. One such implication is that the study strengthened support for the writing task mood induction in elevating happiness in the positive condition. The stressor was also supported to be effective in increasing overall negative affect. Furthermore, higher emotional clarity predicted better performance on the stressful word task (in terms of generating more words) after controlling for previous positive and negative affect. These

findings add a new dimension the previous research, which found positive mood induction resulted in better performance on the word task compared to neutral mood induction (Ong, 2013). Because the current study did not show this same trend, clarity was actually a stronger predictor in this case on enhanced performance on the task. Emotional attention interacting with mood condition also showed promise for decreasing post stress negative affect, following the logic of the buffering hypothesis, although the results were only marginally significant. Furthermore, emotion repair showed promise of inducing buffering for the writing task, but because this task was not deemed to be stressful, it does not fully follow the buffering hypothesis, which specifically refers to adverse, negative, or stressful events to induce buffering, as opposed to a positive or neutral task such as the experiment's mood induction (Carver, 1996; Cohen & Wills, 1985).

Limitations

Some of the limitations of the study include homogeneous subject sample, low number of participants, and the fine distinction between the high and low emotional intelligence groups.

Because all participants were of similar in age and Vanderbilt undergraduates, they were likely very similar among many demographics factors beyond age and education. Furthermore, only 45 participants completed both the online study (Study 1) and entire buffering study (Study 2), leaving a small sample from which to make generalized observations. Additionally, the distinction between the high and low EI groups was made by a median split. Ideally, in future studies, if more data were to be collected, EI groups could be differentiated by the extreme percentages, rather than using

the middle scores which may have led to the high and low groups being defined to be too similar to yield significance.

Future Direction

In the future, researchers could look further into the idea of emotional clarity predicting more words in the writing task in terms of TMMS validity. Because clarity was a predictor of greater number of words, it could be possible that the TMMS clarity subscale not only addresses emotional clarity, but also is inherently implicated with greater linguistic ability, or ability to generate and express words. Additionally, future research could look at defining trait emotional intelligence in a different manner, rather than a median split of Trait Meta Mood Sub-Scale scores. A direction I hope to take in the future is to examine buffering and emotional differentiation over time in a longitudinal design, rather than in a one-time latitudinal study. Emotional intelligence, differentiation, and buffering examined over time could help better capture their complexity and allow us to more deeply understand differential health, stress, and coping outcomes among college populations, thus leading to greater insight on how to put these constructs to use in both clinical and everyday settings.

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Appendix A

Kuzmuk Honors Thesis Initial Survey

Attitudes And Reactions Survey

Please complete the survey below.

Thank you!

You are invited to participate in a study under the direction of Dr. Leslie D. Kirby, in the Department of Psychology at Vanderbilt University. The purpose of this study is to explore attitudes and values of students, as well as basic personality information. Participants in this study will be eligible to complete future studies in our lab.

Before taking part in this study, please read the consent form below. After reading the consent form, please enter your initials at the bottom of this page if you understand the statements and freely consent to participate in this study.

Consent Agreement This study is an anonymous survey, and as a participant in this study, you will be asked to answer a series of questions that ask you about your attitudes, beliefs and behavioral tendencies.   The entire survey should take approximately 40 minutes to complete, but could take longer, depending on how much you deliberate on the individual questions. The survey is COMPLETELY ANONYMOUS. Your name or other identifying information is not collected at any time. Your computer's IP address is also not being recorded. No one from the research project will be able to associate your answers with you, or even know whether or not you have participated in the survey. All data will be pooled and published in aggregate form only.   However, since participants in this study will be eligible for future studies, we need to be able to link your responses across the studies, but also preserve your anonymity. As a result, if you choose to participate in this study, you will create an ID that will be unique to you, but anonymous to us.   Many individuals find participation in surveys to be enjoyable and self-informative, and no adverse reactions have been reported to date. You will receive SONA credit for completing this study. There is no compensation available for participating in this survey, and your participation is completely voluntary. As such, you may freely opt not to answer particular questions, and you may end your participation in the survey at any time, without penalty. To participate in this study you must be 18 years of age or older. This survey has been reviewed and approved by the Vanderbilt University Institutional Review Board. If you have any questions or concerns about this study, please contact the principal investigator, Dr. Leslie Kirby, Department of Psychology, 301 Wilson Hall, Vanderbilt University, Nashville TN 37203; (615) 322-0059; leslie.kirby@vanderbilt.edu.   If you are 18 years of age or older, understand the statements above, and freely consent to participate in this survey, enter your initials in the box below:

_____

REDCap

Participants who complete this study will be eligible to complete future studies in our lab. We need to be able to link your responses, but also preserve your anonymity. As a result, you will create an ID that will be unique to you, but anonymous to us. To determine your ID, please enter the street NUMBER (not name) of your current permanent home address (so if your permanent address is 500 Main St, you would enter 500), followed by your mother's middle initial (write N if your mother does not have a middle name), followed by the two-digit DAY (01 through 31) of your birth (not the month or year, just the day). It is critical that you consistently use this ID whenever asked. Please enter your seven-digit ID for this study here:

_____

Gender	
	☐ Male
	☐ Female

Age	
	☐ 17
	☐ 18
	☐ 19
	☐ 20
	☐ 21
	☐ 22
	☐ Other

Please enter your age   _____

Year in School	
	☐ College Freshman
	☐ College Sophomore
	☐ College Junior
	☐ College Senior
	☐ College Graduate
	☐ Graduate Student
	☐ Other

Please respond to the following survey by considering each of the statements that follow and using the rating scale to indicate the degree to which you agree or disagree with the statement. Please select one answer for each question. Thank you!

The variety of human feelings makes life more interesting.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I enjoy tackling problems that are completely new to me.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

In general, when faced with a stressful situation, I am confident of my ability to deal with it.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I don't experience many different feelings in everyday life.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I try to think good thoughts no matter how badly I feel.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am often confused about what emotion I am feeling.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I know I can handle unexpected events.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I don't have much energy when I am happy.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

New ideas and projects sometimes distract me from previous ones.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

People would be better off if they felt less and thought more.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am aware of the different nuances or subtleties of a given emotion.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

The more difficult the problem, the more I enjoy trying to solve it.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I usually don't have much energy when I'm sad.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

It is difficult for me to find the right words for my feelings.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I'm angry, I usually let myself feel that way.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I experience a setback, I don't know if I will be able to cope.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Setbacks don't discourage me.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I don't think it's worth paying attention to your emotions or moods.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I have experienced a wide range of emotions throughout my life.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I don't usually care much about what I'm feeling.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I know that I can deal with uncertainty, no matter how challenging.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I have physical sensations that even doctors don't understand.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I seek out activities that will challenge me.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Please continue

Sometimes I can't tell what my feelings are.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I have been obsessed with a certain idea or project for a short time but later lost interest.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

If I find myself getting mad, I try to calm myself down.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Each emotion has a very distinct and unique meaning to me.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I find it hard to keep my composure in stressful situations.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I have lots of energy when I feel sad.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am able to describe my feelings easily.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am rarely confused about how I feel.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am a hard worker.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am able to make the best out of any situation.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I think about my mood constantly.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I often feel a sense of determination.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I usually experience a limited range of emotions.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I don't let my feelings interfere with what I am thinking.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I prefer to analyze problems rather than just describe them.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When things don't go my way, I often feel hopeless.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Feelings give direction to life.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I often set a goal but later choose to pursue a different one.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Although I am sometimes sad, I have a mostly optimistic outlook.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I tend to draw fine distinctions between similar feelings (e.g., depressed and blue; annoyed and irritated).

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am often unable to take action in difficult situations.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I am upset I realize that the "good things in life" are illusions.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I am upset, I dont know if I am sad, frightened, or angry.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I believe in acting from the heart.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I know that I will able to deal with any stressful situation I may encounter.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I have difficulty maintaining my focus on projects that take more than a few months to complete.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I can never tell how I feel.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Please continue

I experience a wide range of emotions.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When something unforeseen happens, I find it hard to adjust to the new situation.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I am happy I realize how foolish most of my worries are.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I seek out opportunities to feel challenged in my daily life.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am often puzzled by sensations in my body.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I believe it's healthy to feel whatever emotion you feel.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I finish whatever I begin.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When faced with a challenging situation I trust myself to make it through.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

