An exploration of the Velten Mood Induction Procedure on psychological symptomology

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AN EXPLORATION OF THE VELTEN MOOD INDUCTION PROCEDURE ON
PSYCHOLOGICAL SYMPTOMOLOGY

by

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Bachelor of Arts
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1993

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2001

A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Philosophy Degree in Psychology
Department of Psychology
College of Liberal Arts

Graduate College
University of Nevada, Las Vegas
May 2007
Dissertation Approval
The Graduate College
University of Nevada, Las Vegas

April 11, 2007

The Dissertation prepared by

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Entitled

An Exploration of the Velten Mood Induction Procedure on

Psychological Symptomology

is approved in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Psychology

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ABSTRACT

An Exploration of the Velten Mood Induction Procedure on Psychological Symptomology

by

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The purpose of this study was to examine the effects of the Velten (1968) Mood Induction Procedure (VMIP) on psychological symptomology. Velten created a series of 60 statements designed to produce a particular mood: elated, depressed, or neutral. The VMIP came out of the cognitive movement, has undergone permutations over time, and other MIPs have been developed. Criticisms of the MIPs are discussed. The VMIP is feasible as a therapeutic tool due to flexibility and ease of use.

In this study, the VMIP was utilized to induce an elated, depressed, or neutral mood. Hypotheses included: for elated condition (EC), report of symptoms would decrease; for depressed condition (DC), report of symptoms would increase; for the neutral condition (NC), there would be no change, and the DC would show a greater change than the EC, and both would show greater change than the NC. A total of 314 participants were given three measures in a pretest/posttest design: the Multiple Affect Adjective Checklist-Revised (MAACL-R), the Symptom Checklist-90-Revised (SCL-90-
R), and 10 frequency questions (FQs). The VMIP was administered as the independent variable.

The FQs were included to detect participant bias. Differences were found using ANOVA. The MAACL-R was used as a manipulation check for the VMIP. For the EC, mood changed in the expected direction, significantly for anxiety, depression, and positive affect. For the DC, mood changed significantly in the expected direction for all subscales. For the NC, mood changed significantly in a mixed way. The SCL-90-R was used to test for differences in the report of psychological symptomology. The EC changed significantly in the expected direction for all scales. The DC changed significantly in the expected direction for some subscales. The NC changed significantly in the same direction as the EC for all scales. A visual examination of the means showed that the DC created a greater mood change than the EC or NC. The EC created a greater mood change in the area of positive affect than the NC. The utility of using the VMIP as a therapeutic tool is discussed.
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ACKNOWLEDGMENTS

This journey has not been an easy one and not one that I could have accomplished alone. There are many who deserve my gratitude. Dr. Ferraro, you have stood by me, quietly encouraging me and offering support, always believing in me. Dr. Kern, Dr. Donohue, and Dr. Markos, thank you for your assistance through the dissertation process. Dr. Freese, Dr. Squitieri, and Dr. Stiles, thank you for helping me to become a better clinician. Maggie, thank you for helping me to find the final motivation to move forward. To my parents, thank you for your patience, assistance, and backing through the many years of this process. To my husband, thank you for being my rock and sleeping in the lounger behind my chair as I toiled through the night. Although this stage of the journey is now complete, through all of your love and support, you have helped to prepare me for the rest of life's journey. Thank you.
INTRODUCTION

The 1950s and 1960s were a time of great change for psychology. A new idea was beginning to take shape and influence many aspects of the field. The driving force in experimental psychology up to that time had been a long history of behaviorism, but this was an incomplete formulation of man for many psychologists of the day. Instead psychologists increasingly thought it important to recognize that organisms had thoughts and feelings. Due largely to the work of George Miller (Miller, 1962) and Jerome Bruner (Bruner, 1964) in bringing discussions of the "mind" to the forefront a "cognitive revolution" in psychology was engendered (Hunt, 1994).

This cognitive revolution was not just occurring with the scientist psychologists. The application of psychology as a therapeutic tool was also being overhauled. The two primary forms of therapy in the 1950s consisted of behaviorism, a sometimes mechanical but testable approach, and psychoanalysis, at times a vague, slow moving approach that was difficult to test. In rebellion to the psychoanalysis he practiced, Albert Ellis (Ellis, 1996) developed and began using rational-emotive therapy in the mid 1950s. Ellis' goal was to find a briefer form of therapy that worked and was testable. Aaron Beck (Beck, 1993) arrived at his cognitive approach when he tried and failed to find empirical support for the psychoanalysis he was practicing around the same time.
It was in this time of empirical and therapeutic revolution that Emmett Velten completed his studies as a graduate of the University of Southern California in 1967. In his 1968 paper, Velten attempted to pull together the strings of the scientist and the practitioner in support of a cognitive approach to therapy. To this end, he created a cognitively based brief mood induction procedure that was testable in a laboratory setting with the explicit purpose of ultimately developing a therapeutic tool.

