

SELF-COMPASSION AS A RESILIENCY FACTOR AGAINST THE INDUCTION OF
DYSPHORIC MOOD

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Nakisha Marie Carrasquillo

Master of Arts, Wichita State University, 2011

Master of Arts, University of West Georgia, 2008

Bachelor of Arts, University of Tampa, 2007

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The following faculty members have examined the final copy of this dissertation for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Doctor of Philosophy.

Robert Zettle, Committee Chair

James Snyder, Committee Member

Charles Burdsal, Committee Member

Evan Palmer, Committee Member

Robert Feleppa, Committee Member

Accepted for the College of Liberal Arts

Ronald R. Matson, Dean

Accepted for the Graduate School

Kerry Wilks, Interim Dean

DEDICATION

To my family, my love, my mentors,
and supportive colleagues

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ABSTRACT

Self-compassion's relationship to psychological well-being is an emerging area of scientific investigation. Previous research suggests self-compassion has a buffering effect against depression that is partially mediated through the process of rumination. The present study sought to further investigate this issue using a laboratory-based analogue preparation. College students randomly assigned to one of three induction procedures or a control condition reported equivalent increases in dysphoric mood, suggesting the impact of demand characteristics and/or a weak induction effect. This interpretation was also supported by the absence of any differences among the four conditions in performance-based measures reflective of increased dysphoric mood states. Of most relevance to the purpose of this project, there was no relationship between dispositional measures of self-compassion or rumination and changes in any of the self-report and performance-based measures of dysphoric mood, thereby highlighting some of the challenges and limitations in conducting analogue research. A proposed framework for addressing these challenges and guiding further laboratory-based mood induction research is discussed.

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CHAPTER 1

INTRODUCTION

Self-compassion is a practice originating from Buddhist thought that has been shown to act as a protective factor for many psychological concerns (Neff, 2003). Self-compassion involves the processes of self-kindness, common humanity, and mindfulness and can be measured by a scale developed and validated by Neff (2003). Self-compassion is negatively correlated with depression, anxiety, self-criticism, rumination, and narcissism; and is positively associated with life satisfaction, social connectedness, emotional intelligence, self-determination, and subjective well-being (Leary, Tate, Adams, Allen, & Hancock, 2007; Neff, 2003; Neff, Kirkpatrick, & Rude, 2007; Neff & McGehee, 2010; Van Dam, Sheppard, Forsyth, & Earleywine, 2011). Experimental studies have shown that enhancement of self-compassion through therapeutic interventions and brief protocols is related to decreased levels of depression, anxiety, self-criticism, and rumination (Gilbert & Irons, 2004, 2005; Gilbert & Procter, 2006; Neff, Kirkpatrick, & Rude, 2007; Shapira & Mongrain, 2010). A consistent and robust finding is that self-compassion has a buffering effect against depressive symptomology (Andréasson, 2012; Neff, 2003) that is partially mediated through the process of decreasing rumination (Raes, 2010). Rumination is a psychological risk factor for depression that involves passively perseverating on negative thoughts and emotions (Nolen-Hoeksema, 1991). Self-compassion, in particular, seems to counteract the depressogenic impact of ruminative brooding.

Purpose of Study

The present study was designed to investigate the potential protective effects of self-compassion in the context of a control condition as well as three dysphoric mood induction procedures that differ in their ruminative nature and properties: (a) the Velten Mood Induction procedure (VMIP; Velten, 1968) that involves the use of self-reflective statements, (b) a musical mood induction procedure, and (c) one that combines the first two (Martin, 1990). This project further examined the relationship between dispositional self-compassion and rumination by measuring each and determining both their individual and interactive effects upon dysphoric mood as induced by the differing procedures. In the majority of mood induction research, affective self-report measures have been assessed as the primary, if not exclusive, dependent variable. In order to more thoroughly investigate the impact of the three mood induction procedures relative to each other and the control condition and how their effects may be moderated by self-compassion and rumination, attentional and behavioral measures were also evaluated. Specifically, a modified version of the Affective-Go-No-Go task of Murphy et al. (1999) was administered to assess the impact of the dysphoric mood induction procedures on sustained attention and affective word processing. A paper-and-pencil version of the Hampton Court maze (Boakes, 1984) was also administered as a behavioral task to measure the effects of dysphoric mood on its completion time.

It was hypothesized that the three induction procedures would each have a significantly greater impact on dysphoric mood than the control condition. Among the three experimental conditions, it was anticipated that the combined mood induction procedure would result in the highest levels of dysphoric mood due to its inclusion of

both ruminative instructions and mood-enhancing music. Experimental group participants high in self-compassion, but low in ruminative brooding, particularly within the VMIP and combined induction conditions, were generally expected to be the least responsive to mood induction efforts, as both included ruminative components. While it was less clear how self-compassion and rumination might contribute either individually or interactively to dysphoric mood within the induction procedure that only presented instrumental music, it seemed important to include this condition to provide some additional insight into the relationship between self-compassion and rumination. The aggregate findings of this study will ostensibly contribute to our further understanding of how self-compassion and ruminative brooding contribute to dysphoric mood, and by extension, also of the role that each may play in the initiation, maintenance, and alleviation of clinical depression.

CHAPTER 2

LITERATURE REVIEW

Introduction

Over the past 10-20 years, practices from eastern philosophical traditions have been increasingly integrated into western psychology (Epstein, 2004; Rubin, 1996; Welwood, 2000). Cognitive-behavioral therapy (CBT), in particular, has expanded from more traditional techniques, such as cognitive restructuring, to include practices and concepts from Buddhist philosophy (Hayes, Follette, & Linehan, 2004). These practices, such as mindfulness and acceptance, have become more common in psychotherapy more broadly and have been shown to be efficacious in alleviating human suffering both when applied alone (Kabat-Zinn, 1990) and when integrated with established CBT approaches (Segal, Williams, & Teasdale, 2002). Mindfulness and acceptance-based approaches such as acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 2012), mindfulness-based cognitive therapy (Segal et al., 2002), and dialectical behavioral therapy (Linehan, 1993) have been on the forefront of the movement known as the “third wave” of CBT.

Unlike more mechanistic forms of CBT, such third wave approaches tend to be more experiential and contextual in nature in adopting practices and concepts such as acceptance, mindfulness, metacognition, cognitive fusion, dialectics, and spirituality that come from a variety of less empirical disciplines (Hayes, 2004). Traditional forms of CBT focus primarily on first order change processes that seek to instigate therapeutic improvement in overt behavior and emotional experiences by directly changing how clients think through cognitive restructuring and related practices (Beck, Rush, Shaw, &

Emery, 1979). In contrast, third wave approaches within CBT emphasize second order change processes that do not try to alter or eliminate the content of thoughts, but instead seek to transform how an individual relates to them. Specific practices such as mindfulness and acceptance enhance an individual's ability to purposively contact thoughts and feelings in the present moment, from a nonjudgmental perspective (Kabat-Zinn, 1990). This in turn ostensibly changes the way an individual relates to thoughts and creates room for choice in how to behave in response to them (Hayes et al., 1999). Process research suggests that third wave approaches, such as ACT, often result in reductions in negative thoughts comparable to those seen in traditional forms of CBT, such as cognitive therapy (CT; Beck et al., 1979), although through distinct and predictable mechanisms of action (e.g., Zettle, Rains, & Hayes, 2011).

A negative automatic thought such as "I am not good enough" typically would be addressed in CT by collaborating with clients in reviewing the objective evidence both for and against it, with the goal of restructuring it into a thought that more accurately reflects reality (e.g., "I'm not perfect, but am certainly 'good enough' when it comes to many things."). A third wave approach, by contrast, would not try to change the content of the thought, but rather focus on enabling clients to relate to such a thought as a transient psychological experience rather than as a permanent and factual declaration of their nature. An increasing focus within third wave CBT approaches has been on fostering self-compassion as a second order change process and alternative way of responding to negative self-referential thoughts. The primary agenda of enhanced self-compassion is not to change such thoughts, but rather to transform the nature of our

relationship with them into a warm and nonjudgmental one that is also connected to the suffering of others (Neff, 2004).

The last decade in particular has seen the development of a number of psychotherapeutic approaches and programs focusing on self-compassion, including compassionate mind training (Gilbert & Procter, 2006) and the mindful self-compassion program (Neff & Germer, 2013), that have expanded the boundaries of third wave approaches within CBT. A growing body of research suggests that self-compassion contributes to adaptive psychological functioning and acts as a preventative factor against a range of mental health concerns (Leary et al., 2007; Neff, 2003; Neff, Kirkpatrick, & Rude, 2007; Neff & McGehee, 2010; MacBeth & Gumley, 2012; Van Dam et al., 2011). In the next few sections within this chapter, the defining characteristics and measurement of self-compassion will be discussed and correlational as well as experimental research pertaining to the relationship and impact of self-compassion on psychological functioning in both nonclinical and clinical samples will be reviewed to provide a broader context in which this particular project can be situated.

Defining and Measuring Self-Compassion

According to Neff (2003) self-compassion is composed of three main components: (a) self-kindness, (b) common humanity, and (c) mindfulness. Self-kindness involves being warm and understanding towards oneself in the face of pain, self-disappointment, and failure. For instance, if an individual applied for a job and did not get the position, negative self-referential thoughts such as “I am a failure” or “I suck” may understandably arise. Responding with self-kindness would involve extending understanding and support toward oneself as if consoling a good friend. Common

humanity is defined as a person's ability to acknowledge that suffering and personal failure are experienced by all of humanity, rather than being separate and isolated. Given the example above, an individual might realize that many others have gone through similar struggles with failure and that human suffering is a shared experience. The mindfulness component of self-compassion refers to being able to approach negative thoughts and feelings through a balanced perspective free of judgment or evaluation. Again referring to the example above, mindfulness might entail becoming aware of self-critical thoughts in the present moment and accepting them as thoughts, without "buying into them" because they are true, or trying to eliminate them because they are bad. Based on the above definition of self-compassion, Neff (2003) developed and validated a scale to measure it. The Self-Compassion Scale (SCS; see Appendix A) contains 26 items that yield a total score as well as scores on six subscales. The subscales that comprise the SCS were conceptualized as three opposing pairs based on a series of exploratory and confirmatory factor analyses with college student samples that revealed six nonorthogonal factors. The first factor pair consisted of 10 items and was referred to as self-kindness (e.g., "I'm kind to myself when I'm experiencing suffering") versus self-judgment (e.g., "When I see aspects of myself that I don't like, I get down on myself"). The next factor pair, common humanity (e.g., "I try to see my failings as part of the human condition") versus isolation (e.g., "When I'm feeling down I tend to feel like most other people are probably happier than I am") consisted of 8 items. The third and remaining factor pair, also comprised of 8 items, was referred to as mindfulness (e.g., "When something upsets me I try to keep my emotions in balance") versus

overidentification (e.g., “When I fail at something important I become consumed by feelings of inadequacy”).

Psychometric analyses of the SCS suggest that the SCS exhibits satisfactory levels of both internal and temporal stability. The internal consistency for the total scale was $\alpha = .92$, while each of the six subscales achieved an $\alpha \geq .75$ (Neff, 2003). Over a 3 week time period, the total scale yielded a test-retest reliability coefficient of $r = .93$ while those for the six subscales ranged from $r = .80$ to $r = .88$ (Neff, 2003).

Research investigating various forms of validity also suggests that the SCS is a psychometrically sound instrument. In Study 1 of Neff (2003), content validity was demonstrated by comparing scores of 391 undergraduates on the SCS by asking them if they had a tendency to generate more kindness toward themselves or others (Neff, 2003). Individuals with high self-compassion reported treating themselves with the same amount of kindness as they extend to others, while those with low self-compassion reported treating themselves significantly worse than others.

Neff (2003) evaluated the convergent validity of the SCS among a sample of college students by comparing it to measures of related constructs including self-criticism, social connectedness, and emotional intelligence. The SCS displayed adequate convergent validity with a moderate negative correlation ($r = -.65$) with the self-criticism subscale of Blatt, D’Afflitti, and Quinlan’s (1976) Depressive Experiences Questionnaire and a moderate positive correlation ($r = .41$) with the degree to which an individual feels close to others as assessed by the Social Connectedness Scale (Lee & Robbins, 1995). The SCS was also moderately correlated with the ability to regulate emotions and level of emotional clarity as assessed respectively by the repair ($r = .55$) and clarity ($r = .43$)

subscales of the Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). These moderate correlations suggest that the SCS is related in expected ways to these other measures, but that they are not assessing the same construct.

To examine the discriminant validity of the SCS, Neff (2003) compared it to a measure of narcissism (Raskin & Hall, 1979) as well as to three measures related to the construct of self-esteem. As expected, the SCS was moderately, but significantly, correlated with the self-esteem measures ($r = .43$ to $r = .62$). By contrast, it was not significantly correlated with narcissism, suggesting that self-compassion is not the psychological opposite of narcissism, and that while it is, as might be expected, related to self-esteem, it is sufficiently independent of it. To further discriminate the process of self-compassion from self-esteem, Neff (2003) demonstrated that significant correlations are maintained between the SCS and clinically-relevant variables, such as depression, after controlling for level of self-esteem, a finding that was later confirmed with a Dutch sample (Neff & Vonk, 2009). This suggests that the process of self-compassion contributes to psychological well-being above and beyond that which can be attributed to the process of self-esteem.

Further evidence supporting the discriminant validity of the SCS was provided by Brooks, Kay-Lambkin, Bowman, and Childs (2012) in comparing the scores of those diagnosed with alcohol dependency with the student sample collected by Neff (2003). The clinical sample reported significantly lower overall SCS scores, as well as lower positive subscale scores on self-kindness, common humanity, and mindfulness. Conversely, the clinical sample displayed significantly higher scores on the negative SCS subscales of overidentification, isolation, and self-judgment. Within the clinical sample,

participants who indicated daily use of alcohol reported significantly higher levels of self-judgment, isolation, and overidentification compared to those who reported less frequent drinking.

Similar findings comparing the SCS scores of clinical versus nonclinical samples were also reported by Werner et al. (2012). Participants diagnosed with social anxiety disorder scored significantly lower on the overall SCS and each of the six subscales than a group of healthy control participants.

To assess its concurrent validity, the SCS was correlated with several clinically-relevant measures of psychological functioning (Neff, 2003). The SCS was significantly and inversely related to measures of depression, anxiety, rumination, and thought suppression, and correlated significantly and positively with a measure of life satisfaction. Neff and McGehee (2010) found similar relationships between the SCS and depression as well as dispositional anxiety among a nonclinical sample of adolescents and young adults, and also replicated the earlier finding of Neff (2003) of a significant positive correlation between the SCS and social connectedness. These overall results suggest that the SCS is robustly related to several indices of psychological functioning in samples that extend from adolescence to early adulthood.

Several dimensions of validity were further assessed by Neff, Rude, and Kirkpatrick (2007) in a study examining the relationship between self-compassion as assessed by the SCS and a battery of questionnaires measuring personality dimensions, several indices of psychological well-being, and both positive and negative affect. Self-compassion was positively correlated with a number of measures reflective of

psychological well-being including happiness, optimism, positive affect, wisdom, and curiosity and exploration, as well as the personality dimensions of extroversion and conscientiousness. Conversely, negative correlations were found for the SCS and measures of negative affect and neuroticism. A regression analysis that partialled out the effects of the personality factors indicated that the SCS still made significant independent contributions to the measures of adaptive psychological functioning mentioned. This study suggests that self-compassion as evaluated by the SCS is not only related to psychological well-being, but that it is also able to predict adaptive functioning beyond the scope of personality characteristics, leading its authors to conclude that “approaching painful feelings with self-compassion is linked to a happier, more optimistic mindset, and appears to facilitate the ability to grow, explore, and wisely understand oneself and others (Neff, Rude, & Kirkpatrick, 2007, p. 914).”

Research on Self-Compassion

Even though the SCS has only been available for the past decade, there has been a reasonably large accumulation of correlational and experimental research, with both clinical and nonclinical samples, investigating the process of self-compassion and how it may impact psychological functioning. In a recent meta-analysis conducted by MacBeth and Gumley (2012), 20 studies using the SCS were reviewed that further substantiated the relationship between self-compassion and depression, anxiety, and stress as assessed by various self-report inventories, as well as, in the case of depression, by a clinician-administered measure (i.e., Hamilton Rating Scale for Depression; Williams, 1988). The meta-analysis, which included studies with both clinical and nonclinical samples, found that effect sizes did not differ by population type. The mean effect size for all of the

studies was high ($r = .54$) and also did not vary by type of psychological dysfunction (i.e., depression, $r = .52$; anxiety, $r = .52$; stress, $r = .51$), leading to the conclusion that “self-compassion is an important explanatory variable in understanding mental health and resilience (MacBeth & Gumley, 2012, p. 545).”

In the immediate literature review that follows, primary attention will be given to three types of studies concerning self-compassion: (a) those not included in the MacBeth and Gumley (2012) meta-analysis because they have appeared since its publication, (b) those published earlier, but also not included in the meta-analysis because of their focus on the relationship between self-compassion and variables other than depression, anxiety, and stress, and (c) those included in the meta-analysis, but which are also appropriate for further discussion as they too addressed similar matters. In doing so, research involving nonclinical populations will be summarized first before considering studies that have examined the process of self-compassion within clinical samples.

Nonclinical Research

Correlational studies. For ease of discussion, correlational research involving the SCS with nonclinical samples can be divided into that which has primarily focused on further investigating its validity versus studies more concerned with the possible role of dispositional self-compassion as a moderating variable.

Concurrent validation research. Three studies not included in the MacBeth and Gumley (2012) meta-analysis further substantiate the concurrent validity of the SCS by documenting a significant relationship between self-compassion and depression. Andréasson (2012) found significant negative correlations between depression as assessed by the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) and

SCS total score ($r = -.57$) as well as for subscale scores on self-kindness ($r = -.35$), common humanity ($r = -.37$), and mindfulness ($r = -.35$). By contrast, positive correlations were found between the BDI-II and the self-judgment ($r = .49$), isolation ($r = .59$), and overidentification ($r = .43$) subscales of the SCS, suggesting that the SCS and each of its subscales are related to depression in predictable ways.

Raes (2011) examined the relationship between levels of self-compassion and increases in depressive symptoms over a 5 month interval. Participants with higher baseline levels of self-compassion as assessed by the SCS Short Form (Raes, Pommier, Neff, & Van Gucht, 2011) showed reductions and/or smaller increases in depressive symptoms over the duration of the study than their counterparts with low levels of self-compassion (Raes, 2011), suggesting that dispositional self-compassion is predictive of changes in depressive symptomology over time.

Study 2 of Neff, Kirkpatrick, and Rude, (2007) can be distinguished from the other investigations reviewed thus far in this section as it is the only one that examined the possible role of induced levels of elevated self-compassion on various indices of psychological well-being. College students completed a battery of questionnaires including the SCS as well as self-report measures of social connectedness, self-esteem, depression, rumination, dispositional anxiety, and thought suppression before and after they participated in a procedure designed to help challenge self-critical beliefs and enhance self-compassion. During an adaptation of the “Gestalt two chair” exercise from Clarke and Greenberg (1986), participants first recalled a past situation that made them feel self-critical. They were then instructed to contact the critical and self-compassionate parts of themselves and with the guidance of the therapist, created a dialog between these

two contrasting perspectives that was vocalized while switching back and forth between chairs. The session ended when the therapist determined that either a resolution had been reached or that no resolution was apparent. Change score analyses indicated that participants who experienced larger increases in self-compassion after the intervention also displayed greater increments in social-connectedness and larger decreases in self-criticism, depression, rumination, dispositional anxiety, and thought suppression. This study suggests that induced self-compassion is related to increases in adaptive psychological functioning. However, because Neff, Kirkpatrick, and Rude (2007) did not report if responsivity to the exercise varied as a function of baseline SCS scores, the degree to which self-compassion may also function as a moderating variable was not addressed.

Moderating research. Relatively speaking, a larger body of research will be discussed and summarized in this section investigating how the psychological reactions of participants to challenging and stressful events have varied depending upon their levels of self-compassion. Leary et al. (2007) conducted a series of four studies that evaluated how college students of differing levels of self-compassion react to unpleasant life events. In Study 1, participants reported weekly for 3 weeks about the worst thing that happened to them in the previous 4 days and rated (a) how “bad” the event was, (b) if others were responsible, (c) how important the event was to them, and (d) how they felt about the situation using an affective checklist. It was found that when faced with a daily inconvenience or struggle, individuals high in dispositional self-compassion, compared to their counterparts scoring low on the SCS, reported a tendency to be kind toward themselves, considered their problems no worse than the problems of others, and were

able to maintain a positive perception of themselves. In short, the overall results from Study 1 by Leary et al. (2007) suggest that self-compassion moderated reactions to negative life events such that students high in self-compassion responded with self-kindness and were more likely to see their struggles as connected to a common humanity.