The best way for me to handle my feelings is to experience them to the fullest.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am aware that each emotion has a completely different meaning.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When faced with setbacks, I increase my efforts.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I become upset I remind myself of all the pleasures in life.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I know I will get through whatever comes my way.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I prefer to just let things happen rather than to understand why they turned out that way.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am eager to tackle challenging tasks.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

My beliefs and opinions always seem to change depending on how I feel.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am diligent.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I know I can adjust to my circumstances, whatever they might be.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I usually have lots of energy when I'm happy.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I avoid difficult or uncertain situations.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I don't experience a variety of feelings on an everyday basis.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am often aware of my feelings on a matter.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I feel I can always find ways to improve my circumstances.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I have feelings that I can't quite identify.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

REDCap

I feel energized when faced with a demanding task or situation.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I'm depressed, I can't help but think of bad thoughts.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am usually confused about how I feel.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I find I can almost always find a solution to my problems.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

New challenges are exciting to me.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

If emotions are viewed as colors, I can notice even small variations within one kind of color (emotion).

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

One should never be guided by emotions.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

If I work hard, I can get what I want.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Being in touch with emotions is essential.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

If I'm in too good of a mood, I remind myself of reality to bring myself down.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I enjoy doing things outside of my "comfort zone".

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Please continue

I keep my emotions to myself.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I never give in to my emotions.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

If I try hard enough, I can always find a solution to the problem at hand.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Feeling good or bad --- those terms are sufficient to describe most of my feelings in everyday life.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I look forward to opportunities to test the limits of my skills and abilities.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Although I am sometimes happy, I have a mostly pessimistic outlook.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I find it hard to describe how I feel about people.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I feel at ease about my emotions.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When faced with a challenge, I am determined to reach my goal.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I'm faced with a challenge, I am able to find more than one way to overcome it.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

It's important to block out some feelings in order to preserve your sanity.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I enjoy trying to solve complex problems.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am aware of the subtle differences between feelings I have.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I pay a lot of attention to how I feel.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

If I am unable to succeed the first time, I do not know what my next step would be.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

People tell me to describe my feelings more.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Much of the time my thoughts are focused on a task that I wish to accomplish.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I'm in a good mood, I'm optimistic about the future.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I am feeling positive emotions, I am careful not to express them.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I can't make sense of my feelings.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

No matter what obstacles are present, I can find a way to succeed.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I freeze up in difficult situations.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I tend to experience a broad range of different feelings.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I don't pay much attention to my feelings.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Please continue

I don't know what's going on inside me.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

No matter how bad the situation, I know there is always something I can do to improve it.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Whenever I'm in a bad mood I'm pessimistic about the future.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I never worry about being in too good a mood.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I experience a setback, I feel even more determined to succeed.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am good at distinguishing subtle differences in the meaning of closely related emotion words.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I believe I can accomplish almost anything if I work hard enough.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I often think about my feelings.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I often don't know why I am angry.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I am usually very clear about my feelings.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I feel like I can meet the demands of most situations I face.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

REDCap

When problems arise, I know I can just fix them.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I control my emotions by not expressing them.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

No matter how badly I feel, I try to think about pleasant things.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I prefer talking to people about their daily activities rather than their feelings.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Feelings are a weakness humans have.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I want to feel more positive emotion, I change the way I'm thinking about the situation.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I get started on something, I usually persevere until I finish.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I have a hard time coming up with plans to solve my problems.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I prefer to watch "light" entertainment shows rather than psychological dramas.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I usually know my feelings about a matter.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I am able to focus on the task at hand.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I control my emotions by changing the way I think about the situation I'm in.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

It is difficult for me to reveal my innermost feelings, even to close friends.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

It is usually a waste of time to think about your emotions.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

When I am feeling negative emotions, I make sure not to express them.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

Even when I am unsure, I am determined to meet the challenges ahead.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

I lack the abilities I need to succeed.