Velten (1968) created a series of statements that were designed to be read, slowly and with focus. He instructed the reader not just to be open to the mood of the statements, but also to concentrate on building the mood presented. His original design included three groups of 60 statements meant to induce an elated mood, a depressed mood, or a neutral mood. This system has since become known as the Velten Mood Induction Procedure.

Over the past 40 years, there have been many variations of Velten’s original design as is explicated fully in the subsequent literature review (cf. Chapter Two). The initial statements used by Velten have been divided into two groups, self-devaluative and somatic statements (Riskind & Rholes, 1983). The number of Velten statements has been increased and decreased (Finegan & Seligman, 1995; Inness, Desmarais, & Day, 2004; Rexford & Wierzbicki, 1989; Schare & Lisman, 1984). The list of additional moods induced beyond those intended by Velten is now quite lengthy and includes everything from anxiety to disgust to cold (Albersnagel, 1988; Blanchette & Richards, 2003; Slyker & McNally, 1991; Stephens, Hokanson, & Welker, 1987). Finally, the Velten procedure has been modified by adding an incubation period at the end of the presentation of the
mood-inducing statements to help build the desired mood (Sinclair, Mark, Enzle, Borkovec, & Cumbleton, 1994).

In addition to variations of the same Velten theme, other mood induction procedures have been developed over time. These include the use of music, film, story, feedback, social interaction, gift, and facial expression to induce various moods in the participant (Gerrards-Hesse, Spies, & Hesse, 1994). Even odor has been used to influence mood (Ehrlichman & Halpern, 1988). More recently, using a combination of two different mood induction procedures has become fairly common (Westermann, Spies, Stahl, & Hesse 1996).

Mood induction procedures have been used extensively in the laboratory. For example, mood induction procedures have been experimentally validated as being effective in changing mood (Clark, 1983). Additionally, mood induction procedures have been used to explore empirically the relationship between mood and cognitive processes, especially memory (Ellis & Ashbrook, 1989). The effects of mood induction on behavior and personality have also been examined empirically (Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996).

Mood induction has not been without its critics, however. For example, difficulties have been found with demand characteristics of the mood induction procedure (Ingram, 1989). The efficacy of the induced mood in altering subsequent processes has also been questioned because of the short duration of the induced mood (Frost & Green, 1982). Finally, the overall effectiveness of mood induction procedures in producing mood changes at all has been questioned (Clark, 1983).
As will become evident in the review of the literature that follows, over the past four decades there have been extensive procedural modifications to the original Velten Mood Induction Procedure, and mood induction procedures have been used frequently to investigate the effects of induced mood changes on fundamental behavioral, cognitive and affective processes. Nevertheless, Velten’s original notion that his mood induction procedure might be helpful in therapy has interestingly never been empirically explored.

The failure in the literature to pursue the potential therapeutic effects of the Velten Mood induction procedure is, in fact, quite surprising to this investigator inasmuch as there are several aspects of this procedure that make it a potentially useful therapeutic tool. Foremost among these is that the Velten Mood Induction Procedure has, in fact, been shown to be reliable in changing moods. Moreover, the procedure seems appropriate to therapeutic settings inasmuch as it is extremely flexible to person, problem, mood, and treatment method. It is also an easy procedure for the therapist to use and does not place extraordinary time or effort demands on the client. Even the potential experimental shortcomings of mood induction procedures might be employed to therapeutic advantage. For example, potential demand characteristics of the procedures might be used to potentiate mood changes and, in the course of a treatment regime, the potential short duration of an induced mood might be extended by repeated application of the mood induction procedure, for instance as a homework exercise for the client (Velten, 1968).