The remaining three studies reported by Leary et al. (2007) extended the findings of Study 1 by examining how levels of self-compassion may also moderate how participants manage stress-inducing events presented or instigated within the laboratory. Study 2 presented college students with three scenarios depicting negative life events: (a) getting a poor grade on an important test, (b) being at fault for losing a sports competition for their team, and (c) forgetting their lines while performing on stage. Participants were then asked to indicate how bad they would feel about the situation and what emotions and related thoughts they would experience. Those with high self-compassion reported a lower tendency to overreact, catastrophize, or take the situation in question personally, and instead an ability to keep the situation in perspective and thus demonstrate greater levels of equanimity. These findings remained even when considering self-reported levels of narcissism and self-esteem.

Study 3 of Leary et al. (2007) was more instigative in nature as it asked college students to give a video introduction about themselves before receiving either positive or neutral feedback about their performance. Participants high in self-compassion displayed similar reactions to both types of feedback as assessed by mood ratings, state self-esteem, attributions of the feedback, and ratings of the observer. In contrast, those low in self-compassion responded to neutral feedback with significantly greater levels of negative affect than they did to positive feedback. Unlike the results of Study 1, the overall

findings also suggested that the role of self-compassion was itself moderated by self-esteem. In particular, the impact of high self-compassion was greatest for participants that reported low self-esteem.

The last of the four studies of Leary et al. (2007) used the same preparation as in Study 3, but also asked participants to provide a self-evaluation of their video introduction. Those low in self-compassion rated their performance as significantly poorer than those of the independent evaluators, likely reflecting a critical self-judgmental perspective inconsistent with extending a kind and accepting attitude towards oneself.

Another specific study conducted within a larger series by Neff, Kirkpatrick, and Rude (2007) provides additional support for the overall findings of Leary et al. (2007). Study 1 examined the possible protective role of self-compassion against anxiety when participants were presented with a threat to their self-esteem. College students were asked to write a response to the following request: “What do you consider your greatest weakness? Tell me about a situation in the past when this has affected you.” A moderating effect for dispositional self-compassion was noted as participants who scored higher on a pretask administration of the SCS reported significantly lower levels of increased state anxiety after writing about their perceived weaknesses compared to their low self-compassion counterparts, even after controlling for level of self-esteem. These findings, especially when viewed in conjunction with those of Leary et al. (2007), suggest that self-compassion buffers against self-evaluative anxiety as well as other negative affective/mood states in response to ego threats, and that the processes of self-compassion and self-esteem although related, do not represent the same construct.

Experimental studies. Correlational research relating self-compassion to psychological variables among nonclinical samples is limited not only because the findings may not extend to clinical populations, but also because causation may not be inferred. At least two studies, however, have examined the impact of experimentally manipulating self-compassion interventions as independent variables upon psychologically-relevant dependent variables among college students.

In the first of these two experiments (Study 5 of Leary et al., 2007), college students were asked to describe in detail an event that made them feel poorly about themselves. After describing the event, participants were randomly assigned to one of four following conditions: (a) self-compassion induction, (b) self-esteem enhancement, (c) a writing control condition, and (d) a no-treatment control group. The self-compassion induction asked participants to think about the distressing event through a lens of self-kindness, common humanity, and mindful-awareness. The self-esteem enhancement relied upon tactics used in previous research and in clinical settings to increase self-esteem (Blaine & Crocker, 1993; Greenwald, 1980; Murk, 2006), such as self-serving attributions, egotistical reframing, and self-affirmations. Participants in the writing control group wrote in depth about their emotions surrounding the distressing event, while those in the no-treatment control condition were simply asked, along with the other participants, to complete an assessment battery consisting of an adjective checklist, questions about the perceived severity of the event, their attributions regarding the event, and if they felt they were more similar to or different from others.

Participants receiving the self-compassion induction displayed significantly less negative affect, attributed the event to the “kind of person” they are, and saw themselves

as more like others compared to participants in the self-esteem and both control conditions. This research suggests that when self-compassion is experimentally induced it leads to reduced negative affect and a sense of connection to others despite acknowledging the role of one's own contribution to a personally-distressing situation.

Adams and Leary (2007) instigated an ostensibly personally-distressing situation involving a sample of 84 female college students, 26 of whom indicated highly restrictive eating on the Revised Rigid Restraint Scale (Polivy, Herman, & Howard, 1988). Participants were randomly assigned to one of three conditions: (a) a “no-preload” control group that were not asked to eat a donut, (b) a preload group that subsequently received a self-compassion intervention, and (c) a preload control group that did not receive such an intervention. The first part of the study consisted of having the two preload conditions eat a donut while watching television based on speculation that individuals identified as restrictive eaters would engage in increased food consumption after breaking their diet by doing so. Increased eating expected under such circumstances was hypothesized to function as a coping strategy to deal with negative self-judgments and related feelings of guilt. After the preload, the self-compassion group (SC) was told that all people sometimes eat unhealthy and not to be hard on themselves for eating the donut. The next phase of the experiment consisted of a bogus taste test in which each participant was asked to eat and rate at least one of several different kinds of candy prior to completion of a battery of questions about self-compassionate eating attitudes and a checklist regarding how they felt after eating the donut (in the two preload conditions) and the candy during the taste test.

There was a main effect for condition in which the SC and no-preload control groups reported equivalent levels of self-compassionate attitudes toward eating that exceeded that of the preload control group. This suggests that the preload did lead to self-critical thoughts, but that the self-compassion intervention buffered against the effects of eating the donut so that the SC group responded like the no-preload control group.

There was also a main effect for level of restrictive eating in that participants high in restrictive eating sampled more candy than those low in restrictive eating. Perhaps even more important than the two main effects, was a significant interaction between them. Restrictive eaters ate more candy in the two control groups, but not in the SC condition, while there were no differences in the amount sampled during the taste test for low or moderate restrictive eaters across the three conditions. Also among restrictive eaters, those in the SC group reported affect levels equivalent to their no-preload counterparts, but greater positive and less negative affect compared to those in the preload control condition. Despite obvious limitations in this study (e.g., no verification was provided that the preload did in fact trigger expected self-critical thoughts), its overall findings suggest that an intervention that enhances self-compassion among restrictive eaters functions as a buffer against emotion-focused eating as well as negative affect associated with such food consumption.

To summarize, research to date suggests that self-compassion independently accounts for a significant proportion of the variance in a wide array of measures of both adaptive and nonadaptive psychological functioning in nonclinical populations. Perhaps even more importantly, the consensus of the pair of experimental analogue studies with

college student samples is that self-compassion may act as a buffer against various forms of psychological distress. The most obvious weakness of such analogue research is limited external validity in extending the findings to clinical populations, underscoring the importance of also examining the role of self-compassion with such samples.

Clinical Research

This larger section will review research regarding self-compassion using clinical samples by first focusing on correlational studies, followed by a consideration of experimental and treatment-oriented research. Because self-compassion is still a relatively new area of empirical inquiry within psychology, there is a more modest amount of research that has been conducted on clinical samples relative to that published with nonclinical populations.

Correlational studies. Van Dam et al. (2011) found that the SCS accounted for 10 times more of the variance than a measure of mindfulness in predicting satisfaction with life as well as symptom severity among a sample diagnosed with mixed anxiety and depression. The overall findings suggest that differences in symptom severity among those struggling with mixed anxiety and depression accounted for by present moment awareness is effectively neutralized when self-compassion is considered.

Other research suggests that self-compassion and its specific aspects may be differentially related to varying dimensions of social anxiety. Werner et al. (2012) found, among those diagnosed with social anxiety disorder, that SCS total scores were not significantly related to measures of social anxiety that are more reflective of its behavioral aspects, but were to distress from either being publically criticized or praised.

There were, however, significant positive correlations between the more behavioral dimensions of social anxiety and the SCS subscales of self-judgment and isolation, suggesting that dispositional self-compassion more generally is closely associated with the cognitive aspects of social anxiety, whereas these two more specific aspects of self-compassion are more predictive of social avoidance. The overall findings suggest that the efficacy of interventions targeting self-compassion might be enhanced by making client-by-client adjustments based upon the specific dimensions of social anxiety that are most salient.

Brooks et al. (2012) also examined the relationship between self-compassion and anxiety, as well as depression, in a clinical sample diagnosed with alcohol dependency. The overall findings were noteworthy in their deviation from not only comparable analyses with nonclinical samples, but from the results of Van Dam et al. (2011) and Werner et al. (2012) as well. A negative correlation between total SCS scores and stress, as well as inverse relationships between the subscales of self-judgment, overidentification, and isolation, were consistent with the MacBeth and Gumley (2012) meta-analysis. However, overall levels of self-compassion were not related to depression or anxiety, and depression was unexpectedly positively correlated with self-kindness, while anxiety was positively related to all six subscales of the SCS, including self-kindness as well as mindfulness and common humanity.

It is unclear how to most meaningfully interpret these findings. One possibility favored by the researchers is that they may be attributed to the nature of the participants' relationship to alcohol. To the extent that alcohol use often functions as "self-medication," it could be seen as an act of self-kindness, even though drinking later leads

to feelings of guilt and negative self-judgment. This interpretation, however, is not supported by the finding that alcohol consumption was not related to any of the scales on the SCS. Another possible interpretation, and one not considered by the investigators, is that their anomalous results could be more parsimoniously accounted for by response bias. Specifically, response acquiescence on the part of participants would also yield significant positive correlations between the self-report measure used to assess anxiety and the six subscales of the SCS because of the way they are scored.

The aggregate correlational research on self-compassion with clinical populations has thus far produced somewhat mixed results, possibly attributable in part to somewhat diverse samples and inconsistent ways of assessing a number of the clinically-relevant variables. In general, the relationship between self-compassion and depression seems a bit clearer than that with various forms and dimensions of anxiety based upon both correlational research as well as the findings of experimental investigations of self-compassion enhancing interventions that will be considered next.

Experimental studies. Thus far at least three different interventions for enhancing self-compassion have been investigated with samples apparently displaying clinically-relevant levels of distress, particularly depression. In two related studies, Neff and Germer (2012) evaluated the efficacy of an 8 week mindful self-compassion program (MSC) designed according to the definition of self-compassion provided by Neff (2003). While it is unclear due to insufficient details about the participants if the samples within the two studies were experiencing clinical levels of depression, their findings seem relevant to consider here insofar as MSC was designed as a clinical intervention to enhance self-compassion and psychological well-being.

An initial pilot study found significant increases in self-compassion, mindfulness, life satisfaction, and happiness; as well as significant decreases in levels of depression, anxiety and stress over the course of treatment with a community sample recruited through an internet ad, local psychotherapists, as well as yoga and meditation instructors. Gains in self-compassion and mindfulness were maintained over 6 months follow-up, although such results cannot be unambiguously attributed to MSC given the absence of comparison conditions. This concern about internal validity was at least partially addressed during Study 2 in which community participants recruited through the same sources as the initial pilot study were randomly assigned to MSC or a waitlist control group. The overall findings closely paralleled those of Study 1, with MSC participants displaying significant increases in self-compassion, mindfulness, life satisfaction, and happiness; and decreases in depression, anxiety, and stress relative to the control condition that were maintained during follow-up.

While the two Neff and Germer (2012) studies in the aggregate suggest that the MSC program seems worthy of further evaluation, their findings must be held rather lightly because of limitations to both internal and external validity. Because MSC has yet to be compared against another active intervention and/or an attention-placebo control group, it remains unclear if any of its therapeutic impact can be attributed to any unique treatment-specific effects. Moreover, community samples in both studies included participants who were psychotherapy clients, but sufficient clinically-relevant information was lacking for all. Accordingly, it is unclear how promising MSC might be in assisting those who struggle with diagnosable depressive disorders.

At least two other interventions designed to target self-compassion have been applied to clinically depressed samples, although each differs in some respects from MSC. A pilot study by Gilbert and Procter (2006) evaluated the efficacy of a group intervention known as compassionate mind training (CMT) with a client sample diagnosed with mood and/or personality disorders and who struggled with self-criticism and shame. CMT is a psychological intervention originally designed to treat clients suffering from high self-criticism and shame and who are resistant to both medication and traditional forms of psychotherapy (Gilbert & Irons 2005; Gilbert & Procter, 2006). CMT, like MSC, can be seen as enhancing self-compassion, but it ostensibly does so by specifically targeting the self-judgmental/self-kindness dimension of self-compassion, whereas MSC is broader in its focus. A small group of participants ($N = 9$) displayed reduced levels of depression, anxiety, external shame, and feelings of inferiority over the course of 12 weeks of group CMT. Despite its small sample size, the external validity of this study appears to be a step up from the work of Neff and Germer (2012). However, it suffers from an absence of internal validity, making it impossible to ascribe any possible CMT-related benefits to specific treatment effects.

Further support for the possible depression-lowering impact of induced self-compassion is provided by a recent study of brief online interventions (Shapira & Mongrain, 2010). A community sample reporting a moderate level of depressive symptoms was randomly assigned to self-compassion, optimism, or control conditions. Participants in the self-compassion condition were asked to contemplate a distressing event that occurred each day for 1 week and to write a brief letter to themselves about it from a perspective of self-kindness and understanding. Participants in the optimism

condition were asked daily to imagine a positive future in which their current problems have been resolved, while those in the control condition were instructed daily to think and write about an early memory for 1 week.

Relative to the control group, participants receiving the self-compassion and optimism interventions reported less depressive symptoms 3 months following the intervention and greater levels of happiness at 6 month follow-up. While there were no significant differences in outcome variables between the two active treatment conditions, a moderating effect occurred for level of “connectedness,” defined as how highly one values social relationships and level of sensitivity to the effects of one’s actions on others (Rude & Burnham, 1995). Participants reporting higher levels of connectedness at baseline benefitted more from the self-compassion condition, while those with lower levels were more responsive to the optimism intervention, suggesting that self-compassion focused interventions may operate more according to a “strengths-based” as opposed to a remediation/deficit approach. That is, the moderating findings are consistent with the hypothesis that those who are more interpersonally connected to begin with and likely to be more empathetic and nurturing towards others may be more responsive to efforts to extend such kindness and compassion towards oneself. While the internal validity of the Shapira and Mongrain (2010) study appears to be adequate, the external validity may be limited given the online presentation of their self-compassion intervention. An obvious focus of further research would be to verify if similar moderating effects for variables reflective of interpersonal sensitivity and connectedness also hold in providing self-compassion focused interventions, such as MSC and CMT, within more traditional service-delivery systems.

Despite their collective and individual shortcomings, these three studies that have investigated interventions to enhance self-compassion suggest that they show enough promise, particularly in assisting those who struggle with depression, to merit closer examination. The development of empirically-supported approaches that target self-compassion is likely to be accelerated by not only further randomized clinical trials, but also by related process research with both clinical and analogue samples that identifies the possible mechanisms of action through which such interventions impact depression. As will be discussed further in the section that follows, rumination has increasingly been implicated as a contributing factor to depression that may be at least partially neutralized by increased self-compassion.

Self-Compassion and Rumination

Rumination is defined as a process of focusing one's attention on negative thoughts and emotions perseveratively and passively in an attempt to cope with distress, such as in bereavement following the death of a loved one (Nolen-Hoeksema, 1991). Dispositional rumination is most commonly assessed and measured with the Ruminative Response Scale (RRS; Nolen-Hoeksema, Marrow, & Fredrickson 1993). The status of rumination as a psychological risk factor for depression is by now well-established (Nolen-Hoeksema, Parker, & Larson, 1994; Spasojevic & Alloy, 2001) via its relationship to increased levels of depression, exacerbation of dysphoric mood, and increased negative thought patterns (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). For example, Nolen-Hoeksema et al. (1994) found that recently widowed adults with high levels of dispositional rumination as assessed by the RRS had significantly more

symptoms of depression at 6 months after the death of their spouse compared to participants who had low levels of rumination.

Factor analyses of the RRS suggest that it assesses depression as well as two dimensions of rumination independent of depression (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Of the two types of rumination, the brooding factor is more closely linked to depression than the reflective dimension. While reflective rumination involves neutral contemplation and problem solving (i.e., “I analyze recent events to try to understand why I’m depressed.”), brooding is related to “moody pondering” and focused on “why me” thoughts, perseveration about obstacles, and personal limitations (i.e., “Why do I always react this way?”) (Treynor et al., 2003). Of the two ruminative factors, brooding was found to be positively correlated with depression and was equivalent to the entire RRS at predicting depression (Treynor et al., 2003).

A significant relationship between self-compassion and rumination has been reported in correlational studies (Neff, 2003; Neff, Kirkpatrick, & Rude, 2007). These studies consistently found an inverse correlation between the RRS and the SCS and its positive subscales, as well as a positive correlation with the negative subscales of the SCS. They, however, did not separately examine the relationship between the two ruminative factors and self-compassion.

The inverse relationship between self-compassion and rumination and evidence that the former serves as a protective factor against depression, while the latter functions as a risk factor for it, suggests a possible pathway through which self-compassion may reduce vulnerability to depression. That is, self-compassion may neutralize or negate the pernicious effects of rumination in general and of brooding in particular. At least some

evidence supportive of this hypothesis was provided by Raes (2010) in analyzing the interrelationships among self-compassion, rumination, and depression. Raes (2010) found that brooding, but not reflective rumination, partially mediated the relationship between self-compassion and depression in a nonclinical, college student sample, suggesting that one of the ways that self-compassion has a buffering effect on depression is through undermining self-focused negative thinking.

Raes (2010) sought to determine the independent and interactional contributions of dispositional self-compassion and rumination as moderators to static, self-reported levels of depressive symptomology as assessed by the BDI-II. The current study sought to address this same fundamental question in the more dynamic context of three different dysphoric mood induction procedures. Doing so provided the opportunity to unpack the relative contributions that self-compassion and rumination make to dysphoric mood at not only pre and postinduction, but in also accounting for individual differences in responsivity to the induction procedures. The overall results should help further illuminate the process through which self-compassion attenuates the effects of brooding during dysphoric mood states.

Mood Induction Procedures

Several procedures have been shown to be effective in inducing dysphoric mood (Martin, 1990). In particular, induction procedures involving negative self-referential statements or mood congruent music have been found to be equally efficacious (Westermann, Spies, Stahl, & Hesse, 1996) in temporarily elevating dysphoria to an intermediate clinical level (Martin, 1990).

Velten procedure. One of the more widely researched manipulations shown to effectively induce dysphoric mood is the Velten Dysphoric Mood Induction Procedure (VMIP; Velten, 1968). The VMIP presents participants with 60 negative statements about self-devaluation (e.g., “I am discouraged and unhappy about myself.”) or somatic states (e.g., “I feel worn out, my health might not be as good as it’s supposed to be.”) related to depression (Martin, 1990). The VMIP appears to be inherently ruminative in nature as it asks participants to not only merely read the negative self-referent statements, but also to internally repeat them, focus upon them, and “feel” their meaning (Gird & Zettle, 2009). One condition in the current study used the VMIP to provide an apparently challenging test of the ability of self-compassion to counteract the combined depressogenic impact of both dispositional and induced rumination. In order to explore this putative moderating relationship a comparison between the VMIP and an induction procedure that is less ruminative in nature was made to see if the buffering effects of self-compassion are attenuated.

Musical induction procedures. In contrast to the VMIP, procedures that induce dysphoric mood via instrumental music would appear to be less likely to also instigate rumination, and for this reason, to be less effective in inducing dysphoria among participants predisposed to brooding. Barber’s “Adagio for Strings” and Sibelius’ “The Swan of Tuonela” are two instrumental pieces of music that have been employed in previous research for this purpose (Albersnagel, 1988; Bouhuys, Bloem, & Groothuis, 1995; Eich & Metcalfe, 1989; Morrow & Nolen-Hoeksema, 1990). Participants are asked to listen to a musical piece and use it to “get into” the suggested mood state (Martin, 1990). Albersnagel (1988), for example, instructed participants to listen to the

music “with focused attention, saturating oneself with the atmosphere or mood expressed in the music and trying to keep this atmosphere or mood with you after having listened to the music (p. 82).” Because a musical procedure has been shown to be at least as powerful, if perhaps not even more so than the VMIP in inducing dysphoric mood (Martin, 1990), its inclusion within this project provided a nonruminative condition against which the findings from the Velten group could be meaningfully compared (Albersnagel, 1988). For example, dispositional rumination in general, and brooding in particular, might be expected to exert minimal influence on how participants respond to a musical induction procedure, but to make a difference with the VMIP.

Combined procedures. A third procedure that combines the VMIP with musical passages (Gird & Zettle, 2009) was also presented given the possibility that such an induction procedure may enhance dysphoric mood over either component in isolation. While there is suggestive evidence that this may be the case (Gilet, 2008; Mathews & Bradle, 1983; Mayer, Gayle, Meehan, & Haarman, 1990), such a hypothesis has not yet been empirically evaluated. Consequently, the results of this study helped address this question, even though it was not its primary focus. More importantly, the inclusion of three induction procedures differing somewhat in their ruminative properties was expected to generate sufficient variability in dysphoric mood against which the relationship between self-compassion and brooding could be more clearly examined.