☐ strongly disagree   ☐ somewhat disagree   ☐ neither agree nor disagree   ☐ somewhat agree
☐ strongly agree

REDCap

Please continue

I can feel close to someone, even in moments of silence.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I decide to do something, I can't wait to get started.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I am happy I sometimes remind myself of everything that could go wrong.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When I want to feel less negative emotion, I change the way I'm thinking about the situation.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I find examination of my feelings useful in solving personal problems.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

When dealing with a problem, I am determined to solve it.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I almost always know exactly how I am feeling.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I often wake up eager to take on the challenges ahead.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

Looking for hidden meanings in movies or plays distracts from their enjoyment.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I can perform a wide variety of tasks.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

I avoid uncomfortable situations.

☐ strongly disagree ☐ somewhat disagree ☐ neither agree nor disagree ☐ somewhat agree
☐ strongly agree

For the next set of questions, you will see brief descriptions of 8 hypothetical situations. Each situation is followed by a series of questions. For each situation please try to imagine yourself in the situation as vividly as you can. If such a situation happened to you, how would you be feeling while you were experiencing it? As you imagine yourself in the situation, try to experience these feelings. Then, when you are imagining yourself in the situations as vividly as you can, please answer the questions that follow to describe your feelings within the imagined situation. When you have answered all the questions for one situation you should go onto the next situation, until you have imagined yourself in all 8 situations. There are no right or wrong answers. Please try to answer every question as best you can, and make it true for you.You are hiking up a hill through thick woods. It was raining earlier, but the rain stopped a short time ago, and the sun is now shining. All of a sudden, you come to a clearing near the top of the hill, and enter a beautiful meadow filled with wildflowers and butterflies. A clear stream is running through the meadow, and there is a rainbow in the sky. Off in the distance you can see snow-capped peaks from a nearby mountain range. Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

You have been spending a fair bit of time trying to solve a difficult problem that is part of an important project you have been working on. So far you have been unable to solve the problem, but you believe that a solution is possible and you know that if you keep at it, you will be able to solve the problem and make the project a success.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

PROUD

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

GRATEFUL

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

HOPEFUL

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

HAPPY

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

AWED

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

After working very hard for several weeks, you are finally able to take some time off. Right now you are relaxing on the beach. There is a nice breeze, you have a drink, and you are relishing the knowledge that there's nothing at all you need to be doing right now.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

You are walking around in a strange city, and suddenly realize that you are lost. As you are standing at a street corner, intensely studying your map to try to figure out where you are, someone comes up to you and asks you in a friendly way where you are trying to go. After you tell this person, s/he says that s/he is headed that way and suggests you go together. Within a few minutes this person has taken you to your destination, having pointed out some interesting sights along the way.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

You're at a party on Saturday night in honor of your friend's wedding anniversary. You're with a group of close friends and family members, and the atmosphere is festive. You generally like special occasions like this when everyone comes together to have fun. Everyone, including you, is laughing and dancing, and having a great time.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

Things in your life have been somewhat difficult lately, but you are optimistic about what lies ahead. You know that there are new opportunities available to help things get better, and they seem promising. You trust that things will be better soon. You are looking forward to good things to come and a bright future ahead. You are thinking about the positive change that can happen.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

A public figure that you admire has come to town, and you have the opportunity to hear this person speak. You are out for the evening to attend the talk. It is a topic you have wanted to know more about for a long time. You have settled into your chair. The speaker, who has just been introduced, is beginning the presentation.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

You have been working very hard on a group project. The rest of your group members have been contributing, but you have gone the extra distance for the project. You know that the project wouldn't be nearly as good as it is had you not worked so hard. Your group has just presented the project and it is extremely well received. As your group is receiving praise for an excellent job, a member of your group speaks up and indicates that the group owes its success to you; that you had really pulled the project together. The other members of the group start spontaneously applauding you and your efforts.Below are several adjectives that describe different emotions or feelings. Please indicate the extent to which each adjective characterizes your feelings and emotions within the situation you just imagined:

INTERESTED // CURIOUS

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

PROUD

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

GRATEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CHALLENGED // DETERMINED // MOTIVATED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HOPEFUL

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

HAPPY

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

AWED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

CONTENT // SATISFIED

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

Appendix B

Kuzmuk Honors Thesis DEAL

Survey

Please complete the survey below.

Thank you!

EXPERIMENTER -- Please fill this out before the participant arrives.