The primary purpose of this research is to begin the empirical exploration of the utility of the Velten Mood Induction procedure as a therapeutic tool. It is suggested that for mood induction procedures to have therapeutic efficacy, it will first necessary to
demonstrate empirically whether a mood induction manipulation is an effective independent variable manipulation in changing clinically relevant psychological symptoms. The research that follows was designed specifically to investigate in an experimentally controlled context whether inducing an elated or depressed mood is effective in respectively either reducing or increasing reports of psychological symptoms. The overall framework guiding this research is that if a statistically meaningful influence of induced mood change on psychological symptoms can be established then a new tool might be added to current evidence based cognitively based therapeutic approaches.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Influential Theorists

When Velten (1968) published his article introducing a mood induction task, his purpose was to investigate semantic therapy, specifically, to examine the idea “that the constructions or interpretations people place upon events determine their affective responses” (p. 473). In other words, what people think influences how people feel. Velten (1968) named some examples of effective approaches, specifically those of Albert Ellis (Rational Emotive Behavior Therapy), E. Lakin Phillips (brief therapy), and Joseph Wolpe (behavioral approaches including systematic desensitization) (Velten, 1968). The three therapies mentioned by Velten will be reviewed briefly with the addition to Aaron Beck’s cognitive retraining. Although Velten did not specifically mention Beck, Beck’s work has a clear historical connection to cognitive and behavioral therapies prominent at the time and has become quite influential today.

*Albert Ellis*

Albert Ellis’ theory was the first approach of interest listed by Velten (1968). Ellis (1996) created a cognitively based therapy in 1955, originally called Rational-Emotive Therapy (RT) and eventually renamed Rational Emotive Behavior Therapy (REBT) (Ellis, 1996, 1999; Haaga & Davison, 1993). The theory is fairly simple. Ellis
(1996) believes that people have goals to live, to be social, to find meaning in life, to work, and to play. In the pursuit of those goals, people might hit a block or an “adversity” to that goal (Ellis, 1996, p. 12). The beliefs that a person has toward that negative event, either rational beliefs or irrational beliefs, then determine the response or the consequence of the adversity (Ellis, 1996). If a person has a goal, and an adversity occurs, and the person has irrational, dysfunctional beliefs, the personal consequence will be negative for the individual and potentially debilitating. Conversely, if the beliefs are rational and functional, the consequence may still be negative, but will not incapacitate the person. Ellis (1996) referred to this as the ABC’s of REBT, or Adversity, Belief, and Consequence. This influence of what a person thinks (beliefs) on what a person feels (consequences) was of importance to Velten (1968).

E. Lakin Phillips

The second theorist noted by Velten (1968) was E. Lakin Phillips. Phillips’ (1985) primary contribution was not a specific therapeutic technique but the study of attrition in therapy. He found that the rate of attrition was greatest after the initial intake session and continued the longer therapy persisted (Phillips, 1985). In response to the long-term psychoanalysis still popular in the 1960’s, Phillips was a supporter of briefer therapies including behavioral approaches like Wolpe’s and cognitive approaches like Ellis’ and Beck’s (Phillips, 1985; Wiener, 1996). He suggested that a shorter-term, problem-focused, and client-centered approach would provide better treatment over the limited number of sessions to which most clients would commit (Phillips, 1985). Phillips used “practical behavior-change methods” in his own practice and taught behavior modification to his students (Wiener, 1996, p. 53). Most importantly, he showed that
brief therapies were effective, and clients who left therapy before the therapist felt they were ready had indeed benefited from their time with the therapist (Phillips, 1985; Wiener, 1996). While Phillips did not create a therapeutic approach per se, he added support to the growing movement of behavioral and cognitive therapies Velten felt were significant at the time.

*Joseph Wolpe*

The third theory that Velten (1968) mentioned as an effective therapy was reciprocal inhibition or systematic desensitization as developed by Joseph Wolpe (Hunt, 1993; Rachman, 2000, Wolpe, 1992). Wolpe was interested in the formation and treatment of neuroses, first in cats, then in people (Rachman, 2000). He created a procedure that involved repeated exposure to a fear-provoking stimulus such as a fear of driving or a fear of urine (Hunt, 1993; Rachman, 2000, Wolpe, 1992). A hierarchy of fears ordered by degree of fear induced was created for the patient (Rachman, 2000). Starting with the least anxiety-producing item, the individual was exposed to each level, one at a time, and each followed by deep muscle relaxation exercises (Hunt, 1993; Rachman, 2000). The result was an overall reduction in fear or anxiety about the offending subject (Hunt, 1993; Rachman, 2000, Wolpe, 1992). The procedure as originally developed by Wolpe, and familiar to Velten, was conducted without the actual fear-provoking condition being present (Rachman, 2000). The person had to imagine the presence of the alarming matter and change the reaction through relaxation training. This again related to Velten’s thoughts-related-to-feelings question. It was not until later that the procedure was improved to include in vivo stimulus and renamed exposure therapy (Rachman, 2000).
Aaron Beck