Mood-Related Dependent Variables

Several measures have served as potential dependent variables in evaluating the impact of differing mood induction procedures as independent variables and levels of dispositional self-compassion and rumination as ostensible moderating variables.

Self-report measures. The impact of mood induction procedures has most commonly been evaluated via self-report measures of dysphoric mood, especially the Depression Adjective Check Lists (DACL; Lubin, 1965), as was also the case in this study. Self-reports of dysphoric mood can also be supplemented by subjective indications of distress or discomfort. For example, this study included a measure similar to that used by Gird and Zettle (2009) in adopting the subjective units of distress scale or SUDS designed by Wolpe and Lazarus (1966) to assess distress four times over the course of the induction procedures and protocol.

Performance measures. To a lesser degree, performance measures have also been used to evaluate the impact of mood induction procedures as well as that of moderating and mediating variables.

Sustained attention. One such measure is that of sustained attention given research suggesting that it is negatively affected by depression. Farrin, Hull, Unwin, Wykes, and David (2003), for example, found that participants with mild to moderate levels of depression, as measured by the BDI-II, displayed impaired performance on a go-no-go cognitive task, the Sustained Attention to Response Task (SART; Robertson, Manly, Andrade, Baddeley, & Yiend 1997), that assesses sustained attention. However, use of the SART as a dependent variable in mood induction procedures has had mixed results. Smallwood, Fitzgerald, Miles, and Phillips (2009) found that participants performed significantly worse on the SART following negative mood induction than positive mood induction, but that both groups did not differ significantly from a neutral induction condition.

Other findings suggest it is not the protocol per se that the SART uses in presenting stimuli that may limit its utility in mood induction research, but the nature of those stimuli. In a within-subjects design, Chepenik, Cornew, and Farah (2007) found that following dysphoric mood induction, participants displayed a memory bias for sad words (e.g., recalling more sad words than neutral ones) and had hindered performance on a facial recognition task (i.e., identifying the emotion a face is expressing) compared to their performance after a neutral condition. Participants in the two conditions, however, did not differ in their performance on the SART with neutral stimuli (numbers), leading Chepenik et al. (2007) to suggest that cognitive processing of affective, but not neutral stimuli, is influenced by induced dysphoric mood. For this reason, a go-no-go task designed by Murphy et al. (1999), the Affective Go-No-Go task (AGNG), that uses affective words rather than numbers was used in this study to assess the impact of dysphoric mood induction.

Task performance. A second performance measure used as a dependent variable in dysphoric mood induction and related research has involved completion of certain behavioral tasks. For instance, a modified paper-and-pencil version of the Hampton Court maze (Boakes, 1984) was used by Hooper and McHugh (2013) to assess the impact of an intervention designed to reduce the effects of learned helplessness. Participants that received the intervention, and thus ostensibly experienced reductions in dysphoric mood, were able to complete the maze faster than participants who did not receive the intervention. A similar version of this task was employed in the present study.

Hypotheses and Expected Findings

The current study investigated the separate and potential interactive influences of dispositional self-compassion and rumination on the responsivity of college student participants to three mood induction procedures differing in their ruminative qualities. Although it was not a major focus of this project, the inclusion of a control condition also provided an opportunity to more fully evaluate the relative impact that each of the three experimental conditions had on dysphoric mood.

From an ANOVA perspective, this study can be viewed as a 4 (Induction Procedure) X 2 (Self-Compassion: high vs. low) X 2 (Rumination: high vs. low) between-subjects factorial design. Some of the expected findings seemed quite likely and accordingly were framed as directional hypotheses, while others seemed less certain and were appropriately seen as more exploratory in nature. Regardless of the specific outcomes under consideration, it seemed likely that larger effect sizes would emerge for the two self-report measures reflective of dysphoric mood than for the two performance measures. The inclusion of the performance measures nonetheless seemed useful as significant results involving them would add appreciably to the overall robustness of this study's findings.

Main effects. A main effect for induction procedure was anticipated insofar as all three of the experimental procedures were expected to have a greater impact on dysphoric mood than the control condition. Also as indicated, previous research suggests that musical procedures of the type used in this study may be more effective than the VMIP in inducing dysphoric mood (Albersnagel, 1988; Martin, 1990). However, no investigations to date have directly compared a procedure as used by Gird and Zettle (2009) that

combines musical passages with the self-statements of the Velten against each induction component alone. Because this combined procedure incorporated two components shown to be effective in increasing dysphoric mood, it was at least weakly anticipated that any additional differences among the three induction procedures would favor it, with the VMIP overall being the weakest.

Based on research reviewed earlier of the relationship between self-compassion and depression (Andréasson, 2012; MacBeth & Gumley, 2012; Neff, 2003), a strong main effect for self-compassion was predicted. More specifically, SCS scores were expected to account for significant levels of variability within mood-related measures. These measures included levels of depression as assessed by the BDI-II at preinduction as well as pre- to postinduction increases in dysphoric mood and distress as assessed by the DACL and SUDS, respectively.

Insofar as SCS scores were expected to be inversely correlated with those from the RRS, a strong main effect was also anticipated for dispositional rumination more generally, and for brooding in particular. That is, it was strongly predicted that there would be a main effect for self-compassion such that participants low in self-compassion would experience higher levels of induced mood compared to those high in self-compassion. It was also a strong directional hypothesis that there would be a main effect for brooding such that those more likely to engage in this form of rumination would experience greater induced mood than their low-brooding counterparts.

Interactions. Viewed within the ANOVA model, three two-way interactions as well as one three-way interaction were possibilities. Two of the two-way interactions seemed quite likely, while the expectation for the third was considerably more guarded.

One of the two strong expectations was for a significant Induction Procedure X Rumination interaction. Specifically, it was anticipated that the discrepancy between levels of induced mood between experimental condition participants indicating high levels of dispositional brooding and those low in this type of rumination would be most pronounced in the Velten and combined induction procedures. This is because these two procedures both contained a ruminative component while the musical induction did not.

The second two-way interaction for which a strong directional hypothesis was formulated was that between levels of self-compassion and rumination, especially brooding. Given research suggesting that self-compassion functions as a buffer against depression (Andréasson, 2012; MacBeth & Gumley, 2012; Neff, 2003), while rumination serves as a diathesis for it (Nolen-Hoeksema et al., 1994; Spasojevic & Alloy, 2001), it was expected that participants high in self-compassion and low in rumination would be the least responsive to the induction procedures. Conversely, it was anticipated that those reporting dispositionally low levels of self-compassion and high rumination would display the greatest increases in dysphoric mood and subjective distress across the three procedures.

A third possible two-way interaction between mood induction procedures and participant levels of self-compassion could not be ruled-out, but was generally unexpected. If such an interaction were found, it would be likely attributable to participants low in self-compassion being more responsive to the VMIP and combined procedure than the musical induction. Insofar as the VMIP and combined procedure contained elements expected to evoke some degree of brooding, those low in self-compassion would lack a buffer against such rumination.

Finally, there was at least a moderate expectation for a three-way interaction such that participants high in self-compassion and low in brooding would be less responsive to the VMIP and combined induction procedure than the one presenting musical passages alone. This was anticipated insofar as the musical induction procedure, unlike the other two, contained no ruminative instructions. For this same reason, it was also expected that those low in self-compassion and high in brooding would experience greater levels of induced mood in response to the VMIP and combined procedure than the musical induction. Such participants who are predisposed to brooding, yet lack sufficient buffering levels of self-compassion, were expected to be especially vulnerable to induction procedures that instructionally instigate rumination.

CHAPTER 3

METHODOLOGY

Participants

A total of 170 Wichita State University students aged 18 or older were initially recruited and evaluated as possible participants in this study. To participate in the study proper, students had to meet several selection criteria. Because of impaired performance on attentional tasks like the one used in this study by those who have suffered moderate to severe head injuries (Whyte, Grieb-Neff, Gantz, & Polansky, 2006), individuals experiencing an injury resulting in a loss of consciousness for 30 minutes or longer were excluded from further screening. Four students currently undergoing psychotherapy or pharmacological treatment for clinical depression and another 12 who indicated at least a mild level of clinical depression as reflected by a Beck Depression Inventory –II score \geq 16 (Beck et al., 1996), were excluded from participation. Due to the verbal nature of many of the tasks in the study, five students whose primary language was not English were also screened out.

To attain sufficient statistical power, the remaining 149 students were randomly assigned to the control group or to one of three mood induction procedures until acceptable data had been collected from 34 within each, for a final sample of 136 participants. Data from the largest group of participants (six) were not included because of experimenter error. Data from three more were excluded due to equipment malfunction, from another two for failing a treatment integrity check, and from one each due to noncompletion of the AGNG task and familiarity with the musical piece presented

in the protocol. As seen in Table 1, the majority of retained participants were female (64%) and White (71%) with a mean age of 22.48.

Measures

Moderating variables. Participants were asked to complete three self-report measures prior to the administration of the mood induction procedures to assess variables expected to moderate responsivity to them.

Beck Depression Inventory Second Edition (BDI-II). The BDI-II (see Appendix B) is a widely-used self-report measure containing 21 items assessing various signs and symptoms of depression (Beck et al., 1996). Responses are scored from 0-3, with higher scores suggesting increased levels of depression. The reliability and validity of the BDI-II are well established and have been shown to be adequate for use in clinical and research settings (Beck et al., 1996; Carmody, 2005; Dozois, Dobson, & Ahnberg, 1998; Sprinkle et al., 2002; Steer & Clark, 1997; Whisman, Perez, & Ramel, 2000). The internal consistency of the BDI-II in this sample was also adequate ($\alpha = .76$).

Administration of the BDI-II served two functions in this study. The first was to exclude individuals with a level of depression that might be exacerbated by their participation in the study. For this reason, as mentioned, 12 individuals who scored ≥ 16 on the BDI-II were excluded from participation. This exclusionary criterion reflects a mild level of clinical depression and was used previously to screen participants in a dysphoric mood induction study by Gird and Zettle (2009). While excluding some participants based on their level of depression limited the range of BDI-II scores (i.e., 0-

15), enough variability remained to still include them as a moderating/predictor variable in regression analyses.

Self-Compassion Scale (SCS). The SCS is a 26-item paper-and-pencil inventory that generates a total score as well as scores on the following six subscales: (a) self-kindness, (b) self-judgment, (c) common humanity, (d) isolation, (e) mindfulness, and (f) overidentification (see Appendix A; Neff, 2003). Each item on the SCS is rated on a 5-point Likert scale with answers ranging from “almost never” to “almost always.” Scores for the subscales are calculated by computing the mean of the individual items loading on them, with those from the self-judgment, isolation, and overidentification scales being reversed scored. The total SCS score is then calculated by determining the mean of the six subscales, thereby producing a range of 0-5. The psychometric properties of the SCS total and subscales scores as discussed in the previous chapter appeared to be adequate for the purposes of this study. This was substantiated by the following alpha coefficients in the present sample: (a) SCS total $\alpha = .91$, (b) self-kindness $\alpha = .86$, (c) self-judgment $\alpha = .82$, (d) common humanity $\alpha = .82$, (e) isolation $\alpha = .82$, (f) mindfulness $\alpha = .75$, and (g) overidentification $\alpha = .81$.

Ruminative Response Scale. The Ruminative Response Scale (RSS) is a 22-item questionnaire that assesses a person’s tendency to engage in rumination in the face of distress (see Appendix C; Nolen-Hoeksema et al., 1993). Each item is scored on a 4-point scale ranging from 1 (“almost never”) to 4 (“almost always”). Three separate subscales can be derived from the RRS based upon a factor analysis of it (Treynor et al., 2003): (a) brooding, (b) reflection, and (c) depression. The first two subscales consist of five items each and are of more direct interest in this study than the third as they capture

different dimensions of rumination independently of depression. More specifically, the brooding subscale measures a person's tendency to negatively self-reflect and place focus on obstacles to overcoming problems, while the reflection subscale involves internal problem solving (Nolen-Hoeksema et al., 2008).

The RRS has adequate internal consistency ($\alpha = .90$) and test-retest reliability over a 1 year time period ($r = .67$) (Treynor et al., 2003). The internal consistency of the two rumination subscales (brooding = .77, reflection = .72) as well as their temporal stability over a year (brooding = .62, reflection = .60) are somewhat less than that of the parent instrument, but still satisfactory for research purposes (Treynor et al., 2003). Research has shown that the RRS is related to levels of depression as well as dysphoric mood, and is associated with increased negative thought patterns, suggesting it has adequate construct validity (Nolen-Hoeksema et al., 2008). Treynor et al. (2003) found that the reflection factor of the RRS was correlated with lower levels of depression overtime, but had a significant positive relation to depression concurrently. By contrast, the RRS brooding subscale was positively related with depression both concurrently and longitudinally, with these correlations being significantly larger than those involving reflection (Treynor et al., 2003). While the validity of the two factors has not otherwise been studied extensively, they seem to be measuring separate dimensions of rumination based on their differential relationship to depression. Reflection may arise in the context of a depressed mood, but over time, may be an adaptive problem solving strategy. Conversely, the brooding factor seems to be associated with state depression as well as its exacerbation over time. The internal consistency of the total RRS score ($\alpha = .89$) as well

as that for the subscales (brooding $\alpha = .74$, reflection $\alpha = .79$, depression $\alpha = .83$.) were all within acceptable ranges in the present study.

Mood-related, self-report variables. Two self-report measures reflective of dysphoric mood were collected at four occasions: (a) preinduction, (b) postinduction, (c) following the administration of two mood-related, performance measures, and (d) following the presentation of a distraction task.

Depression Adjective Checklist (DACL). The DACL is a self-reported checklist of 22 positively valenced (e.g., “lively,” “alert”) and 10 negatively valenced self-descriptive adjectives (e.g., “downhearted,” “alone”) designed to assess dysphoric mood (see Appendix D; Lubin, 1965). Total scores range from 0 - 22, with higher scores reflecting greater levels of dysphoric mood, and are determined by the number of negatively valenced adjectives checked plus the number of positive adjectives not checked. Several alternative forms of the DACL have been developed (Lubin, 1965), with four of them (forms A, B, C, and D) used in this study. These forms of the DACL have demonstrated adequate internal consistency as assessed by Cronbach’s alpha ($\alpha = .88$) as well as simple split-half reliability ($r = .91$) (Lubin, 1965). Conversely, Zuckerman and Lubin (1965) reported that all forms of the DACL had expectedly low test-retest reliability ($r = .21$), which is appropriate for a measure of transient mood. Lubin (1965) reported sufficient evidence for the validity of the DACL by its ability to discriminate between clinically depressed and nonclinical samples and its significant relationship with the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Alpha coefficients for the four DACL forms administered at preinduction were somewhat

lower than the level reported by Lubin (1965), but still within an acceptable range: (a) DACL A = .83, (b) DACL B = .79, (c) DACL C = .73, and (d) DACL D = .67.

Subjective Units of Distress Scale (SUDS). The SUDS rating is a commonly used means to assess subjective distress (see Appendix E; Wolpe & Lazarus, 1966). Participants were asked to rate their level of distress by providing a mark on an analog scale ranging from 1 (“not at all distressed”) to 100 (“completely distressed”).

Mood-related, performance-based variables. Two performance-based measures reflective of dysphoric mood were collected at postinduction only.

Affective Go-No-Go Task (AGNG). Research suggests that sustained attention in general is hindered by depression (Farrin et al., 2003), and particularly during tasks, such as the AGNG, that require processing of affective words rather than neutral stimuli (Murphy et al., 1999). Both Murphy et al. (1999) as well as Erickson et al. (2005) found that clinically depressed participants displayed an impaired ability to successfully shift their focus of attention from sad words (e.g., “gloomy,” “failure”) to happy words (e.g., “joyful,” “success”). They also displayed an affective bias reflected by faster reaction times for sad words. While the AGNG has not apparently been used previously to assess the impact of mood induction procedures, it seemed likely to be sensitive enough to serve as an attentional measure of increased dysphoric mood.

The AGNG task involves presenting 10 blocks of randomly sequenced happy and sad words on a computer screen at a rate of 1.2 s per word. The task was programmed using MATLAB (version 2010a) and the Psychophysics Toolbox (Brainard, 1997; Pelli & Farell, 1994). The affective words selected for this study were rated as highly positive or highly negative according to the Affective Norms for English Words (ANEW) list

developed by the NIHM Center for Study of Emotion & Attention at the University of Florida (Bradley & Lang, 1999). This wordlist provided a set of normative emotional ratings for thousands of English words.

Each of the 10 blocks of the AGNG contained 18 words (9 happy and 9 sad), with one or the other designated as target words for that particular block, and were introduced with the following general instructions that appeared on the computer screen:

Press the spacebar when you see a HAPPY (SAD) word. Do not respond when you see a SAD (HAPPY) word. Respond as quickly and accurately as possible because the words are presented rapidly. Remember, press the spacebar for HAPPY (SAD) words.

Half of the 10 blocks were “happy (H) blocks” in which participants were asked to press the space bar in response to happy target words (e.g., “glad,” “love”), but to refrain from responding to sad nontarget words (e.g., “weep,” “misery”). The remaining 5 blocks were “sad (S) blocks” in which the target and nontarget words were switched. Each word was accordingly presented in two different blocks, first as a target word within a “nonshift” block (e.g., “glad” within an H block or “weep” within an S block) and a second time within a “shift block” as a nontarget or distractor word (e.g., “glad” within an S block or “weep” within an H block). Thus, the entire task required 45 happy words and 45 sad words (5 blocks X 9 words in each block for each affective type) compiled into five different word lists that were each presented twice. See Appendix F for these word lists and for a more detailed description of the sequence in which they were presented.

The first two of the 10 AGNG blocks were presented for practice, while the subsequent eight were test blocks that yielded analyzable data. The presentation order of happy (H) and sad (S) blocks were the same as that used by Murphy et al. (1999) and were either H(1)H(1)S(2)S(3)H(2)H(3)S(4)S(5)H(4)H(5) or S(1)S(1)H(2)H(3)S(2)S(3)H(4)H(5)S(4)S(5), with the parenthetical numbers denoting the word lists in Appendix F. The two blocks were sequenced in this way to assess the ability of participants to shift their attention across stimuli (words) that differ in their affective valence. Which of the two ordered sequences was presented to each participant was determined by random assignment. For example, if a participant was assigned to the first ordered sequence [H(1)H(1)S(2)S(3)H(2)H(3)S(4)S(5)H(4)H(5)], word list 2 was initially presented in the first test block, S(2), and then repeated in the third test block, H(2). For such a participant, a sad word (e.g., “weep”) was a target during the initial, nonshift test block, but a nontarget or distractor word the second time it appeared two blocks later within a shift block.

The dependent measures of response time and accuracy derived from the AGNG were similar to those outlined in Murphy et al. (1999). . Response time was the latency it took a participant to press the space bar in response to a target word (e.g., “love” within an H block). Accuracy was the percentage of correct responses, calculated by subtracting errors and omissions from the total number of words presented, and then dividing the remainder by this same total. An error occurred when a participant responded to a distractor word (“misery” within an H block), while an omission was counted when a participant failed to respond to a target word within the 1.2 second response window.

The two performance measures of response time and accuracy were analyzed across three dimensions: (a) general ability, (b) mood bias, and (c) shift ability. The dimension of general ability reflected a participant's overall performance on the two measures across the eight test blocks. For example, the general ability dimension of response time was based on the average latency to respond across the test blocks. The general ability measure of accuracy was determined by subtracting the cumulative number of errors and omissions that occurred over the eight test blocks from the total number of words presented within them (i.e., 144), and then dividing the remainder by this same total.

The dimension of mood bias was evaluated by separately comparing response time and accuracy data between H and S blocks.. For example, response time for mood bias was evaluated by averaging the response time for H blocks and comparing that to the average response time for S blocks. Accuracy for mood bias was analyzed in a similar way by comparing the accuracy in H blocks relative to S blocks. The dimension of shift ability similarly was examined by separately comparing response time and accuracy measures during nonshift blocks (blocks in which a list of words was first presented) to those during shift blocks (blocks in which a list of words was repeated, but with the target valence reversed).

Hampton Court Maze. Participants as quickly as possible were asked to successfully complete a paper-and-pencil version of the Hampton Court maze (see Appendix G) designed by Boakes (1984) with completion time recorded with a stopwatch. The number of errors, defined as entrance into a “dead end,” committed in

completion of the maze were also counted. The following spoken instructions were the same as those used by Hooper and McHugh (2013):

Please complete the maze on the table in front of you in the quickest time possible. Your time will be recorded. In order to complete the maze task, you have to begin at the X marked on the perimeter of the maze and work your way to the center. As soon as you begin, I will start the stopwatch (p. 5).

Experimental and Control Conditions

Participants were randomly assigned to one of three dysphoric mood induction procedures or a control condition, with each lasting 12 -17 minutes. The instructions and self-referential statements used in the VMIP and combined induction procedures as well as neutral statements in the control condition were adopted from Gird and Zettle (2009).