1) Name of Experimenter

☐ Kellie
☐ Bonnie
☐ Domenique
☐ Dora
☐ Allison

2) Participant ID

_____

3) Condition

☐ P
☐ N

4) Pre, Mid, or Post

☐ Pre
☐ Mid
☐ Post

Please DO NOT complete this form until instructed to do so. Thank you!

5) We need to be able to link your responses to the different parts of this experiment, but also preserve your anonymity. As a result, you will create an ID that will be unique to you, but anonymous to us. To determine your ID, please enter the street NUMBER (not name) of your current permanent home address (so if your permanent address is 500 Main St, you would enter 500), followed by your mother's middle initial (write N if your mother does not have a middle name), followed by the two-digit DAY (01 through 31) of your birth (not the month or year, just the day). It is critical that you consistently use this ID whenever asked. Please enter your seven-digit ID for this study here:

_____

Below are a number of adjective clusters that describe different emotions or feelings. EACH group of adjectives is meant to convert to a SINGLE basic emotion or feeling.

Please indicate the extent to which you were feeling an emotion in the current moment.

6) surprised --- astonished

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

7) defeated --- resigned --- beaten

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

8) relieved --- unburdened

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

9) tranquil --- calm --- serene

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

10) frustrated --- thwarted --- exasperated

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

11) determined --- motivated --- persistent

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

12) grateful --- appreciative --- thankful

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

13) interested --- engaged

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

14) mad --- angry --- irate

☐ 1 not at all   ☐ 2   ☐ 3   ☐ 4 moderately   ☐ 5   ☐ 6   ☐ 7 extremely

15) hopeful --- optimistic

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

16) bored --- detached --- uninterested

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

17) nervous --- anxious --- apprehensive

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

18) overwhelmed --- overloaded --- rattled

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

19) proud --- triumphant

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

20) afraid --- frightened --- scared

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

21) irritated --- annoyed

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

22) amused

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

23) curious --- inquisitive

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

24) happy --- glad --- joyful

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

25) eager --- enthused --- excited

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

26) embarrassed --- humiliated

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

27) disappointed --- let down

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

28) satisfied --- content

☐ 1 not at all ☐ 2 ☐ 3 ☐ 4 moderately ☐ 5 ☐ 6 ☐ 7 extremely

Appendix C

Kuzmuk Honors Thesis Writing Prompt

My First Instrument

Please complete the survey below.

Thank you!

Participant ID   _____

Experimenter
☐ Kellie
☐ Bonnie
☐ Domenique
☐ Dora
☐ Allison

Condition
☐ P
☐ N

REDCap

Please respond to the following prompt as thoughtfully and throughly as possible by typing your answer into the text box on the right.

Please enter your seven-digit ID for this study here (street NUMBER, mother's middle initial, two-digit DAY (01 through 31) of your birth):

_____

There are many things in our lives, both large and small, that we might be happy about. Below, list three things or events in your life that have made you happy recently.

_____

There are many different buildings on campus, some of which have Munchie Marts.   Below, please list three Munchie Marts on campus that you've been in.

_____

In the space to the right, describe in detail the one situation that has made you the most happy recently, and describe it in such a way that a person reading the description would become happy just from reading about the situation.

_____

In the space to the right, describe in detail the Munchie Mart that you go to most frequently, and describe it in such a way that a person reading the description would be able to visualize the Munchie Mart by reading your description.

_____

Appendix D

Buffering Study Script (Updated 1/20/14)
Name of Study: "Attitudes and Task Performance"
Location: Wilson 210D
Contact info: Kellie Kuzmuk (708) 308-8929 kellie.m.kuzmuk@vanderbilt.edu

Setting up
1. Put the appropriate knock sign on the door.
2. Refer to the participant sheet to find the participant id number and condition (We are using random assignment, so go by the condition listed next to the id number and check it off to confirm you saw it).
3. On the computer, open Firefox and the bookmarked DEAL 1, DEAL 2, DEAL 3, and the Writing task in 4 separate tabs (The DEALS are now 3 separate surveys rather than having the participants fill out the same survey three times. I will delete the old bookmarks and add the new ones so you can access then the same way, just make sure one bookmark corresponds to one tab. Even though the DEALS are separate, still designate one to be pre, one mid, and one post on the first page). Fill in your name, the participant id number, and condition on the first page and click to the next page. Open a new tab so the participant cannot see the surveys as they walk in.
4. Open Amadeus Pro and save the file as the participant id number in the "Verbal Fluency Task" folder on the desktop.