Velten mood induction procedure (VMIP). Slides of 60 self-referential statements characteristic of thoughts people may experience during a depressed mood (e.g., “I’ve felt so alone before, that I could have cried” and “All of the unhappiness of my past life is taking possession of me”) were presented on a computer screen. Each was presented for 12 s and were the same array adapted by Gird and Zettle (2009) from the original Velten statements. Participants were asked to read each statement silently with instructions to “feel” the mood suggested by each statement while listening to white noise via headphones to mask any distracting, extraneous sounds. The full instructions, which took 5 minutes, as well as individual statements presented during the VMIP, which took an additional 12 minutes, are provided in Appendix H.

Musical mood induction procedure (MMIP). Participants were presented with the following instructions modified from those used by Albersnagel (1988) prior to listening via headphones to sorrowful musical compositions: “Listen to the music with focused attention, saturating yourself with the atmosphere or mood expressed in the music and keeping this atmosphere or mood with you after having listened to the music (p. 82).” The current study used both Barber’s “Adagio for Strings” and Sibelius’ “The Swan of Tuonela,” pieces that have been used in previous research to successfully induce dysphoric mood (Albersnagel, 1988; Bouhuys et al., 1995; Trambakolous, 1997; Eich & Metcalfe, 1989; Morrow & Nolen-Hoeksema 1990; Gird & Zettle, 2009). The musical compositions were played for the same length of time (approximately 12 minutes) required to present the statements of the VMIP.

Combined procedure. This induction procedure lasted the same length of time as the VMIP (i.e., 17 minutes) and asked participants to read the 60 self-referential statements included in the VMIP, while listening to the same music played in the MMIP. Instructions related to the statements were the same as those for the VMIP and appeared on a computer screen (see Appendix H). The following spoken instructions taken from Gird and Zettle (2009) were provided concerning the musical passages: “At a certain point, you will hear some music playing. This music will help reduce possible distractions from outside noises so that you may concentrate your full attention on the material you see presented on the screen.”

Control condition. Sixty neutral statements (i.e. “Oklahoma City is the largest city in the world in area, with 631.166 square miles”) were presented by slides on a computer screen for the same length of time (i.e., 17 minutes) as the VMIP and combined

procedures. As with the VMIP, participants listened to white noise during the presentation and were given the same instructions (see Appendix I).

Procedure

The study was advertised as “A Comparison of Mood Induction Procedures” on the SONA online system to students in psychology classes at Wichita State University as one of several opportunities through which they could either earn optional extra credit or required research participation points. A total of 170 students wishing to participate in the study signed up for slots posted on the system and reported at their scheduled time to a research laboratory located within the Department of Psychology. Upon arrival, informed consent was obtained (see Appendix J) followed by the administration of a semistructured interview (see Background Questionnaire in Appendix K) to obtain demographic information and to screen for exclusionary criteria, including an insufficient command of English as evidenced by five students, or a history of at least moderate head injury or current treatment for clinical depression as reported by four students. Participants subsequently completed the BDI-II to screen out 12 experiencing a current level of depression (≥ 16) that might be exacerbated by the mood induction procedures. Students who met any of the exclusionary criteria were debriefed before they were dismissed from further participation.

Remaining steps in the procedure for retained participants are listed in Table 2. They next completed the SCS and the RRS counterbalanced for order via an online survey followed by baseline, preinduction DACL and SUDS. The administration of the four forms of the DACL was presented to participants in a randomly counterbalanced

sequence as well. Participants were then randomly assigned to either the control condition or to one of the three mood induction procedures and immediately afterwards completed a second DACL and SUDS rating. During approximately the next 5 minutes, participants completed the AGNG task (with one failing to do so), followed by the presentation of the Hampton Court maze. Data on the AGNG were collected via computer, while completion time on the maze was recorded with a stopwatch.

After the Hampton Court maze, participants were asked to complete a third DACL and SUDS. In order to reduce any lingering dysphoric mood, participants completed a 10 minute distraction activity borrowed from Gird and Zettle (2009), followed by the administration of a fourth and final DACL and SUDS. Finally, prior to debriefing (see Appendix L), participants were asked to complete a postinduction questionnaire (see Appendix M) that served as a manipulation and integrity check with two of them failing it. More specifically, participants were asked to indicate their understanding of what they were instructed to do during the induction procedure, provide a rating of the degree to which they followed the instructions, and what else, if anything, they did during the procedure.

CHAPTER 4

RESULTS

Demographic characteristics and levels of preinduction variables for the total sample, as well as for three experimental groups and control condition, are reported in Table 1. A series of comparisons suggest that this project's sample was largely comparable to those of related studies. More specifically, the preinduction mean and standard deviations for total scores on the RRS and SCS, as well as BDI-II, did not differ from previous studies also using nonclinical samples (Gird & Zettle, 2009; Neff, 2003; Nolen-Hoeksema, 2000). Differences that were noted did not appear to be substantive and were limited to the reflection subscale of the RRS, five of the six SCS subscales, and preinduction DACL. Overall this sample was more reflective, higher in positive dimensions of self-compassion (self-kindness and mindfulness) while lower in negative dimensions (self-judgment, isolation, and overidentification), and more dysphoric at baseline as assessed by the DACL.

A series of chi-square analyses and an ANOVA on age revealed no significant differences in demographic characteristics across the four conditions. Similarly, there also were no significant between-group differences at preinduction in the reflection and depression subscales of the RRS, levels of self-compassion and depression, nor in DACL or SUDS scores. However, there was a preinduction difference with the RRS brooding subscale for the control condition significantly elevated relative to the three experimental groups.

A review of ratings on the Postinduction Questionnaire (Appendix M, item 2) suggested that participants in general closely followed instructions presented to them in the three experimental conditions and control group ($M = 7.79$, $SD = 1.44$ on a 10-point scale). An ANOVA indicated that MMIP participant ratings ($M = 8.29$, $SD = 1.32$) were comparable to those from the combined condition ($M = 7.96$, $SD = 1.33$), but were significantly higher than VMIP ($M = 7.51$, $SD = 1.49$) and control group ratings ($M = 7.41$, $SD = 1.51$). However, the only dependent variable that the ratings were even weakly related to, $r = .21$, $p = .01$, was postdistraction DACL. For this reason, the ratings of instruction following were not included as a covariate in any subsequent analyses.

Mood-Related, Self-Report Variables

Analyses of change in dysphoric mood and subjective distress across the three experimental groups and control condition were first conducted. These data are reported in Table 3.

Dysphoric mood. To determine alterations in levels of dysphoric mood, a 4 (measurement occasion) X 4 (induction condition) repeated-measures ANOVA was performed on DACL scores. The only significant finding involved a large effect size for measurement occasion, $F(3,130) = 70.68$, $p < .001$, $\eta_p^2 = .35$, indicating that all four conditions were equally effective in impacting dysphoric mood. As can be seen in Table 3 and in Figure 1, DACL scores across the four measurement occasions displayed a quadratic trend. Post-hoc paired comparisons indicated that DACL scores increased significantly from preinduction to postinduction, decreased significantly from postinduction to posttask, and significantly decreased further from posttask to

postdistraction, to where the level of dysphoric mood at the end of the study was equivalent to that reported by participants at its beginning.

This quadratic trend in DACL scores for the three experimental conditions was generally anticipated and was expected to be moderated by baseline levels of self-compassion and rumination. However, the same pattern for the control group was not expected, suggesting the possible influence of demand characteristics on changes in DACL scores for at least this condition. To further understand if different factors accounted for the significant changes in dysphoric mood across the four conditions, a series of regression analyses were next undertaken. Specifically, for each of the three postbaseline administrations of the DACL (e.g., postinduction), DACL scores from the immediately preceding administration (e.g., preinduction); and total scores on the SCS, RRS, and their interaction, as well as BDI-II scores at baseline; were entered as predictors into separate regression analyses for the three experimental conditions taken as an aggregate and for the control group alone. The SCS X RRS interaction term was calculated by first converting scores on each to z -scores for each participant and then multiplying them to produce a crossproduct. Table 4 presents correlations among variables analyzed as predictors in the regression analyses. As can be seen, the variables at most only correlated moderately with each other, suggesting it was appropriate to analyze them separately.

Postinduction DACL. As seen in Table 5, the aggregate, $R^2 = .03, p = .71$, and control condition regression analyses, $R^2 = .05, p = .93$, were both insignificant, indicating that variables other than the five examined accounted for variability in dysphoric mood levels assessed at Time 2.

Posttask DACL. With the aggregate sample (see Table 6), the regression model significantly accounted for just over 30% of the variance, $R^2 = .31$, in posttask DACL scores, $F(5,96) = 8.51, p < .01$. The only significant predictor of the five variables was postinduction DACL scores, $\beta = .55, p < .01$. Separate analyses for each of the three experimental conditions were next conducted to examine this finding further. Significant models were obtained for VMIP; $R^2 = .37, F(5,28) = 3.29, p = .02$; and MMIP; $R^2 = .42, F(5,28) = 3.99, p < .01$; but not for the condition that combined both induction methods; $R^2 = .24, F(5,28) = 1.73, p = .16$. In both models, the only significant predictor of dysphoric mood following completion of the AGNG task and Hampton Court maze was postinduction DACL scores, $\beta = .55, p < .01$.

A significant regression model (see Table 7) was also obtained with the control group, $R^2 = .35, F(5,28) = 3.03, p = .03$. However, unlike the findings for VMIP and MMIP, the only significant predictor was total RRS scores at preinduction, $\beta = .42, p < .03$. Because the RRS is comprised of three subscales (brooding, reflection, and depression) a second regression was conducted with each entered as the only predictors in the model. This second model was also significant, $F(3,30) = 4.26, p = .01$, but accounted for a reduced proportion of variability in DACL scores at Time 3, $R^2 = .30$. None of the three subscales alone were significant predictors, although the depression subscale of the RRS carried the greatest weight, $\beta = .45, p = .06$.

Postdistraction DACL. The regression model (see Table 8) for the aggregated experimental conditions was not significant, $R^2 = .09, F(5,96) = 1.94, p = .09$. By contrast, as displayed in Table 9, that for the control sample was, $R^2 = .45, F(5,28) = 4.49, p < .01$. Preinduction SCS scores were the only significant predictor, $\beta = -.60, p <$

.01, indicating that participants reporting higher levels of self-compassion were less dysphoric. Like the RRS, the SCS is also comprised of several subscales (i.e., self-kindness, self-judgment, common humanity, isolation, mindfulness, and overidentification). Accordingly, scores on each were entered as the only predictors in a second regression. This second model was significant, $F(5,27) = 5.50, p < .01$, and accounted for a higher proportion of variability in DACL scores at Time 4, $R^2 = .55$. Among the six subscales, self-kindness was significantly inversely related to postdistraction DACL scores, $\beta = -.60, p < .02$; while isolation was a significant direct predictor of dysphoric mood following the distraction activity, $\beta = .37, p < .04$.

Subjective distress. Similar to the analysis of changes in dysphoric mood, a 4 (measurement occasion) X 4 (induction condition) repeated-measures ANOVA also was performed on ratings of subjective distress. A significant main effect for measurement occasion, $F(3,130) = 22.63, p < .001, \eta_p^2 = .15$, as well as a significant interaction, $F(9, 124) = 2.90, p = .002, \eta_p^2 = .06$, were obtained. As can be seen in Table 3 and in Figure 2, SUDS scores across the four measurement occasions displayed a quadratic trend that parallels that noted for changes in dysphoric mood. Post-hoc paired comparisons indicated that ratings of subjective distress for the sample as a whole increased significantly from preinduction to postinduction, decreased significantly from postinduction to posttask, and significantly decreased further from posttask to postdistraction, to where the level of subjective distress at the end of the study was significantly less than that reported by participants at its beginning.

Figure 3 displays the significant measurement occasion X induction condition interaction. A series of repeated measures ANOVAs that were conducted for each of the

four conditions indicated significant quadratic trends for VMIP, $F(3,31) = 13.91, p < .001, \eta_p^2 = .30$, and the combined induction procedure, $F(3,31) = 11.46, p < .001, \eta_p^2 = .26$. The control condition displayed a significant linear trend, $F(3,31) = 6.42, p = .001, \eta_p^2 = .16$, while levels of subjective distress did not vary across measurement occasions for MMIP participants.

A series of post-hoc comparisons indicated that SUDS ratings for the two experimental conditions increased significantly from preinduction to postinduction, decreased significantly from postinduction to posttask, and significantly decreased further from posttask to postdistraction. Subjective distress at postdistraction for VMIP participants was equivalent to that reported at preinduction, while postdistraction SUDS scores for those in the combined induction procedure were significantly lower than at preinduction. For the control group, levels of subjective distress decreased in a linear fashion over time such that ratings at the first two measurement occasions were significantly higher than at the last. In addition, posttask SUDS scores were significantly lower than preinduction levels.

The anticipated quadratic trend in subjective distress for the VMIP and combined induction condition, like that for the DACL scores, was expected to be moderated primarily by baseline levels of self-compassion and rumination. To investigate this possibility, a series of regression analyses were separately performed for each of the two experimental conditions at each of the postbaseline administrations of the SUDS. The same variables evaluated in predicting DACL scores (i.e., baseline levels of SCS, RRS, their interaction, and the BDI-II) were entered into the models with one exception. DACL scores from the previous measurement occasion were replaced with those

obtained at the same point in time as the SUDSs scores being predicted. This was because distress was expected to be at least in part also influenced by current level of dysphoric mood, and including the DACL score from the same measurement occasion provided a means of determining if self-compassion, rumination, and their interaction, as well as possibly baseline levels of depression predicted variability in subjective distress above and beyond that accounted for by concurrent dysphoric mood state.

Postinduction SUDS. The regression models for the VMIP, $R^2 = .45$, $F(5,28) = 4.55$, $p = .004$, and combined induction procedure, $R^2 = .42$, $F(5,28) = 3.99$, $p = .007$, were both significant. For each, the only significant predictor was postinduction DACL scores; VMIP, $\beta = .42$, $p = .008$; combined condition, $\beta = .55$, $p = .001$, indicating that levels of postinduction distress were not moderated by baseline levels of self-compassion, rumination, their interaction, or depression.

Posttask SUDS. The regression models for both induction conditions were significant; VMIP, $R^2 = .57$, $F(5,28) = 7.50$, $p < .001$; combined procedure; $R^2 = .33$, $F(5,28) = 2.73$, $p = .04$. Once again concurrent dysphoric mood as assessed by posttask DACL scores was the only significant predictor in both models; VMIP, $\beta = .62$, $p < .001$; combined condition, $\beta = .39$, $p = .02$.

Postdistraction SUDS. The regression model for the VMIP condition was significant, $R^2 = .39$, $F(5,28) = 3.55$, $p = .01$, with postdistraction DACL as the only significant predictor, $\beta = .42$, $p = .02$. By contrast, the regression model for the combined condition was not significant, $R^2 = .25$, $F(5,28) = 1.98$, $p = .11$.

Mood-Related, Performance-Based Variables

Means and standard deviations for the performance-based variables derived from the postinduction administration of the AGNG task and Hampton Court maze are presented in Table 10.

AGNG. Performance measures of response time and accuracy were analyzed across three dimensions: (a) general ability, (b) mood bias, and (c) shift ability.

General ability. General ability as an index of overall performance on the task was determined by computing the mean response time and level of accuracy for each participant across the eight test blocks of the AGNG. ANOVAs indicated no significant differences between the four induction conditions in overall response time; $F(3,132) = .52, p = .67$; or accuracy; $F(3,132) = .66, p = .57$, suggesting that any subsequent findings in the dimensions of mood bias or shift ability cannot be attributed to differences in general ability.

Mood bias. Response time and accuracy scores were analyzed separately with two 4 (induction condition) X 2 (word block: H vs. S) ANOVAs. Significant main effects for word block alone were found for both response time; $F(1,132) = 10.57, p < .001, \eta^2 = .07$; and accuracy $F(1,132) = 21.47, p < .001, \eta^2 = .14$. There were no significant interactions for either measure nor a main effect for induction condition, suggesting performance on these variables did not vary as a function of induction condition. Contrary to expectations, participants displayed faster reaction times to blocks of happy words. However, as anticipated, they also made fewer errors in responding to blocks of sad words.

To investigate possible moderators of the main effect for accuracy in the mood bias domain, separate regression analyses were performed for the three experimental groups as an aggregate and the control condition. The same variables evaluated in predicting postinduction DACL scores (i.e., baseline levels of SCS, RRS, their interaction, and the BDI-II, and preinduction DACL scores) were entered into the models. The regression models for the aggregate conditions, $R^2 = .12$, $F(5,96) = .63$, $p < .68$, and the control group, $R^2 = .33$, $F(5,28) = .79$, $p = .57$, were not significant.

Shift ability. A 4 (induction condition) X 2 (word block: Shift vs. nonshift) ANOVA indicated no significant main effects or interaction for response time. A significant main effect for word block alone on accuracy was found; $F(1,132) = 12.01$, $p < .001$, $\eta p^2 = .08$, indicating that participants unexpectedly displayed greater accuracy in responding to words in which their initial target valence was shifted than when those same words were initially presented in nonshift blocks.

Hampton Court maze. ANOVAs indicated no significant differences between the four induction conditions in time required to complete the maze ; $F(3,132) = 1.04$, $p = .38$; or in number of errors committed in doing so; $F(3,132) = 1.62$, $p = .19$. Regression analyses using the same variables as with the AGNG measures (i.e., baseline levels of SCS, RRS, their interaction, as well as the BDI-II and preinduction DACL scores) in predicting maze completion time and errors were conducted for the three experimental conditions as an aggregate and separately for the control group. While the model predicting maze completion time for the aggregate conditions, $R^2 = .04$, $F(5,96) = .71$, $p = .62$, was not significant, that for the control group was, $R^2 = .32$, $F(5,28) = 2.60$, $p = .05$, with RRS as the only significant predictor, $\beta = .46$, $p = .03$. The models predicting

errors for the aggregate conditions, $R^2 = .04$, $F(5,96) = .70$, $p = .63$, and the control group, $R^2 = .26$, $F(5,28) = 1.95$, $p = .12$, were both not significant.

Summary

To facilitate the discussion that follows, Table 11 summarizes key findings from the analyses of the study's dependent variables.

CHAPTER 5

DISCUSSION

The current study's main focus, as indicated by its title, was to investigate the potential protective effects of dispositional self-compassion in the induction of dysphoric mood. Relatedly, this project also provided an opportunity to assess the hypotheses that trait-like rumination conversely would serve as a contributing factor to dysphoric mood and related variables both by itself, and in interaction with self-compassion. Specifically, it was anticipated that participants high in self-compassion and low in rumination would demonstrate the smallest increase in dysphoric mood and subjective distress, while those reporting dispositionally low levels of self-compassion and high rumination would display the greatest increases in dysphoric mood and subjective distress across the three experimental induction procedures.

As summarized in Table 11, there were no key findings indicating that the reaction of participants to active efforts to induce dysphoric mood was moderated by their levels of self-compassion and rumination. The absence of any supportive findings on the two performance-based measures was not completely unanticipated as such variables are not regularly used as dependent measures in mood induction research in large part due to their presumed relative insensitivity. Their inclusion in this study in effect provided a more rigorous means of potentially identifying some of the variables that most powerfully impact dysphoric mood.

More unexpected than the lack of any findings suggesting moderating roles for self-compassion and rumination in the analyses of the two performance-based measures

for experimental condition participants, was a similar pattern of results for the two self-report measures. Regression analyses instead identified dysphoric mood from the previous or current phase, respectively, as the only significant predictors of dysphoric mood and subjective distress. The finding that these variables moderated changes over phases in the two self-report measures is not all that surprising and accordingly seems to not warrant further discussion. That they were the only variables playing this role is more noteworthy.

Most unexpected, however, were the findings that preinduction levels of self-compassion were predictive of postdistraction dysphoric mood, and that baseline levels of rumination were associated with posttask dysphoric mood and completion time on the Hampton Court maze, but only for control group participants who were not subjected to any type of mood induction procedure whatsoever. In other words, there was no ostensible induction effect for the control group that could have been moderated by baseline levels of either self-compassion or rumination. It would seem that two factors, either alone or in combination with each other, might at least partially help account for the overall unexpected and somewhat paradoxical results of this project: (a) strong demand characteristics, and (b) weak induction effects.

Strong Demand Characteristics

One consideration is that the increases in dysphoric mood noted for the three experimental conditions are more reflective of a demand characteristic than any induction effect. An expected significant quadratic trend for changes in dysphoric mood similar to that reported by other researchers (e.g., Gird & Zettle, 2009) was obtained for

the three experimental conditions. More specifically, DACL scores increased from preinduction to postinduction, decreased from postinduction to posttask, and decreased further from posttask to postdistraction. Viewed in isolation, these findings would suggest an equivalent, but significant, mood induction effect for all three experimental groups. Unexpectedly, however, the same quadratic trend for DACL scores was obtained for control group participants, raising the possibility that the apparent “induction effect” for the three experimental conditions can be attributed to demand characteristics.

The possible influence of demand characteristics on mood induction procedures has been the focus of considerable discussion and investigation. In a meta-analysis evaluating the effectiveness of several types of mood induction procedures (MIPs), Westermann et al. (1996) found that investigations that explicitly ask participants to make an effort to enter a particular mood state lead to higher demand characteristics than studies that control for demand by not informing participants about the aim of the research. They further elaborated, “it cannot be ruled out that for MIPs that explicitly ask subjects to enter a certain mood state, demand characteristics lead to an overestimation of their effectiveness” (Westermann et al. 1996, p. 557).

Investigations of demand characteristics specific to the VMIP have been somewhat inconsistent in their conclusions. Buchwald, Strack, and Coyne (1981) conducted a “constructive replication (p. 478)” of Velten’s (1968) study and failed to find significant differences on mood-related variables between the control and mood induction conditions. They concluded their investigation by stating, “we were unable to reject the hypothesis that observed effects of the procedures are entirely attributable to

demand characteristics (Buchwald et al., 1981, p. 478)” and by pointing out that demand characteristics were inherent in the instructions as well as within the statements presented in the VMIP. On the other hand, Larsen and Sinnett (1991) conducted a meta-analysis on research limited to the Velten procedure and concluded that demand characteristics only add to a genuine induction effect. Had this occurred in this project, however, postinduction DACL scores for VMIP participants, and presumably at least for those in the combined induction condition as well, should have been significantly higher than the control group. In short, the findings and conclusions of Buchwald and Coyne seem to be more congruent with the overall results of this project than those of Larsen and Sennett.

The control group protocol in this study closely resembled that of Velten (1968) in one respect, but also apparently appreciably deviated from it in another. The neutral statements presented by Velten to participants were only slightly modified in order to update them. For example, the original statement “Oklahoma City is the largest city in the world in area, with 631.166 square miles” was changed to “Tokyo is the largest city in the world with a population of over 33 million”.

An important respect in which the control condition in this study differed from that of Velten (1968) involves the instructions presented to participants. To provide a strong control for demand characteristics, the control group in this project essentially received the same instructions as VMIP. In doing so, it was anticipated that the three experimental conditions would exert an impact on dysphoric mood that would exceed that attributable to shared demand characteristics. The VMIP, combined, and control conditions received first person instructions such as:

I will always attempt to respond to the *feeling* suggested by each item. I will then try to think of myself with as much clarity and realism as possible as definitely being and *moving into* that mood state. I am letting myself be receptive to these feelings (Appendix H).

Similarly, the MMIP condition asked participants to “Listen to the music with focused attention, saturating yourself with the atmosphere or mood expressed in the music and keeping this atmosphere or mood with you after having listened to the music (p.47).” To the extent that each of the four conditions explicitly instructed participants to enter a specific mood state, all were vulnerable to demand characteristics.

Velten (1968) reported that both dysphoric and elation induction procedures impacted mood to a significantly greater degree than his control or neutral condition. However, unlike in this study, participants in Velten’s control and dysphoric mood induction conditions did not receive the same instructions. The dysphoric and elation induction groups were instructed to “feel the mood suggested by the statements” (Velten, 1968, p. 474). Participants in the control condition, by contrast, did not receive equally suggestive instructions and were instead asked to merely “concentrate on each of the statements.” It accordingly appears that the stronger demand characteristics present in the control condition in this study, compared to that of Velten, was a major contributing factor to the absence of any discernible induction effect for the three experimental groups.

It seems worth noting that language in the consent form (see Appendix J) may have also contributed to a strong demand characteristic in this study. This document did

not explicitly state there was the possibility of being assigned to a control condition, but instead indicated, “Because all of the procedures are likely to affect your mood, it is reasonable to expect that you may feel some sad and dysphoric feelings during and perhaps shortly following the procedure.” Such language perhaps understandably led all participants, including those randomly assigned to the control condition, to expect a heightened level of dysphoric mood. A way of addressing this possibility in future research would be to make reference in the consent form to the inclusion of a noninduction control group in addition to perhaps “toning down” some of the demand characteristics within the instructions for this condition. For example, future research might include two different control conditions, one with suggestive instructions similar to those provided in this study, as well as another with instructions more like those employed by Velten (1968) that does not inform the participant about the purpose of the presented statements.

Weak Induction Effects

As suggested by the conclusions of Larsen and Sinnett (1991), it seems plausible that the impact on dysphoric mood of the VMIP, in particular, and of similar induction procedures more generally may reflect demand characteristics as well as a “true induction effect” (p. 331). Accordingly, a separate contributing factor for the equivalent impact of the control and experimental conditions on dysphoric mood may have been weak induction effects for the three experimental protocols. To further evaluate this possibility, some of the findings from this project were compared to those of another study that used the same induction procedure with a similar sample of students at this university. The combined condition in the current study in which participants were

presented with self-referential statements as well as music was the same induction procedure used by Gird and Zettle (2009).

Predinduction DACL scores for the combined condition in this study, $M = 7.56$, $SD = 2.61$, were significantly higher, $t(1,72) = 2.55$, $p = .01$, than those of Gird and Zettle (2009), $M = 5.78$, $SD = 3.29$. There were also preinduction differences in level of depression as assessed by the BDI-II, $t(1,72) = 2.14$, $p = .04$, between this study, $M = 6.76$, $SD = 3.47$, and Gird and Zettle, $M = 4.90$, $SD = 3.93$, despite comparable levels of variability in both samples. These differences suggest a possible ceiling effect that may have limited the impact of the combined condition in particular and that of the other two experimental groups as well. The absence of any significant difference in postinduction DACL scores as well as SUDS between the two studies provides further evidence suggestive of this likelihood and explains why the pre to postinduction change scores for this study, $M = 4.76$, $SD = 4.36$, were significantly smaller, $t(1,72) = 2.73$, $p = .01$, than those of Gird and Zettle, $M = 8.00$, $SD = 5.61$. Additionally, while the effect sizes for the pre to postinduction elevation in dysphoric mood for the two studies both fell within the large range, that of Gird and Zettle, $\eta p^2 = .68$, was larger than that for the combined condition of this project, $\eta p^2 = .55$.

In conclusion, it seems that suggestive language in the consent form as well as instructions to participants likely led to equally high demand characteristics for the experimental conditions as well as the control group. Additionally, elevated levels of dysphoric mood at preinduction may have contributed to a ceiling effect and thereby precluded the possibility of an induction effect also contributing to increased dysphoric mood from pre to postinduction. Insofar as there evidently was no genuine induction

effect produced by the experimental conditions in this study, there was also no opportunity to examine the possible moderating roles of dispositional self-compassion and rumination in mood induction.

Due to these factors, one consideration for future research is to use mood induction procedures that rely less on suggestive instructions and ideally also create a greater range in levels of induced mood. According to Westermann et al. (1996), the most effective type of mood induction procedures present films or stories with suggestive instructions similar to those used in the VMIP and MMIP conditions that ask participants to “imagine and 'get involved' in the situation described and in the feelings suggested (p. 559).” Schaefer, Nils, Sanchez, and Philippot (2010) have even compiled a database of short films shown to elicit dysphoric mood, such as a scene from *City of Angels* (Roven, Steel, & Silberling, 1998) in which one of the main characters dies in the arms of her lover.

The same films and stories without suggestive instructions (e.g., “Please watch the film carefully”; Gross & Levenson, 1995) appear to be less powerful and comparable to the VMIP in inducing dysphoric mood (Rottenberg, Ray, & Gross, 2007; Westermann et al., 1996). Thus, controlling for demand characteristics by taking away suggestive instructions and leaving participants uninformed about the purpose of a film or story limits their inductive impact (Westermann et al., 1996). While demand characteristics could be minimized with the nonsuggestive use of certain films and stories, the levels of induced dysphoric mood are unlikely to be significantly higher than that attained with the VMIP and other more suggestive procedures. However, such film presentations may be particularly useful in further examining the moderating effects of

self-compassion and rumination in mood disturbance by inducing dysphoric states that are relatively uncontaminated by demand characteristics. As the overall results of this project bring into focus, an adequate analogue examination of the possible roles that self-compassion and rumination play in the initiation and maintenance of depression is severely compromised if dysphoric mood that is induced in the laboratory for this purpose is largely attributable to demand characteristics.

Examining Self-Compassion and Rumination

Developing and identifying mood induction procedures that may be less susceptible to demand characteristics, even if not more powerful, is but one consideration in advancing analogue research examining the roles of self-compassion and rumination in depression. Another consideration is to further develop more powerful ways of specifically examining the potential contributions of self-compassion and rumination in the initiation and maintenance of mood disorders. As discussed in Chapter 2, most research in this area has been similar to that of the current study in using a correlational strategy to measure and relate dispositional levels of self-compassion and rumination to induced increases in dysphoric mood. This strategy is predicated on the assumption that participants who score high on paper-and-pencil measures of each will be more likely to spontaneously engage in self-compassion and rumination during a mood induction procedure than their counterparts who score low on each. However, this may not be a safe assumption and studies such as this one do not typically conduct integrity checks to verify if it is.

An alternative way to address the relationship between self-compassion, rumination and mood disorders could involve experimentally manipulating each as independent variables in evaluating their impact on levels of induced dysphoric mood as a primary dependent variable. Although it seems unlikely that self-compassion and rumination could be elicited simultaneously and therefore studied interactively, previous research provides examples how both can be separately induced in the laboratory. For instance, Leary et al. (2007) found that a brief self-compassion induction following the recall of a negative event led to reduced negative affect and a sense of connection to others compared to a neutral condition. The induction encouraged participants to use self-kindness, common humanity, and mindful-awareness, while recalling the negative event in order to create a compassionate understanding of the experience. For example, to cultivate self-kindness, they were instructed “to write a paragraph expressing understanding, kindness, and concern to themselves in the same way that they might express concern to a friend who had undergone the experience” (Leary et al., 2007, p. 899). A similar exercise could be completed prior to an induction procedure to see if self-compassion could be manipulated and serve as a potential buffer against dysphoric mood.

Lyubomirsky and Nolen-Hoeksema (1993) found that a rumination induction similar to the concept of brooding led to a decreased willingness to participate in pleasant activities among dysphoric participants. The induction asked participants to focus their attention on thoughts that were emotion-, symptom-, and self-focused such as “Think about the physical sensations in your body” and “Think about the possible consequences of the way you feel” (Lyubomirsky & Nolen-Hoeksema, 1993, p. 342). A

similar procedure could be used in the laboratory to examine the possible contribution of induced rumination to dysphoric mood elicited through other means such as the presentation of films or VMIP.

A Framework for Mood Induction Research

Efforts to situate this particular project and its overall findings and limitations within the broader context of mood induction research suggests a framework that may be useful in considering both extant as well as further investigations in this area. As depicted in Figure 4, one dimension along which mood induction procedures themselves can be seen to vary involves suggestibility. Although this dimension appears to be a continuous one, for ease of discussion it may be more useful at this juncture to construe it as dichotomous, thereby creating a 2 X 2 table or framework, when combined with a second dimension that involves methods used to study variables that may moderate mood induction effects. As discussed, some procedures, such as the presentation of certain films and stories, have been shown to induce dysphoric mood in the absence of suggestive instructions, while others like VMIP appear to be highly dependent upon them. Within this framework, the induction procedures included in this study clearly fall within the left column of Figure 4. By contrast, the presentation of mood-inducing films and stories in the absence of suggestive instructions fall within the right column.

The rows of Figure 4 denote the two methods that have been used to investigate variables in the laboratory that may moderate induced mood states. The top row involves using either a suggestive (cell A) or nonsuggestive induction procedure (cell B) while correlationally evaluating putative moderating variables through the

administration of dispositional self-report measures. The current study, as well as most of the extant mood induction research, constitute examples of design A. Research representative of cell B within Figure 4 would involve using a nonsuggestive induction procedure, like a film or story, and dispositional measures of purported moderating variables such as self-compassion and rumination. Ciarrochi, Chan, and Caputi (2000) provide an example of such research in evaluating the moderating role of emotional intelligence on the impact of a mood-eliciting film. They found that people with high levels of emotional intelligence, as assessed by a self-report dispositional measure, were better able than those with low emotional intelligence at managing mood induced by a film presentation without suggestive instructions.

Analogue investigations illustrative of the bottom row of Figure 4 would experimentally study hypothesized moderating variables and processes through induction exercises such as those designed by Leary et al. (2007) for self-compassion and by Lyubomirsky and Nolen-Hoeksema (1993) for rumination. Self-compassion and rumination could be separately induced in the laboratory prior to and/or following the elicitation of dysphoric mood by either suggestive procedures (cell C), such as VMIP, or those that are not, like certain films and stories (cell D). A review of the literature uncovered no clear instances of either cell C or D within Figure 4 in which self-compassion was induced, but some examples involving rumination. Huffziger and Kuehner (2009) found that dysphoric mood elicited by a suggestive procedure involving sorrowful music with the recall of a sad memory was prolonged by a rumination induction exercise. A study similar in focus to that of Huffziger and Kuehner, but employing a nonsuggestive mood induction procedure, was conducted by Morrow and

Nolen-Hoeksema (1990). Participants completed either a rumination or distraction activity following the presentation of a sad story with sorrowful music, but without suggestive instructions. Those completing the distraction activity demonstrated significant larger decreases in dysphoric mood than participants who completed the rumination activity.

Dependent Variables in Mood induction Research

A third and final factor worthy of further consideration in mood induction research involves the selection of dependent variables against which differing induction procedures are compared and the impact of purported buffering and risk variables are evaluated. This project closely paralleled most other research in this area by focusing primarily on mood-related, self-report measures as dependent variables. Unfortunately, as already discussed, subjective measure such as the DACL are especially likely to be influenced by demand characteristics and suggestive instructions.

The second self-report measure examined in this study, SUDS, would appear to be even more susceptible to such influences. Perhaps because of this, as well as several other reasons, the overall findings involving SUDS were more confusing and inconsequential than illuminating. SUDS has been described as a measure of secondary or perceived distress, while the DACL represents a measure of primary distress (Gird & Zettle, 2009). Results for the VMIP and the combined induction procedure seemingly provided some support for this conceptualization. As summarized in Table 9, a quadratic trend for changes in SUDS that paralleled that seen for dysphoric mood was obtained for both conditions. In addition, DACL scores were predictive of subjective

distress at the same measurement occasion, particularly for VMIP. On the other hand, no trend in SUDS ratings emerged for MMIP and a linear trend was obtained for the control condition. Moreover, to the extent that changes in DACL scores can be attributed to suggestive instructions, their relationship to any corresponding alterations in SUDS ratings may simply reflect the impact of demand characteristics on both.

An alternative account for the inconsistent SUDS findings appeals to differing ruminative properties associated with the four conditions examined in this study. As described earlier, the VMIP and combined condition were inherently ruminative in nature, while the MMIP and control protocol were not. The experimental procedures as well as the control condition in the current study impacted reported levels of primary distress (DACL), while only the VMIP and combined condition increased secondary distress (SUDS). This suggests that SUDS may be more impacted by procedures that include ruminative elements, a possibility worthy of further exploration in future research that explicitly examines how subjective distress is impacted by rumination induction exercises like that of Lyubomirsky and Nolen-Hoeksema (1993).

Due to concerns about the susceptibility of self-report measures to demand characteristics (Westermann et al., 1996), the current study also included performance-based variables in evaluating the contributions of differing induction procedures and moderating variables to dysphoric mood. Because performances on the AGNG and maze are less likely to be swayed by suggestive instructions and did not share method or source variance with self-report measures, the hope was that any changes on the DACL and SUDS would be corroborated by related findings on these two performance-related measures. Unfortunately, this hope was not realized.

Previous research found that depressed participants displayed a “mood congruent bias” on the AGNG task as revealed by faster reaction times and increased accuracy for blocks of sad versus happy words (Erickson et al., 2005; Murphy et al., 1999). Conversely, control participants either demonstrated no difference in response times (Murphy et al., 1999) or faster reaction times and greater accuracy for happy words (Erickson et al., 2005). Murphy et al. (1999) found that depressed participants had slower response times for shift blocks on the AGNG compared to control participants. while manic participants were faster to respond to shift blocks. Additionally, both Murphy et al. (1999) and Erickson et al. (2005) found overall participants made significantly more errors on shift than nonshift blocks.

As summarized in Table 9, no differences were noted in this study between the three experimental conditions and the control group on any of the AGNG measures. A comparison of the findings with those of Erickson et al. (2005) and Murphy et al. (1999) suggests that the sample as a whole behaved in a way similar to control group participants in these two previous studies, lending further support to the interpretation that changes in the two self-report measures are primarily attributable to demand characteristics. While participants displayed a bias effect typical of dysphoric mood with increased accuracy for sad blocks of the AGNG, they responded faster to happy blocks, showed no reaction times differences between shift and nonshift blocks on the AGNG, and made fewer errors on shift blocks. In short, of these four findings on the AGNG, only one was what was expected of participants in a dysphoric mood state based on the results of Erickson et al. (2005) and Murphy et al. (1999).

Because Murphy et al. (1999) did not report any descriptive statistics, analytic comparisons with the current study were not possible. However, to further understand the AGNG data from this study, a series of statistical analyses were conducted comparing them to those of Erickson et al. (2005). Average response times to both happy, $t(1,154) = 0.69, p = .49$, and sad words, $t(1,154) = 0.50, p = .62$, as well as variability in each of these measures, did not differ between this study's sample and the control group of Erickson et al. (2005). Moreover, participants in this project displayed response times for happy words that were significantly faster, $t(1,154) = 3.05, p < .01$, than those of Erickson et al.'s depressed group. The final performance-based measures evaluated in the current study were derived from completion of the Hampton Court maze and also revealed no differences between the three experimental groups and the control condition. Hooper and McHugh (2013) found that a control group took significantly longer to complete the maze ($M = 49.1$ s) than participants who received a brief intervention designed to increase defusion from dysphoric thoughts ($M = 39$ s). Unfortunately, because Hooper and McHugh (2013) failed to report standard deviations, a direct comparison with data from this study was precluded. However, it seems worth noting that the completion time for participants in this project ($M = 46.02$ s) was closer to that of their control group who had completed a task designed to induce learned helplessness. Accordingly the performance of participants in this study, as discussed earlier, may reflect their relatively high preinduction level of dysphoric mood compared to that reported by other investigators (Gird & Zettle, 2009).

Concluding Comments

The current study and its overall findings appear to speak more informatively to the challenges and limitations of conducting mood induction research in general than they do more specifically about the moderating roles that self-compassion and rumination may play in the initiation and maintenance of affective disorders. These challenges include, but are not limited to how to design procedures that ethically induce adequate levels of dysphoric mood in the absence of suggestive instructions, and the selection of dependent measures that are sufficiently sensitive to detect such changes while being relatively immune to demand characteristics.

Laboratory research on mood induction is certainly an appropriate area of inquiry in its own right. However, the purpose of this study, and seemingly of most other similar basic laboratory research in this area, is to serve as an analogue for better understanding variables that contribute to the etiology and treatment of mood disorders. The question is whether this purpose can be realized by addressing the challenges inherent in analogue research highlighted by this project's results. If such limitations cannot be overcome, the clinic alone ultimately may be the only viable site in which the empirical question of whether cultivating self-compassion can improve our ability to both prevent and alleviate human emotional suffering may be satisfactorily answered.

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APPENDICES

APPENDIX A

Self-Compassion Scale (SCS)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

- | Almost never | | | | | Almost always |
|---------------------|----------|----------|----------|--|--|
| 1 | 2 | 3 | 4 | | 5 |
| _____ | | | | | 1. I'm disapproving and judgmental about my own flaws and inadequacies. (SJ) |
| _____ | | | | | 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong. (OI) |
| _____ | | | | | 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through. (CH) |
| _____ | | | | | 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world. (I) |
| _____ | | | | | 5. I try to be loving towards myself when I'm feeling emotional pain. (SK) |
| _____ | | | | | 6. When I fail at something important to me I become consumed by feelings of inadequacy. (OI) |
| _____ | | | | | 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am. (CH) |
| _____ | | | | | 8. When times are really difficult, I tend to be tough on myself. (SJ) |
| _____ | | | | | 9. When something upsets me I try to keep my emotions in balance. (M) |
| _____ | | | | | 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people. (CH) |
| _____ | | | | | 11. I'm intolerant and impatient towards those aspects of my personality I don't like. (SJ) |
| _____ | | | | | 12. When I'm going through a very hard time, I give myself the caring and tenderness I need. (SK) |
| _____ | | | | | 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am. (I) |
| _____ | | | | | 14. When something painful happens I try to take a balanced view of the situation. (M) |
| _____ | | | | | 15. I try to see my failings as part of the human condition. (CH) |

- _____ 16. When I see aspects of myself that I don't like, I get down on myself. (SJ)
- _____ 17. When I fail at something important to me I try to keep things in perspective. (M)
- _____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it. (I)
- _____ 19. I'm kind to myself when I'm experiencing suffering. (SK)
- _____ 20. When something upsets me I get carried away with my feelings. (O)
- _____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering. (SJ)
- _____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness. (M)
- _____ 23. I'm tolerant of my own flaws and inadequacies. (SJ)
- _____ 24. When something painful happens I tend to blow the incident out of proportion. (OI)
- _____ 25. When I fail at something that's important to me, I tend to feel alone in my failure. (I)
- _____ 26. I try to be understanding and patient towards those aspects of my personality I don't like. (SK)

Note: Parenthetical initials denote on which of the following subscales that item loads: Self-kindness (SK), Self-judgment (SJ), Common Humanity (CH), Isolation (I), Mindfulness (M), and Overidentification (OI).