Running the Participant
4. When the P arrives, welcome them and ask them to have a seat in front of the computer. Give them the consent form from the top drawer of the file cabinet and ask them to read through and sign it saying,

> **"Thank for continuing to participate in the study. This study is looking to see how performance on various tasks are affected by certain attitudes and beliefs. You had previously filled out an online survey meant to assess some of these attitudes, and in today's session we will continue to assess these attitudes as well as engage in various cognitive tasks. Please read through this consent form and let me know if you have any questions."**

5. After the P has signed the consent form, please sign it and lock it in the second drawers of the file cabinet.
Pre-DEAL
6. Tell the P,

> **"Because we are assessing attitudes and beliefs, we will periodically checking in on how you are perceiving things throughout the experiment. You will see this survey a few times, but please try to respond with how you are feeling in the current moment in which you are taking it."**
>
> **"To begin, we would like to gather information on how you are currently feeling as you come into the lab. Please fill out this survey and let me know when you are finished"**

Writing Task

7. After the pre-DEAL, please select the Writing Task tab to pull up the writing prompt. Say,

> **"The first task is a writing task, so please respond to the following prompt as thoughtfully and thoroughly as possible. You will find one prompt and text box on the first page and one on the following page. You will have five minutes to complete the two prompts. Please move at your own pace from the first to the second prompt. I will let you know when the 5 minutes is up. Do not worry if you are not finished in that time. Just keep writing, trying to immerse yourself deeply into the details of the prompt."**

Mid-DEAL

8. Use the clock or your phone if you prefer, to time the participant for 5 minutes, when the time is up please say,

> **"That is all for the writing task, again, don't worry if you did not finish or if you were finished early."** Switch tabs to the mid-DEAL tab. Tell the P, **"Please fill out this questionnaire again, responding with how you are feeling in this current moment. Let me know when you are finished."**

J-Word Task

9. After the P tells you they are done, pull up Amadeus Pro and say

> **"Now we are going to begin a verbal fluency task. Is English your first and primary language?"** (**Note this on the P sheet and ask each P even if you are almost certain it is!)

Record their response and say

> **"For the next 2 minutes I would like you to list as many words as you can think of that begin with a certain letter. This has been shown in previous research to be a good measure of verbal fluency. In our lab, we are interested in measuring attitudes' affect on this task. Just so you know, the average Vanderbilt undergraduate can list about 30 words. I'll be recording your responses as you go both manually and audio recording the task on the computer. Please speak loudly and clearly and do not use proper nouns. Your specific letter will be J.**
>
> **You may begin when I say 'begin'."** Start the timer, audio recording. **"Begin!"**

Record the words as the participant goes.

Post-DEAL

10. After calling time, please open the post-DEAL tab and tell the P,

> **"Ok now you will fill out this brief questionnaire one more time, again please respond with your current feelings and let me know when you are finished."**

Debriefing

11. Tell them that the experiment is complete. Say

> **"The purpose of this study was actually to see if trait emotional intelligence effects one's ability to experience buffering and if this relationship is moderated by mood induction. You were in the (P/N) condition. Do you have any questions?" "Thank you for you participation, I will assign your two SONA credits very shortly." "Have a great day!"**

12. After the P has left please give them credit on SONA before leaving.

If no one is scheduled to come in after you please

1. remove the knock sign from the door
2. shut down the computer
3. turn off the lights before leaving
4. remember to lock the lab door (to room D) as well as the two locks on the 210 door

Note: Please memorize the bolded lines and deliver them as close to the script as possible.