APPENDIX B

Beck Depression Inventory II (BDI-II)

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it.

2. Pessimism

- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

3. Past Failure

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6. Punishment Feelings

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

7. Self-Dislike

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

8. Self-Criticalness

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

10. Crying

- 0 I don't cry any more than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

_____ Subtotal Page 1

11. Agitation

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interested in anything.

13. Indecisiveness

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

14. Worthlessness

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

15. Loss of Energy

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

16. Changes in Sleeping Patterns

- 0 I have not experienced any change in my sleeping pattern.
-
- 1a I sleep somewhat more than usual.
 - 1b I sleep somewhat less than usual.
-
- 2a I sleep a lot more than usual.
 - 2b I sleep a lot less than usual.
-
- 3a I sleep most of the day.
 - 3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

18. Changes in Appetite

- 0 I have not experienced any change in my appetite.

1a My appetite is somewhat less than usual.

1b My appetite is somewhat greater than usual.

2a My appetite is much less than before.

2b My appetite is much greater than usual.

3a I have no appetite at all.

3b I crave food all the time.

19. Concentration Difficulty

- 0 I can concentrate as well as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

20. Tiredness or Fatigue

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

_____ **Subtotal Page 1**

_____ **Subtotal Page 2**

_____ **Total Score**

APPENDIX C

Ruminative Response Scale (RRS)

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you generally do, not what you think you should do.

1 almost never **2** sometimes **3** often **4** almost always

- ___ 1. Think about how alone you feel, (D)
- ___ 2. Think “I won’t be able to do my job if I don’t snap out of this.”(D)
- ___ 3. Think about your feelings of fatigue and achiness. (D)
- ___ 4. Think about how hard it is to concentrate. (D)
- ___ 5. Think “What am I doing to deserve this?” (B)
- ___ 6. Think about how passive and unmotivated you feel. (D)
- ___ 7. Analyze recent events to try to understand why you are depressed. (R)
- ___ 8. Think about how you don’t seem to feel anything anymore. (D)
- ___ 9. Think “Why can’t I get going?” (D)
- ___ 10. Think “Why do I always react this way?” (B)
- ___ 11. Go away by yourself and think about why you feel this way. (R)
- ___ 12. Write down what you are thinking about and analyze it. (R)
- ___ 13. Think about a recent situation, wishing it had gone better. (B)
- ___ 14. Think “I won’t be able to concentrate if I keep feeling this way.”(D)
- ___ 15. Think “Why do I have problems other people don’t have?” (B)
- ___ 16. Think “Why can’t I handle things better?” (B)
- ___ 17. Think about how sad you feel. (D)
- ___ 18. Think about all your shortcomings, failings, faults, mistakes. (D)
- ___ 19. Think about how you don’t feel up to doing anything. (D)
- ___ 20. Analyze your personality to try to understand why you are depressed. (R)

_____ 21. Go someplace alone to think about your feelings. (R)

_____ 22. Think about how angry you are with yourself. (D)

Note: Parenthetical initials denote on which of the following subscales that item loads: Brooding (B), Reflection (R), and Depression (D).

APPENDIX D

CHECK LIST

DACL Form A

Below you will find words which describe different kinds of moods and feelings. Check the words which describe **how you feel now—today**. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly and check all of the words which describe how you feel **right now**.

- | | |
|---|--|
| 1. <input type="checkbox"/> Wilted | 17. <input type="checkbox"/> Strong |
| 2. <input type="checkbox"/> Safe | 18. <input type="checkbox"/> Tortured |
| 3. <input type="checkbox"/> Miserable | 19. <input type="checkbox"/> Listless |
| 4. <input type="checkbox"/> Gloomy | 20. <input type="checkbox"/> Sunny |
| 5. <input type="checkbox"/> Dull | 21. <input type="checkbox"/> Destroyed |
| 6. <input type="checkbox"/> Gay | 22. <input type="checkbox"/> Wretched |
| 7. <input type="checkbox"/> Low-spirited | 23. <input type="checkbox"/> Broken |
| 8. <input type="checkbox"/> Sad | 24. <input type="checkbox"/> Light-hearted |
| 9. <input type="checkbox"/> Unwanted | 25. <input type="checkbox"/> Criticized |
| 10. <input type="checkbox"/> Fine | 26. <input type="checkbox"/> Grieved |
| 11. <input type="checkbox"/> Broken-hearted | 27. <input type="checkbox"/> Dreamy |
| 12. <input type="checkbox"/> Down-cast | 28. <input type="checkbox"/> Hopeless |
| 13. <input type="checkbox"/> Enthusiastic | 29. <input type="checkbox"/> Oppressed |
| 14. <input type="checkbox"/> Failure | 30. <input type="checkbox"/> Joyous |
| 15. <input type="checkbox"/> Afflicted | 31. <input type="checkbox"/> Weary |
| 16. <input type="checkbox"/> Active | 32. <input type="checkbox"/> Droopy |

CHECK LIST

DACL Form B

Below you will find words which describe different kinds of moods and feelings. Check the words which describe **how you feel now—today**. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly and check all of the words which describe how you feel **right now**.

- | | |
|---|--|
| 1. <input type="checkbox"/> Downhearted | 17. <input type="checkbox"/> Clean |
| 2. <input type="checkbox"/> Lively | 18. <input type="checkbox"/> Dispirited |
| 3. <input type="checkbox"/> Unfeeling | 19. <input type="checkbox"/> Moody |
| 4. <input type="checkbox"/> Alone | 20. <input type="checkbox"/> Pleased |
| 5. <input type="checkbox"/> Unhappy | 21. <input type="checkbox"/> Dead |
| 6. <input type="checkbox"/> Alive | 22. <input type="checkbox"/> Sorrowful |
| 7. <input type="checkbox"/> Terrible | 23. <input type="checkbox"/> Bleak |
| 8. <input type="checkbox"/> Poor | 24. <input type="checkbox"/> Light |
| 9. <input type="checkbox"/> Forlorn | 25. <input type="checkbox"/> Morbid |
| 10. <input type="checkbox"/> Alert | 26. <input type="checkbox"/> Heavy-hearted |
| 11. <input type="checkbox"/> Exhausted | 27. <input type="checkbox"/> Easy-going |
| 12. <input type="checkbox"/> Heartsick | 28. <input type="checkbox"/> Gray |
| 13. <input type="checkbox"/> Bright | 29. <input type="checkbox"/> Melancholy |
| 14. <input type="checkbox"/> Glum | 30. <input type="checkbox"/> Hopeful |
| 15. <input type="checkbox"/> Desolate | 31. <input type="checkbox"/> Mashed |
| 16. <input type="checkbox"/> Composed | 32. <input type="checkbox"/> Unlucky |

CHECK LIST

DACL Form B

Below you will find words which describe different kinds of moods and feelings. Check the words which describe **how you feel now—today**. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly and check all of the words which describe how you feel **right now**.

- | | |
|---|--|
| 1. <input type="checkbox"/> Downhearted | 17. <input type="checkbox"/> Clean |
| 2. <input type="checkbox"/> Lively | 18. <input type="checkbox"/> Dispirited |
| 3. <input type="checkbox"/> Unfeeling | 19. <input type="checkbox"/> Moody |
| 4. <input type="checkbox"/> Alone | 20. <input type="checkbox"/> Pleased |
| 5. <input type="checkbox"/> Unhappy | 21. <input type="checkbox"/> Dead |
| 6. <input type="checkbox"/> Alive | 22. <input type="checkbox"/> Sorrowful |
| 7. <input type="checkbox"/> Terrible | 23. <input type="checkbox"/> Bleak |
| 8. <input type="checkbox"/> Poor | 24. <input type="checkbox"/> Light |
| 9. <input type="checkbox"/> Forlorn | 25. <input type="checkbox"/> Morbid |
| 10. <input type="checkbox"/> Alert | 26. <input type="checkbox"/> Heavy-hearted |
| 11. <input type="checkbox"/> Exhausted | 27. <input type="checkbox"/> Easy-going |
| 12. <input type="checkbox"/> Heartsick | 28. <input type="checkbox"/> Gray |
| 13. <input type="checkbox"/> Bright | 29. <input type="checkbox"/> Melancholy |
| 14. <input type="checkbox"/> Glum | 30. <input type="checkbox"/> Hopeful |
| 15. <input type="checkbox"/> Desolate | 31. <input type="checkbox"/> Mashed |
| 16. <input type="checkbox"/> Composed | 32. <input type="checkbox"/> Unlucky |

CHECK LIST

DACL Form B

Below you will find words which describe different kinds of moods and feelings. Check the words which describe **how you feel now—today**. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly and check all of the words which describe how you feel **right now**.

- | | |
|---|--|
| 1. <input type="checkbox"/> Downhearted | 17. <input type="checkbox"/> Clean |
| 2. <input type="checkbox"/> Lively | 18. <input type="checkbox"/> Dispirited |
| 3. <input type="checkbox"/> Unfeeling | 19. <input type="checkbox"/> Moody |
| 4. <input type="checkbox"/> Alone | 20. <input type="checkbox"/> Pleased |
| 5. <input type="checkbox"/> Unhappy | 21. <input type="checkbox"/> Dead |
| 6. <input type="checkbox"/> Alive | 22. <input type="checkbox"/> Sorrowful |
| 7. <input type="checkbox"/> Terrible | 23. <input type="checkbox"/> Bleak |
| 8. <input type="checkbox"/> Poor | 24. <input type="checkbox"/> Light |
| 9. <input type="checkbox"/> Forlorn | 25. <input type="checkbox"/> Morbid |
| 10. <input type="checkbox"/> Alert | 26. <input type="checkbox"/> Heavy-hearted |
| 11. <input type="checkbox"/> Exhausted | 27. <input type="checkbox"/> Easy-going |
| 12. <input type="checkbox"/> Heartsick | 28. <input type="checkbox"/> Gray |
| 13. <input type="checkbox"/> Bright | 29. <input type="checkbox"/> Melancholy |
| 14. <input type="checkbox"/> Glum | 30. <input type="checkbox"/> Hopeful |
| 15. <input type="checkbox"/> Desolate | 31. <input type="checkbox"/> Mashed |
| 16. <input type="checkbox"/> Composed | 32. <input type="checkbox"/> Unlucky |

CHECK LIST

DACL FORM C

Below you will find words which describe different kinds of moods and feelings. Check the words which describe **how you feel now—today**. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly and check all of the words which describe how you **feel right now**.

- | | |
|---|--|
| 1. <input type="checkbox"/> Cheerless | 17. <input type="checkbox"/> Buoyant |
| 2. <input type="checkbox"/> Animated | 18. <input type="checkbox"/> Tormented |
| 3. <input type="checkbox"/> Blue | 19. <input type="checkbox"/> Weak |
| 4. <input type="checkbox"/> Lost | 20. <input type="checkbox"/> Optimistic |
| 5. <input type="checkbox"/> Dejected | 21. <input type="checkbox"/> Low |
| 6. <input type="checkbox"/> Healthy | 22. <input type="checkbox"/> Deserted |
| 7. <input type="checkbox"/> Discouraged | 23. <input type="checkbox"/> Burdened |
| 8. <input type="checkbox"/> Bad | 24. <input type="checkbox"/> Wonderful |
| 9. <input type="checkbox"/> Despondent | 25. <input type="checkbox"/> Crushed |
| 10. <input type="checkbox"/> Free | 26. <input type="checkbox"/> Heavy-hearted |
| 11. <input type="checkbox"/> Despairing | 27. <input type="checkbox"/> Interested |
| 12. <input type="checkbox"/> Uneasy | 28. <input type="checkbox"/> Joyless |
| 13. <input type="checkbox"/> Peaceful | 29. <input type="checkbox"/> Crestfallen |
| 14. <input type="checkbox"/> Grim | 30. <input type="checkbox"/> Lucky |
| 15. <input type="checkbox"/> Distressed | 31. <input type="checkbox"/> Chained |
| 16. <input type="checkbox"/> Whole | 32. <input type="checkbox"/> Pessimistic |

CHECK LIST

DACL FORM D

Below you will find words which describe different kinds of moods and feelings. Check the words which describe how you feel now—today. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly and check all of the words which describe how you feel right now.

- | | |
|--|---|
| 1. <input type="checkbox"/> Depressed | 17. <input type="checkbox"/> Fit |
| 2. <input type="checkbox"/> Elated | 18. <input type="checkbox"/> Lonesome |
| 3. <input type="checkbox"/> Miserable | 19. <input type="checkbox"/> Unloved |
| 4. <input type="checkbox"/> Lifeless | 20. <input type="checkbox"/> Glad |
| 5. <input type="checkbox"/> Grief-stricken | 21. <input type="checkbox"/> Grave |
| 6. <input type="checkbox"/> Inspired | 22. <input type="checkbox"/> Sunk |
| 7. <input type="checkbox"/> Low-spirited | 23. <input type="checkbox"/> Shot |
| 8. <input type="checkbox"/> Lonely | 24. <input type="checkbox"/> Merry |
| 9. <input type="checkbox"/> Suffering | 25. <input type="checkbox"/> Wasted |
| 10. <input type="checkbox"/> Mellow | 26. <input type="checkbox"/> Washed out |
| 11. <input type="checkbox"/> Drooping | 27. <input type="checkbox"/> Clear |
| 12. <input type="checkbox"/> Rejected | 28. <input type="checkbox"/> Gruesome |
| 13. <input type="checkbox"/> Fortunate | 29. <input type="checkbox"/> Tired |
| 14. <input type="checkbox"/> Dreary | 30. <input type="checkbox"/> High |
| 15. <input type="checkbox"/> Lousy | 31. <input type="checkbox"/> Worse |
| 16. <input type="checkbox"/> Good | 32. <input type="checkbox"/> Drained |

APPENDIX E

Subjective Units of Distress (SUDS)

Instructions:

Please rate the degree to which you currently feel distressed. On a scale of 1-100, with **1** being “not at all distressed” and **100** being “completely distressed,” how distressed do you feel right now?

APPENDIX F

Word Lists for the AGNG Task

List 1		List 4	
<u>Happy Words</u>	<u>Sad Words</u>	<u>Happy Words</u>	<u>Sad Words</u>
Happiness	Miserable	Complete	Sorrow
Achievement	Crushed	Pleasure	Agony
Paradise	Weep	Confident	Mourn
Glad	Torture	Gift	Frustrated
Love	Misery	Enthusiastic	Shamed
Giggle	Tragedy	Beautiful	Lonely
Amaze	Loser	Kindness	Hopeless
Thrilled	Depression	Ecstatic	Disappointment
Satisfied	Rejection	Pleasure	Upset

List 2		List 5	
<u>Happy Words</u>	<u>Sad Words</u>	<u>Happy Words</u>	<u>Sad Words</u>
Excellence	Grieve	Loving	Unhappy
Triumphant	Hardship	Laughter	Sob
Like	Trauma	Amusement	Distressed
Smile	Rejected	Admired	Depressed
Acceptance	Disappoint	Peace	Shame
Happy	Humiliation	Carefree	Despairing
Joy	Isolation	Enjoyment	Sadness
Outstanding	Failure	Kind	Sad
Delight	Gloom	Excitement	Grief

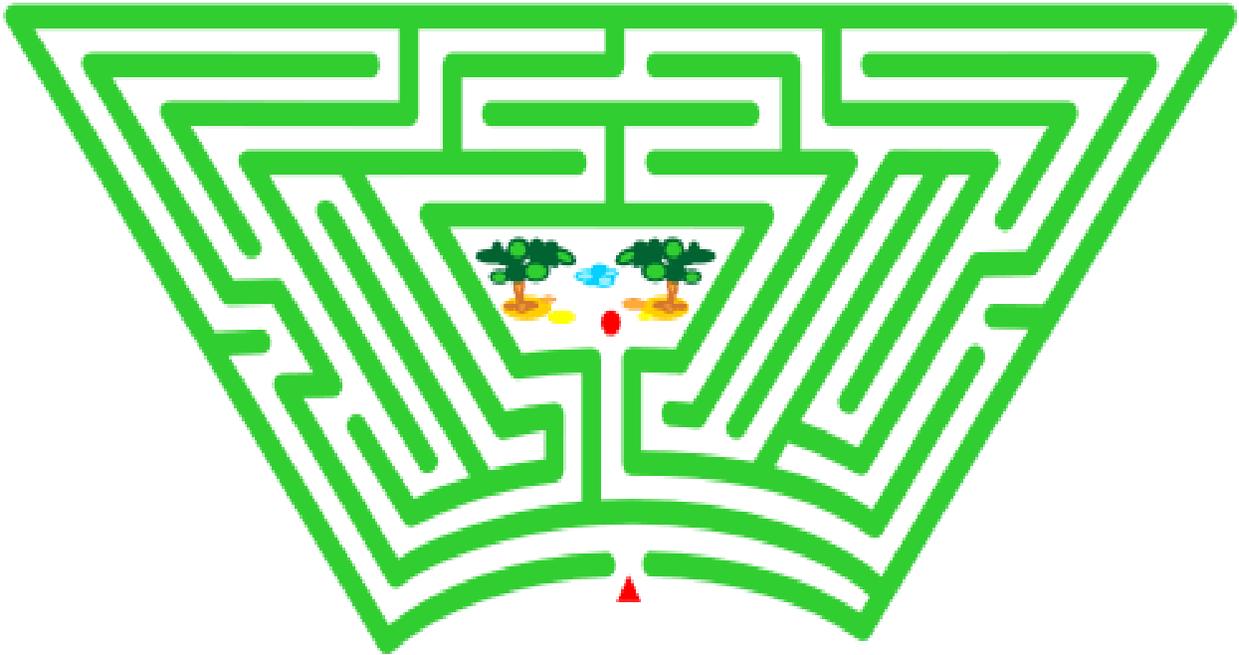
List 3	
<u>Happy Words</u>	<u>Sad Words</u>
Laugh	Loss
Hug	Embarrass
Comfortable	Loneliness
Admire	Suicide
Peaceful	Punish
Merry	Regretful
Loved	Disappointed
Cheer	Alone
Amuse	Sadness

APPENDIX G

Hampton Court Maze

Verbal Instructions:

Please complete the maze on the table in front of you in the quickest time possible. Your time will be recorded. In order to complete the maze task, you have to begin at the red triangle marked on the perimeter of the maze and work your way to the center. As soon as you begin, I will start the stopwatch.



APPENDIX H

Velten Mood Induction Procedure (VMIP) Instructions

General Instructions (each presented for 30 s):

1. Please place the headphone set over your ears, so that you may get used to the feeling. At a certain point, you will hear some music playing. This music will help reduce possible distractions from outside noises so that you may concentrate your full attention on the material you see presented on the screen.
2. A series of slides will now be presented with instructions for this phase of the project. The slides are programmed to change automatically, so please wait for the next slide to appear. Please read each of the slides silently to yourself. In order to minimize distracting movements, please keep your hands in a comfortable, still position, such as in your lap or resting on the chair arms. Please attempt, while viewing the slides, to avoid closing your eyes for an extended period of time.
3. In the first part of this experiment, I will be shown a series of slides with statements typed on them. These statements represent a certain mood. My success will be largely a question of my willingness to be receptive and responsive to the idea in each statement, and to allow each idea to act upon me without interference. These ideas are called suggestions.
4. First, as each statement appears, I will simply read it silently to myself in a manner appropriate to its intended seriousness. Then I'll go over each statement again and again in my head with the determination and willingness to really believe it. I will experience each idea. I will concentrate my full attention on it. And I will exclude other ideas which are unrelated to the mood---such as "I'll see if this will work."
5. I will always attempt to respond to the feeling suggested by each item. I will then try to think of myself with as much clarity and realism as possible as definitely being and moving into that mood state. I am letting myself be receptive to these feelings. Different people move into moods in different ways. Whatever induces the mood in me fastest and most deeply is the best way for me. Some people simply repeat the statements over and over again to themselves with the intention of experiencing them.
6. Some people find it natural and easy for them to visualize a scene in which they had or would have had such a feeling or thought. Or, perhaps some easy combination of repeating the statements and imagining scenes will come to me. Very likely, I will begin to feel the way I do when I'm in that mood. I will continue to concentrate my full consciousness on experiencing and retaining the mood as each suggestion is presented. I will continue to discipline and train myself in inducing a mood in myself by concentrating my full attention on the mood-statements during any time interval.
7. To sum up: The whole purpose of this experiment is to see whether a person can talk him- or herself into a mood. Some of these mood-statements may have no relation to anything I have ever thought, said, or done. Yet, exactly in the manner of hypnosis, I will find it quite easy to accept and feel these emotions. I will be concentrating on doing so, rather than comparing each

single statement to my life experience and then deciding whether it applies to me. I will let and strive to let them apply to me. I can do this.

8. I experience each statement as if it were especially written for me. At first I may feel the impulse to compare a single mood-statement to my life experience, or to resist statements which seem to be or are contradictory to what I feel myself to be. But, most people feel this at first. It will become apparent to me that if I am able to talk myself into a mood, then obviously I know how to talk myself out of one. If I find that I can do these things, then I have learned something valuable about myself: I can learn to control my moods, to an extent.

9. If I feel the urge to laugh, it will probably be because humor is a good way to counteract unwanted feelings — or, it might be that I am surprised that I really am going into the mood. I will try to avoid these reactions, however, by keeping in mind that I have the chance of acquiring extremely useful information about myself and to help myself out of undesirable moods that occur in everyday life. IF FOR ANY REASON I FEEL THAT I CANNOT CONTINUE, I WILL SO INDICATE TO THE EXPERIMENTER.

10. The next slide will begin the series of statements. I will read each silently to myself. Then I will try to experience the mood as well as I can and continue to do so as the slides are presented and I move further into the mood. After the final statement has been presented, there will be some brief questionnaires to complete.

VMIP Statements (each presented for 12 s):

1. Today is neither better nor worse than any other day.
2. However, I feel a little low today.
3. I feel rather sluggish
4. Sometimes I wonder whether school is all that worthwhile.
5. Every now and then I feel so tired and gloomy that I'd rather just sit than do anything.
6. I can remember times when everybody but me seemed full of energy.
7. Too often I have found myself staring listlessly into the distance, my mind a blank, when I definitely should have been studying.
8. It has occurred to me more than once that studying is basically useless, because you forget almost everything you learn away.
9. People annoy me; I wish I could be myself.

10. I've had important decisions to make in the past, and I've sometimes made the wrong ones.
11. I do feel somewhat discouraged and drowsy – maybe I'll need a nap when I get home.
12. Perhaps college takes more time, effort, and money than it's worth.
13. I'm afraid the threat of terrorism may get a lot worse.
14. I just don't seem to be able to get going as fast as I used to.
15. There have been days when I felt weak and confused, and everything went miserably wrong.
16. Just a little bit of effort tires me out.
17. I've had daydreams in which my mistakes kept occurring to me – sometimes I wish I could start over again.
18. I'm ashamed that I've caused my loved ones needless worry.
19. I feel terribly tired and indifferent to things today.
20. Just to stand up would take a big effort.
21. I'm getting tired out; I can feel my body getting exhausted and heavy.
22. I'm beginning to feel sleepy. My thoughts are drifting.
23. At times I've been so tired and discouraged that I went to sleep rather than face important problems.
24. My life is so tiresome – the same old thing day after day depresses me.
25. I couldn't remember things well right now if I had to.
26. I just can't make up my mind; it's so hard to make simple decisions.
27. I want to go to sleep – I feel like just closing my eyes and going to sleep right here.
28. I'm not very alert; I feel listless and vaguely sad.

29. I've doubted that I'm a worthwhile person.
30. I feel worn out. My health may not be as good as it's supposed to be.
31. It often seems that no matter how hard I try, things still go wrong.
32. I've noticed that no one seems to really understand or care when I complain or feel unhappy.
33. I'm uncertain about my future.
34. I'm discouraged and unhappy about myself.
35. I've lain awake at night worrying so long that I hated myself.
36. Things are worse now than when I was younger.
37. The way I feel now, the future looks boring and hopeless.
38. My parents never really tried to understand me.
39. Some very important decisions are almost impossible for me to make.
40. I feel tired and depressed; I don't feel like working on the things I know I must get done.
41. I feel horribly guilty about how I've treated my family sometimes.
42. I have the feeling that I just can't reach people.
43. Things are easier and better for other people than for me. I feel like there's no use in trying again.
44. Often people make me very upset. I don't like to be around them.
45. It takes too much effort to convince people of anything. There's no point in trying.
46. I fail in communicating with people about my problems.
47. It's so discouraging the way people don't really listen to me.
48. I've felt so alone before, that I could have cried.
49. Sometimes I've wished I could die.

50. My thoughts are so slow and downcast I don't want to think or talk.
51. I just don't care about anything. Life just isn't any fun.
52. Life seems too much for me anyhow – my efforts are wasted.
53. I'm so tired.
54. I don't concentrate or move. I just want to forget about everything.
55. I have too many bad things in my life.
56. Everything seems utterly futile and empty.
57. I feel dizzy and faint. I need to put my head down and not move.
58. I don't want to do anything.
59. All of the unhappiness of my past life is taking possession of me.
60. I want to go to sleep and never wake up.

APPENDIX I

Control Condition Instructions

General Instructions

These will be the same as those used in the Velten Mood Induction Procedure

Neutral Statements (each presented for 12 s):

1. Tokyo is the largest city in the world with a population of over 33 million.
2. Japan was elected to the United Nations almost 14 years after Pearl Harbor.
3. At the end appears a section entitled "Bibliography Notes."
4. Gerunds are verbal nouns that represent actions.
5. This book or any part thereof must not be reproduced in any way.
6. Agricultural products comprised seventy per cent of the income.
7. Saturn is sometimes in conjunction, beyond the sun from the earth and is not visible.
8. Some streets were still said to be listed under their old names.
9. The system is supervised by its Board of Regents.
10. There is a large rose-growing center near Tyler, Texas.
11. A national program provides free lunches to school children.
12. Some believe that it's God's will that the fittest survive.
13. The typography, paper, and bind were of the highest quality.
14. The political party dominated county elections for as long as anyone could remember.
15. The desk was old, and scratched into its surface was a profusion of dates, initials, and pleading messages.
16. The Orient Express traveled between Paris and Istanbul.
17. When the banyan tree bent down under its own weight, its branches began to take foot.

18. There isn't a scientific explanation for every U.F.O. sighting.
19. The diamond was shipped from South Africa to London through a special courier.
20. The review is concerned with the first three volumes.
21. The ship was ancient, and would soon be retired from the fleet.
22. Slang is a constantly changing part of the language.
23. There is a small article in the local newspaper which indicates acceptance of the kidnappers' terms.
24. There are some forms in which no oath is required.
25. Dating services find mates for the lonely.
26. Almost two-thirds of Alaska is owned by the federal government.
27. Two men dressed as repairmen will appear shortly after the van pulls up.
28. The wood was discolored as if it has been held in a fire.
29. A light was noticed in the dark outside, and it moved eerily towards the house.
30. Painting in a few other non-European countries is treated in a separate volume.
31. Recent study revealed that one half of all college students were unable to find summer jobs.
32. Provoked arousal and orientation are accompanied by steeper negative shifts.
33. The names on the Christmas mailing list are alphabetically ordered.
34. Significantly, these changes occur during the full moon.
35. West Samoa gained its independence in 1965.
36. The magazine's report was slanted, as usual.
37. The map would prove useless as a beginning guide.
38. The speaker outlined a plan whereby the current deficits could be eliminated.

39. Black and white pictures are arranged in ten sections.
40. The voices come only at night, and whisper words, terrible words.
41. The incident was a front page story for several days.
42. The notice made it clear that coffee breaks were being limited.
43. No man worked harder than he did.
44. Potter wrote numerous satires on social cynicism.
45. Boeing's main plant in Seattle employs over 30,000 people.
46. The doorkeeper was dressed in red.
47. During the next ten years, the group participated in politics.
48. The organization depended on the people for support.
49. In 1965, Queen Elizabeth made the first state visit by a British monarch to Germany in 56 years.
50. It was their sixth consecutive best seller.
51. It all fitted in with the officer's story.
52. The merger did not change the company's policy.
53. The mansion was rented by the delegation.
54. Ninety occupations were listed as eligible for the grads in business.
55. Utah is the Beehive state.
56. Changes were made in transport of lumber after the border incident.
57. The Chinese language has many dialects, including Cantonese, Mandarin, and Wu.
58. Things were booming once again in the little gold rush town of Angel.
59. At low tide the hulk of the old ship could be seen.
60. A free sample will be given to each person who enters the store.

APPENDIX J
CONSENT FORM

A Comparison of Mood Induction Procedures

Purpose: You are invited to participate in a study that will compare four different procedures to induce dysphoric mood and determine which one produces the greatest amount of dysphoric mood in participants. Dysphoric mood is defined as a temporary elevation of a sad or depressed mood. By studying dysphoric mood in the laboratory we hope to better understand depression and to ultimately assist those who struggle with it and other forms of emotional distress. We also hope to investigate how demographic variables, such as age and gender, as well as psychological factors influence an individual's respond to mood induction procedures.

Participant Selection: We hope to have up to 130 student volunteers who are at least 18 years of age as participants. If you are not at least 18 we will be unable to have you participate in the study. To participate in the study, you must also have normal or corrected-to-normal vision in order to read material presented on both a computer screen and in hard copy. Participants who are currently undergoing psychotherapy, are taking prescribed antidepressant medication, or report elevated levels of depression on a measure of depression will be unable to participate in the study. You will also be excluded if you have experienced a head injury that resulted in a loss of consciousness for 30 minutes or longer.

Explanation of Procedures:

- If you decide to participate, you will first be briefly interviewed to obtain some background information and to further verify that there is no reason because of your age or health status to preclude your participation. (5 minutes)
- Next, you will be asked to complete a short series of questionnaires that will be presented as part of an electronic survey. These questionnaires are designed to assess some additional background and psychological information that we believe may help us better understand your response to the procedure in which you will be asked to participate. (15 minutes)
- Following the completion of the online survey, you will be randomly assigned to participate in one of four mood induction procedures. You will only complete one of the four induction tasks.
- All four procedures and their instructions will be presented via a computer and last about 15 minutes. During the procedure, you will be asked to wear headphones through which either background music or “white noise” that masks any outside distracting sounds will be played. (15 minutes)
- Following your participation in the induction procedure, you will be asked to complete a few additional brief questionnaires about your experience with it. (5 minutes)
- You will next be asked to participate in a brief computerized task assessing sustained attention. (5 minutes)
- After this task you will be asked to solve a short paper-and-pencil puzzle. (2 minutes)

- After the completion of these tasks, you will be asked to participate in a final brief computerized presentation which is designed to dissipate any remaining dysphoric or sad feelings you might still be experiencing at this point. (5 minutes)

Discomfort Risk: Because you will not be allowed to participate in this study if you exhibit an elevated level of depression, or if you are currently receiving treatment for clinical depression, there is no foreseeable risk that you will experience any lingering adverse emotional effects as a result of participating in this project. Because some of the items within the online questionnaires ask you to reflect on what you typically do or think about when you are feeling depressed, it is possible that you may momentarily encounter some mild distress in responding to them. Because all of the procedures are likely to affect your mood, it is reasonable to expect that you may feel some sad and dysphoric feelings during and perhaps shortly following the procedure. However, based upon previous research on mood induction procedures, it our expectation that any increase in dysphoric mood is likely to be temporary and dissipate fairly quickly afterwards. During the study you are free to skip questions if you feel uncomfortable answering.

Compensation or Treatment: Wichita State University does not provide medical treatment or other forms of reimbursement to persons injured as a result of or in connection with participation in research activities conducted by Wichita State University or its faculty, staff, or students. If you believe that you have been injured as a result of participating in the research covered by this consent form, you can contact the Office of Research and Technology Transfer, Wichita State University, Wichita, KS 67260-0007, telephone (316) 978-3285.

Benefits: Your participation in this project is one of several opportunities available to you through which you may earn extra credit or research participation points within a psychology course you may be taking. Apart from this, there are no clear personal benefits that you can reasonably expect to receive through your participation in this research project. However, it is our hope that research findings from this project can be used in ways that will ultimately contribute to an improved quality of life for individuals experiencing dysphoric moods, thoughts, and feelings.

Confidentiality: You will not be asked to provide any personally identifying information and any and all information you provide in your responses to any questionnaires or during the interview and other facets of this project will remain confidential. Research records will be maintained a minimum of three years after the research is completed and the study has been closed. Any information obtained in this study in which you can be identified will remain confidential and will be disclosed only with your permission. The amount of credits you earn through your participation can be determined by your instructor through the SONA system which also keeps your information confidential.

Refusal/Withdrawal: Participation in this study is entirely voluntary. Your decision whether or not to participate will not affect your future relations with Wichita State University and/or the Department of Psychology. If you agree to participate in this study, you are free to withdraw from the study at any time without penalty.

Contact: If you have any questions about this research, please ask the experimenter. If you have additional questions throughout the course of this project, we will be glad to answer them. Also, any questions can be directed to: Dr. Robert D. Zettle, Professor, Department of Psychology, Office: 411 JB, Phone: (316) 978-3081, email: robert.zettle@wichita.edu; or Nakisha Carrasquillo, Phone: (316) 618-5603, email: nmcarrasquillo@wichita.edu. If you have questions pertaining to your rights as a research subject, or about research-related injury, you can contact the Office of Research and Technology Transfer at Wichita State University, Wichita,

KS 67260-0007, (316) 978-7064.

You are under no obligation to participate in this study. Your signature indicates that you have read the information provided above and have voluntarily decided to participate.

You will be given a copy of this consent form to keep.

Signature of Participant

Date

Witness Signature

Date

APPENDIX K

Background Questionnaire

Please record participant responses:

1. What is your gender?

- Male
- Female

2. What is your age? _____.

3. What is your current year in college?

- High school student
- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student

4. What is your major? _____.

5. Do you identify yourself as Hispanic or Latino/Latina?

- Yes
- No

6. Please indicate with which one or more of the following racial groups you identify

- American Indian or Alaskan Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White

7. Is your primary language English?

- Yes
- No

8. Have you ever suffered a blow or injury to your head that resulted in a loss of consciousness for 30 minutes or longer?

_____ Yes

_____ No

9. Have you ever gone to a counselor or therapist for treatment for depression?

_____ Yes

_____ No

10. If “yes,” are you currently receiving treatment from a counselor or therapist for depression?

_____ Yes

_____ No

11. Are you currently taking medication for treatment of depression?

_____ Yes

_____ No

APPENDIX L

Debriefing Statement

Thank you for participating in this research project. It is our hope that your participation will help us better understand how to best induce dysphoric mood in the laboratory and how that process may also be influenced by various demographic and psychological variables. We're especially hopeful that a better understanding of how individuals such as yourself respond to the induction procedures examined in this study may provide valuable insights which may aid in the development of methods to assist those who experience sometimes debilitating depressive mood states.

It is our intent to have a number of additional students participate in this project before it is completed. For this reason, we ask that you not discuss nor disclose certain details about your participation in this project with your classmates and other students who may be future participants in this study. Your cooperation in this matter is much appreciated and will ensure that your participation as well as that of your classmates in this project may help advance our scientific understanding and treatment of emotional suffering.

Due to the ongoing nature of the project, we are unfortunately unable to provide you with any individual results at the moment, and we are likewise unable to summarize at this point in time what the ultimate findings of this project are or will be. However, once the results of this study are finalized, we would be happy to share them with you. If interested, please provide us with a way of contacting you and we will do so once this project has been completed and its findings analyzed. In the interim, any questions or comments you might have about this project may be directed to its principal investigator or co-investigator listed below.

Principal Investigator:

Dr. Robert D. Zettle, Professor
Department of Psychology
Office: 411 Jabara Hall
Phone: (316) 978-3081
Email: robert.zettle@wichita.edu
Fax: (316) 978-3086

Co-Investigator:

Nakisha Carrasquillo
Phone: (316) 618-7064
Email: nmcarrasquillo@wichita.edu

Your participation will be verified to the Sona Systems administrator. Thank you again for your valuable participation. You are welcome to keep this statement.

APPENDIX M

Postinduction Questionnaire

Presented in an interview format:

1. Based on the instructions you received, what is your understanding as to what you were asked to do during the mood induction procedure in which you participated?
2. On a scale of 1-10, to what extent did you follow the instructions? (1 = not at all, 10 = completely)?
3. Did you do anything else during the mood induction procedure? If so what else did you do? What effect, if any, did these other activities have on your mood during the procedure?

Table 1

Demographic and Preinduction Variables

	VMIP	MMIP	Combined Procedure	Control Condition	Total Sample
	<i>n</i> = 34	<i>n</i> = 34	<i>n</i> = 34	<i>n</i> = 34	<i>N</i> = 136
Variable	<i>n</i> (%)				
Ethnicity					
White	24 (71)	26 (76)	25 (74)	22 (65)	97 (71)
Black	5 (15)	2 (6)	3 (9)	3 (9)	13 (10)
Asian	2 (6)	3 (9)	3 (9)	6 (18)	14 (10)
Hispanic	3 (9)	3 (9)	2 (6)	2 (6)	10 (7)
Other	0 (0)	0 (0)	1 (3)	1 (3)	2 (2)
Gender					
Male	10 (29)	12 (35)	15 (44)	12 (35)	49 (36)
Female	24 (71)	22 (65)	19 (56)	22 (65)	87 (64)
Class					
Freshman	15 (44)	9 (26)	15 (44)	9 (26)	48 (35)
Sophomore	4 (12)	10 (29)	6 (18)	6 (18)	26 (19)
Junior	6 (18)	12 (35)	4 (12)	10 (29)	32 (24)
Senior	9 (26)	3 (9)	9 (26)	9 (26)	30 (22)
	<i>M</i> (<i>SD</i>)				
Age	23.76 (7.79)	22.59 (5.75)	21.76 (5.35)	21.79 (3.77)	22.48 (5.84)
BDI -II	5.91 (4.47)	6.06 (4.40)	6.76 (3.47)	6.03 (4.91)	6.19 (4.31)
SCS Total	3.40 (0.52)	3.32 (0.57)	3.30 (0.63)	3.23 (0.69)	3.31 (0.60)
Self-kind.	3.27 (0.70)	3.09 (0.91)	3.18 (0.77)	3.11 (0.91)	3.16 (0.82)
Self-judg.	2.62 (0.81)	2.91 (0.72)	2.84 (0.80)	2.89 (0.89)	2.81 (0.81)
Mindfulness	3.73 (0.60)	3.57 (0.69)	3.54 (0.83)	3.65 (0.77)	3.62 (0.72)
Overident.	2.75 (0.99)	2.65 (0.81)	2.74 (0.85)	2.87 (1.04)	2.75 (0.92)
Common H.	3.35 (0.82)	3.39 (0.89)	3.28 (1.13)	3.10 (0.97)	3.28 (0.96)
Isolation	2.53 (0.90)	2.46 (0.79)	2.53 (0.90)	2.67 (0.93)	2.55 (0.88)

Table 1 (Continued)

	VMIP	MMIP	Combined Procedure	Control Condition	Total Sample
	<i>n</i> = 34	<i>n</i> = 34	<i>n</i> = 34	<i>n</i> = 34	<i>N</i> = 136
Variable	<i>M</i> (<i>SD</i>)				
RRS Total	40.53 (10.58)	39.12 (8.96)	38.47 (7.46)	43.71 (12.36)	40.46 (10.10)
Brooding	9.12 (2.68)	8.82 (2.41)	9.21 (2.48)	11.03 (3.65)	9.54 (2.95)
Reflection	10.76 (3.64)	39.12 (8.96)	9.26 (2.68)	10.41 (3.92)	10.07 (3.45)
Pre DACL	7.82 (3.65)	7.24 (3.15)	7.56 (2.61)	8.32 (4.60)	7.74 (3.56)
Pre SUDS	16.15 (13.86)	21.35 (18.89)	19.44 (14.97)	25.41 (21.15)	20.59 (17.60)

Note. For the SCS scales, Self-kind = Self-kindness. Self-judg. = Self-judgment, Overident. = Overidentification, Common H. = Common Humanity.