Appendix E: Results (Manipulation Checks)

Mood Manipulation Check

```
> t.test(happy.p.pre,happy.p.mid)

        Welch Two Sample t-test

data:  happy.p.pre and happy.p.mid
t = -2.2222, df = 45.457, p-value = 0.03129
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -1.96009787 -0.09656879
sample estimates:
mean of x mean of y
 3.680000  4.708333
> t.test(happy.n.pre,happy.n.mid)

        Welch Two Sample t-test

data:  happy.n.pre and happy.n.mid
t = 0.1866, df = 52.053, p-value = 0.8527
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.6967134  0.8395705
sample estimates:
mean of x mean of y
 3.892857  3.821429

> t.test(pos_pre,pos_mid)

        Welch Two Sample t-test

data:  pos_pre and pos_mid
t = -1.0697, df = 87.593, p-value = 0.2877
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.6509879  0.1954324
> t.test(neg_pre,neg_mid)

        Welch Two Sample t-test

data:  neg_pre and neg_mid
t = 1.8512, df = 87.489, p-value = 0.06752
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.02322649  0.65433760
sample estimates:
mean of x mean of y
 1.888889  1.573333
```

Table 1: Means and variances of Happy (pre-mid) by Condition and Composite Positive and Negative score (pre-mid)

	happy.p.pre	happy.p.mid	happy.n.pre	happy.n.mid
mean	3.68	4.708333333	3.892857143	3.821428571
variance	3.226666667	2.041666667	1.654761905	2.448412698

Stress Manipulation Check

>	pos_pre	pos_mid	neg_pre	neg_mid
mean	3.487037037	3.714814815	1.888888889	1.573333333
variance	0.950743547	1.089800786	0.703737374	0.603818182

```
t.test(neg_mid,neg_post)

        Welch Two Sample t-test

data:  neg_mid and neg_post
t = -6.4188, df = 76.54, p-value = 1.044e-08
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -1.7596210 -0.9263049
sample estimates:
mean of x mean of y
 1.573333  2.916296
> t.test(pos_mid,pos_post)

        Welch Two Sample t-test

data:  pos_mid and pos_post
t = 3.6636, df = 85.864, p-value = 0.0004295
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 0.3427344 1.1559861
sample estimates:
mean of x mean of y
 3.714815  2.965455
```

Appendix F

EI Sub-scale Medians

```
> survey1<-read.table(file="Data1.txt",header=TRUE)
> attach(survey1)
The following objects are masked from regression.data (position 3):

    attn, clar, repair
The following objects are masked from survey1 (position 7):

    attn, clar, des, diff, eot, grit, id, range, repair
> median(clar)
[1] 39
> median(attn)
[1] 51
> median(repair)
[1] 22
```

Appendix G: Results (Effects)

Main Effect for Condition

Table 1: Mean number of Unique Words reported by Condition

wordmean_postivecond	wordmean_neutralcond
12.48	12.96

Table 2: Means of PA and NA by condition

Positive Condition

pos_pre	pos_mid	pos_post	neg_pre	neg_mid	neg_post
3.6	4.2	3.1	2.0	1.5	3.0

Neutral Condition

pos_pre	pos_mid	pos_post	neg_pre	neg_mid	neg_post
3.4	3.3	2.8	1.8	1.7	2.9

Main Effect for Emotional Intelligence (Clarity, Attention, Repair)

Table 1: Means by sub-scale group (high or low)

clar_high_mean	clar_low_mean	attn_high_mean	attn_low_mean	repair_high_mean	repair_low_mean
44.93333333	30.58108108	55.74666667	44.68918919	24.84810127	16.48571429

```
> (summary(lm(unique_words~clar+neg_pre+neg_mid)))

Call:
lm(formula = unique_words ~ clar + neg_pre + neg_mid)

Residuals:
    Min      1Q  Median      3Q     Max
-6.7771 -2.8329 -0.2616  2.5411 11.1263

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -1.97553    3.85468  -0.513  0.61105
clar         0.23982    0.08036   2.984  0.00477 **
neg_pre      5.00410    0.94565   5.292 4.37e-06 ***
neg_mid     -2.54930    1.03136  -2.472  0.01769 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 4.029 on 41 degrees of freedom
Multiple R-squared:  0.4575,  Adjusted R-squared:  0.4178
F-statistic: 11.53 on 3 and 41 DF,  p-value: 1.296e-05

> (summary(lm(unique_words~clar+pos_pre+pos_mid)))

Call:
lm(formula = unique_words ~ clar + pos_pre + pos_mid)

Residuals:
    Min      1Q  Median      3Q     Max
-8.6268 -3.7433  0.0173  2.1682 15.9093
```

```
Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  7.68701    4.85078   1.585    0.1207
clar         0.20639    0.09778   2.111    0.0409 *
pos_pre     -2.04658    1.11252  -1.840    0.0731 .
pos_mid      1.13250    1.03932   1.090    0.2822
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 5.054 on 41 degrees of freedom
Multiple R-squared:  0.1464,  Adjusted R-squared:  0.08398
F-statistic: 2.345 on 3 and 41 DF,  p-value: 0.08699
```