Table 2

Steps of the Procedure

-
1. Administration of preinduction measures (BDI-II, SCS, and RRS)
 2. Administration of preinduction DACL and SUDS
 3. Presentation of mood induction procedure (VMIP , MMIP , Combined, or Control Condition)
 4. Administration of postinduction DACL and SUDS
 5. AGNG task completion
 6. Hampton Court maze completion
 7. Administration of posttask DACL and SUDS
 8. Administration of manipulation and treatment integrity checks
 9. Presentation of distraction task
 10. Administration of postdistraction DACL and SUDS
 11. Debriefing
-

Table 3

Mood-Related, Self-Report Variables

	VMIP	MMIP	Combined Procedure	Control Condition	Total Sample
Measurement	<i>n</i> = 34	<i>n</i> = 34	<i>n</i> = 34	<i>n</i> = 34	<i>N</i> = 136
Occasion	<i>M</i> (<i>SD</i>)				
1. Preinduction					
DACL	7.82 (3.65)	7.24 (3.15)	7.56 (2.61)	8.32 (4.60)	7.74 (3.56)
SUDS	16.15 (13.86)	21.35 (18.89)	19.44 (14.97)	25.41 (21.15)	20.59 (17.60)
2. Postinduction					
DACL	13.71 (4.45)	11.85 (3.46)	12.32 (3.58)	11.15 (2.71)	12.26 (3.70)
SUDS	28.03 (21.29)	24.56 (20.42)	28.26 (21.70)	22.76 (22.72)	25.90 (21.44)
3. Posttask					
DACL	10.47 (3.64)	9.26 (3.46)	9.15 (2.77)	8.62 (3.61)	9.38 (3.42)
SUDS	22.68 (19.22)	22.62 (20.08)	20.41 (16.35)	19.62 (21.89)	21.33 (19.32)
4. Postdistraction					
DACL	7.97 (2.97)	7.91 (3.46)	7.47 (2.39)	7.56 (3.61)	7.73 (3.12)
SUDS	15.09 (16.01)	18.50 (18.66)	15.06 (12.99)	14.21 (14.96)	15.71 (15.70)

Table 4

Bivariate Correlations Among Predictor Variables

Variables	1	2	3	4
1. SCS total	--			
2. RRS total	-.47*	--		
3. SCS X RRS	.10	-.10	--	
4. BDI-II	-.45*	.48*	-.08	--

Note. ** Coefficient is significant at the 0.01 level (2-tailed).

Table 5

Regression Analyses Predicting Postinduction DACL Scores for Aggregate Experimental and Control Conditions

Predictor	Aggregate Experimental Conditions					Control Condition				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
Pre DACL	0.22	0.13	.18	1.67	.10	0.08	0.14	.13	0.54	.59
SCS total	0.29	0.13	.18	0.34	.73	-0.60	0.91	-.15	-0.66	.52
RRS total	-0.01	0.05	-.02	-0.17	.86	0.01	0.05	.06	0.27	.79
SCS X RRS	-0.07	0.51	-.01	-0.13	.90	0.31	0.34	.20	0.91	.37
BDI-II	-0.05	0.12	-.05	-0.42	.68	-0.08	0.13	-.14	-0.57	.58
<i>R</i> ²										
	.03					.05				
<i>p</i>	.71					.93				

Table 6

Regression Analyses Predicting Posttask DACL Scores for Aggregate, VMIP, MMIP, and Combined Conditions

	Aggregate Experimental Conditions					VMIP				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
Postin DACL	0.47	0.07	.55	6.45	< .01	0.44	0.13	.55	3.54	< .01
SCS total	0.12	0.61	.02	0.20	.84	1.72	1.57	.25	1.09	.28
RRS total	0.03	0.04	.09	0.83	.41	0.10	0.08	.28	1.20	.24
SCS X RRS	-0.11	0.37	-.03	-0.30	.76	0.69	0.84	.14	0.82	.42
BDI-II	0.01	0.08	.01	0.11	.92	-0.05	0.17	-.07	-0.32	.75
R^2						.37				
<i>p</i>						.02				

Table 6 (Continued)

	MMIP					Combined Condition				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
Postin DACL	0.55	0.16	.55	3.41	< .01	0.37	0.13	.47	2.74	.01
SCS total	-0.19	1.15	-.03	-0.17	.87	-0.34	0.80	-.08	-0.42	.68
RRS total	-0.07	0.08	-.17	-0.83	.42	0.09	0.70	.34	1.30	.20
SCS X RRS	-0.56	0.64	-.14	-0.88	.39	-0.52	0.70	-.14	-0.75	.46
BDI-II	0.23	0.15	.29	1.55	.13	-0.09	0.14	-.11	-0.59	.56
<i>R</i> ²						.42				
<i>p</i>						< .01				
						.24				
						.16				

Table 7

Regression Analyses Predicting Posttask DACL Scores for Control Condition

	Initial Analysis				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
PostIn. DACL	0.34	0.21	.25	1.64	.11
SCS total	-0.61	0.99	-.12	-0.61	.55
RRS total	0.12	0.05	.42	2.30	.03
SCS X RRS	0.22	0.36	.11	0.61	.55
BDI-II	0.07	0.14	.10	0.53	.60
<hr/>					
R^2		.35			
<i>p</i>		.03			
<hr/>					
	Secondary Analysis				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
RRS brooding	0.18	0.21	.19	0.88	.38
RRS reflection	-0.08	0.18	-.08	-0.42	.68
RRS depression	0.24	0.13	.45	1.93	.06
<hr/>					
R^2		.30			
<i>p</i>		.01			

Table 8

Regression Analysis Predicting Postdistraction DACL Scores for Aggregate Experimental Conditions

	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
Posttask DACL	0.23	0.09	.26	2.63	.01
SCS total	0.11	0.62	.02	0.18	.86
RRS total	0.00	0.04	.01	0.08	.94
SCS X RRS	-0.51	0.38	-.13	-1.35	.18
BDI-II	0.05	0.08	.07	0.62	.54
<i>R</i> ²		.09			
<i>p</i>		.09			

Table 9

Regression Analyses Predicting Postdistraction DACL Scores for Control Condition

	Initial Analysis				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
Posttask DACL	0.08	0.17	.08	0.46	.65
SCS total	-3.12	0.92	-.60	-3.39	<.01
RRS total	-0.03	0.05	-.10	-0.55	.59
SCS X RRS	-0.12	0.34	-.06	-0.34	.73
BDI-II	0.09	0.13	.12	0.69	.49
<hr/>					
<i>R</i> ²	.45				
<i>p</i>	< .01				
<hr/>					
	Secondary Analysis				
	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>	<i>p</i>
SCS self-kindness	-2.39	0.94	-.60	-2.55	.02
SCS self-judgment	1.52	1.05	.37	1.45	.16
SCS common humanity	-0.48	0.70	-.13	-0.68	.50
SCS isolation	1.45	0.67	.37	2.17	.04
SCS mindfulness	1.02	1.18	.22	0.86	.40
SCS overidentification	-1.18	0.95	-.34	-1.25	.22
<hr/>					
<i>R</i> ²	.55				
<i>p</i>	< .01				

Table 10

Mood-Related, Performance-Based Variables

	VMIP <i>n</i> = 34	MMIP <i>n</i> = 34	Combined Condition <i>n</i> = 34	Control Condition <i>n</i> = 34	Total Sample <i>N</i> = 136
Variable	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
General Ability					
RT	504.4 (40.6)	493.2 (41.8)	494.2 (45.5)	500.8 (45.3)	498.1 (43.1)
Accuracy	87.3 (7.0)	85.4 (8.7)	84.9 (9.7)	86.5 (5.7)	86.0 (7.9)
Mood Bias					
H RT ^a	498.3 (42.3)	490.8 (45.5)	486.4 (62.9)	495.6 (50.6)	492.8 (50.6)
Sad RT ^b	509.5 (44.5)	496.0 (43.3)	501.4 (42.9)	505.3 (44.7)	503.1 (43.7)
H. Acc. ^a	84.6 (9.7)	84.7 (9.2)	83.7 (10.6)	84.8 (6.9)	84.5 (9.1)
Sad Acc. ^b	90.0 (5.8)	86.0 (10.0)	86.0 (10.6)	88.2 (6.1)	87.6 (8.5)
Shift Ability					
S. RT ^c	500.5 (46.0)	490.8 (44.4)	495.0 (45.9)	501.1 (45.2)	496.9 (45.1)
NS. RT ^d	507.2 (41.3)	495.9 (44.4)	492.7 (61.7)	499.9 (50.6)	498.9 (49.8)
S Acc. ^c	87.7 (8.2)	86.8 (9.0)	87.4 (9.3)	87.0 (6.9)	87.2 (8.3)
NS. Acc. ^d	87.0 (8.6)	83.9 (10.1)	82.4 (11.3)	86.0 (6.5)	84.8 (9.4)
Hampton Court Maze					
Time ^e	51.6 (36.2)	43.9 (16.9)	41.8 (11.7)	46.7 (24.4)	46.0 (24.1)
Error	2.6 (3.3)	1.9 (1.6)	1.5 (1.2)	2.1 (1.7)	2.0 (2.1)

Note. RT = reaction time in milliseconds; Acc. = accuracy or percentage of correct responses. ^a Performance measures for happy blocks, ^b Performance measures for sad blocks, ^c Performance measures for shift blocks, ^d Performance measures for nonshift blocks, ^e Completion time in seconds.

Table 11

Summary of Key Findings

Class of Dependent Variables	Key Findings
Self-Report Variables	
Dysphoric Mood (DACL)	<p>Equivalent quadratic trend for changes in dysphoric mood for all four induction conditions.</p> <p>Posttask: Postinduction DACL scores predictive for MMIP and VMIP. Preinduction rumination predictive for control condition.</p> <p>Postdistraction: Self-kindness (inversely) and isolation subscales of SCS predictive for control condition.</p>
Subjective Distress (SUDS)	<p>Quadratic trend for changes in SUDS for VMIP and combined procedure.</p> <p>Decreasing linear trend for control condition.</p> <p>No trend for MMIP.</p> <p>Postinduction: Postinduction DACL scores predictive for VMIP and combined procedure.</p> <p>Posttask: Posttask DACL score predictive for VMIP and combined procedure.</p> <p>Postdistraction: Postdistraction DACL scores predictive for VMIP.</p>
Performance-Based Variables	
AGNG	<p>General ability: Equivalence among the four induction conditions in overall response time and accuracy.</p> <p>Mood bias: Faster reaction times to blocks of happy words. Greater accuracy for blocks of sad words.</p> <p>Shift ability: Greater accuracy for shift blocks of words.</p>
Hampton Court Maze	<p>Equivalence among the four induction conditions in completion time and in number of errors.</p> <p>Predinduction rumination predictive of completion time for control condition.</p>

Figure 1. Mean DACL scores across measurement occasions.

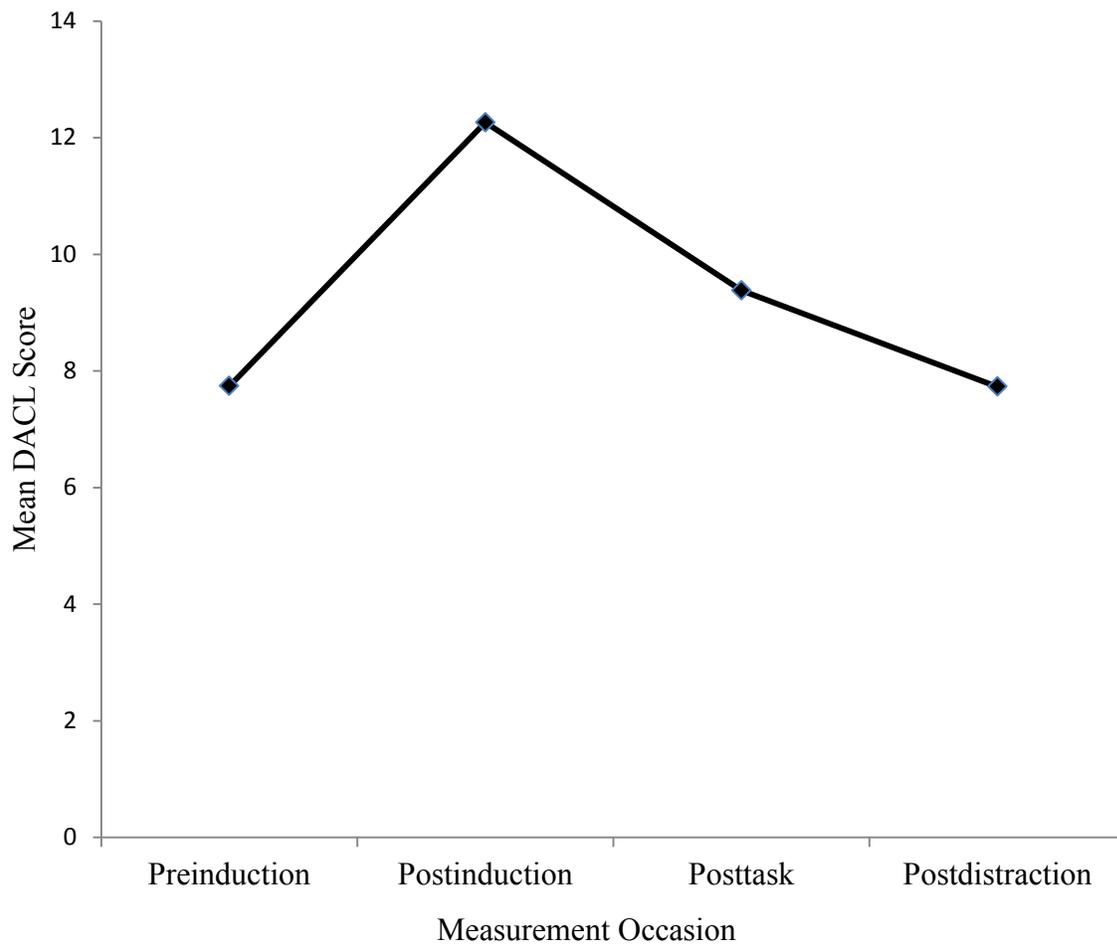


Figure 2. Mean SUDS scores across measurement occasions.

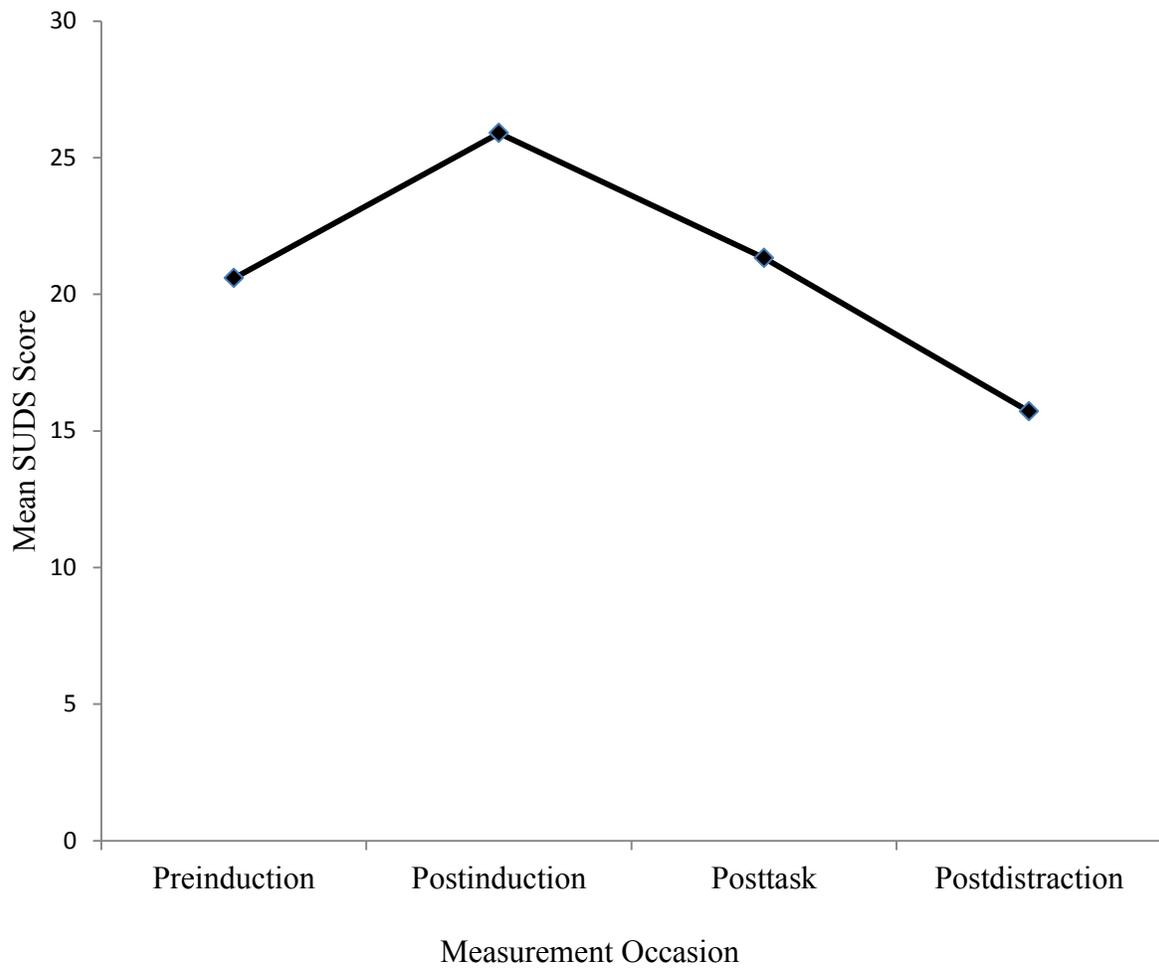


Figure 3. Mean SUDS scores across measurement occasions for each of the four conditions.

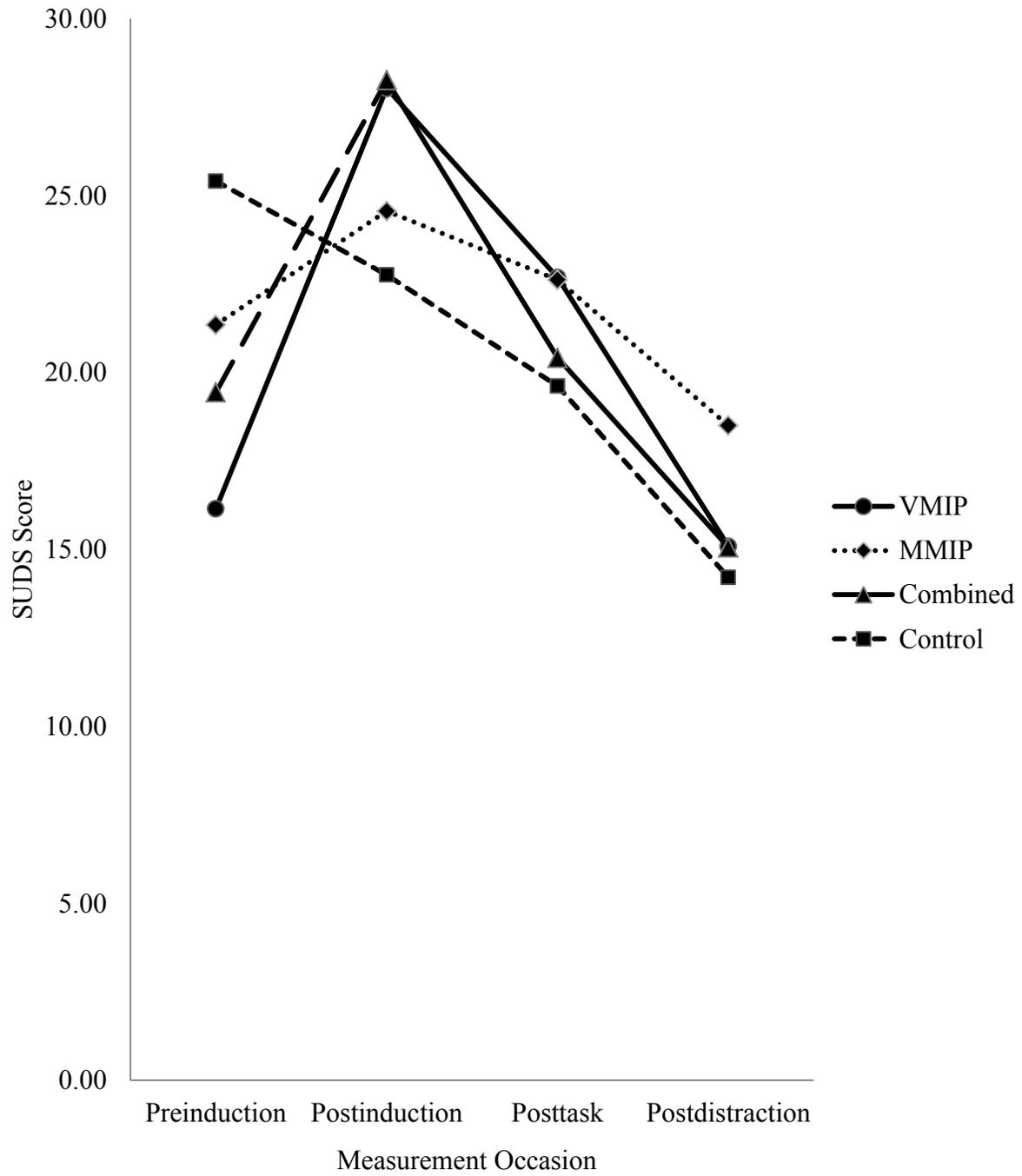


Figure 4. A framework for mood induction research.

		Type of Induction Procedure	
		Suggestive	Nonsuggestive
Method for Studying Moderating Variables	Correlational	A	B
	Experimental	C	D