Interaction Effect (EI X Condition)

```
> (summary(lm(neg_post~attn+neg_pre+neg_mid+condition+condition*attn)))

Call:
lm(formula = neg_post ~ attn + neg_pre + neg_mid + condition +
    condition * attn)

Residuals:
    Min      1Q  Median      3Q     Max
-1.5789 -0.5561 -0.1469  0.4833  1.9586

Coefficients:
               Estimate Std. Error t value Pr(>|t|)
(Intercept)     3.07813    0.99618   3.090  0.00368 **
attn           -0.02865    0.01814  -1.579  0.12234
neg_pre        -0.24138    0.21303  -1.133  0.26409
neg_mid         1.15732    0.22848   5.065 1.02e-05 ***
condition       2.05077    0.92662   2.213  0.03281 *
attn:condition -0.03628    0.01820  -1.994  0.05320 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8752 on 39 degrees of freedom
Multiple R-squared:  0.503,   Adjusted R-squared:  0.4393
F-statistic: 7.893 on 5 and 39 DF,  p-value: 3.269e-05
>
(summary(lm(neg_change_mid_post~attn+neg_pre+condition+condition*attn))
)

Call:
lm(formula = neg_change_mid_post ~ attn + neg_pre + condition +
    condition * attn)

Residuals:
    Min      1Q  Median      3Q     Max
-1.9664 -0.4894  0.1760  0.5570  1.5977

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -3.09467    0.98933  -3.128  0.00328 **
attn         0.02780    0.01798   1.547  0.12985
```

```
neg_pre          0.14405     0.15833   0.910  0.36836
condition       -1.95133     0.90926  -2.146  0.03799 *
attn:condition   0.03473     0.01794   1.936  0.05991 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8694 on 40 degrees of freedom
Multiple R-squared:  0.1518,  Adjusted R-squared:  0.06696
F-statistic: 1.789 on 4 and 40 DF, p-value: 0.15
```

Further Exploration (EI effects on Mood Induction)

```
> (summary(lm(neg_mid~neg_pre+condition+repair)))

Call:
lm(formula = neg_mid ~ neg_pre + condition + repair)

Residuals:
     Min       1Q   Median       3Q      Max
-1.30668 -0.25136 -0.04507  0.11694  2.34970

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  1.37442    0.44717   3.074  0.00375 **
neg_pre      0.56581    0.10333   5.476 2.4e-06 ***
condition   -0.15676    0.08548  -1.834  0.07394 .
repair      -0.04063    0.01675  -2.426  0.01977 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5646 on 41 degrees of freedom
Multiple R-squared:  0.5081,  Adjusted R-squared:  0.4721
F-statistic: 14.12 on 3 and 41 DF,  p-value: 1.83e-06
> (summary(lm(neg_mid~neg_pre+condition+repair+repair*condition)))

Call:
lm(formula = neg_mid ~ neg_pre + condition + repair + repair *
    condition)

Residuals:
     Min       1Q   Median       3Q      Max
-0.97820 -0.22908 -0.05557  0.12645  1.94548

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)      1.67099    0.44547   3.751 0.000558 ***
neg_pre          0.52885    0.09977   5.301 4.52e-06 ***
condition       -0.96513    0.36443  -2.648 0.011520 *
repair          -0.04980    0.01646  -3.026 0.004317 **
condition:repair 0.03721    0.01635   2.276 0.028291 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5378 on 40 degrees of freedom
Multiple R-squared:  0.5645,  Adjusted R-squared:  0.5209
F-statistic: 12.96 on 4 and 40 DF,  p-value: 7.412e-07
```