Velten (1968) did not mention Beck on his list of semantic theorists as Beck’s developments came somewhat later. Beck’s work, however, was based on the same ideas presented above, and would probably have been included, if present, in 1968. Beck is included here because of his authority on cognitive therapy today, and because he is considered the “creator of cognitive therapy” (Hunt, 1993, p. 585). As Beck (1993) noted, cognitive therapy is a “robust system of psychotherapy” (p. 197). Like the other theories, Beck’s Cognitive Theory also examined the attributions people give to events and the importance of beliefs on thoughts and feelings (Beck, Rush, Shaw, & Emery, 1979). He was a supporter of behavioral interventions as espoused by Wolpe, using the techniques to break himself of fears of blood and tunnels (Hunt, 1993). In his own theory, Beck emphasized the centrality of distorted thinking and derived his theory by asking patients with depression to report what they were thinking (Beck, 1991; Hunt, 1993). He inferred from the resulting information that individuals with depression experienced negative thoughts, but he found that individuals were not necessarily aware of these negative thoughts (Beck 1991). As a result, Beck labeled them automatic negative thoughts (Beck 1991). These were, in turn, hypothesized to be the building blocks of negative schemas (Beck 1991). As with Ellis, when an event occurs, a related schema or belief system is activated (Beck et al., 1979; Hunt, 1993). If the schema is negative, it then colors experiences of the self, the future, and experiences in a negative way, resulting in a globally negative outlook (Beck et al., 1979). The logical treatment was to correct the distortions and negative schemas held by the patient (Hunt, 1993).
This is another example of Velten’s interest in theories that examine the power of thoughts about a situation over feelings by the person.

The zeitgeist of the late 1960’s was both a movement away from psychoanalysis and toward more testable, shorter term, and problem focused therapies as well as a movement away from behaviorism and toward cognitivism (Hunt, 1993, Nathan & Gorman, 1998). Velten’s (1968) theoretical goal was to test semantic theories of the time, including those developed by Albert Ellis, E. Lakin Phillips, and Joseph Wolpe. Added to this review was Aaron Beck. The notion of interest was that thoughts influence feelings, and each of the above named men contributed in his own way to this tenet. Velten created a method to artificially influence feelings in the laboratory based on these theories.

**Velten’s Mood Induction Procedure**

Velten’s (1968) original paper was based on work that he completed for his dissertation in 1967. In this study, he created a framework for researchers that is still in use today. Velten’s innovative work will be reviewed followed by a review of the research into variations of that initial work.

**Description of the Original Procedure**

In his original work, Velten (1968) included 100 female participants. Each person was given three pretest tasks (primary suggestibility, decision time, and perceptual ambiguity) to complete and then was randomly assigned to one of five groups: Elation (EL), Depression (DE), Neutral (NU), Elation Demand Characteristics (EDC), or Depression Demand Characteristics (DDC). For the EL and DE groups, participants read
instructions indicating that they should “try to feel the mood suggested by the statements” (Velten, 1968, p. 474). They then read a series of 60 self-referent statements that started in a neutral vein and became increasingly more elated or depressed depending on the group. The participants were exposed to each statement for 20 seconds. Examples of elated statements included “If your attitude is good, then things are good, and my attitude is good,” and “This is great – I really do feel good – I am elated about things” (Velten, 1968, p. 475). Examples of depressed statements included “Every now and then I feel so tired and gloomy that I’d rather just sit than do anything,” and “I have too many bad things in my life” (Velten, 1968, p. 475). The NU group read a series of statements that remained neutral in mood, such as “Utah is the Beehive State” (Velten, 1968, p. 475).

The EDC and DDC groups were given instructions that detailed the procedure for the corresponding EL or DE group, were given some synonyms for the specific mood, then were asked to “behave the way I (S) estimate other Ss behave who have been administered all 60 statements representing this mood of (elation) (depression)” (Velten, 1968, p. 475). Next they were given five examples of statements and reminded to “act as if I were (elated) (depressed)” (Velten, 1968, p. 475).

Following the mood induction task, each participant was given a variety of posttest tasks (writing speed, distance approximation, decision time, perceptual ambiguity, word association, and spontaneous verbalizations) to complete (Velten, 1968). In addition, one of the posttest measures used for a manipulation check was the Multiple Affect Adjective Check List, Today Form (MAACL). Finally, each person was given a questionnaire to assess for the participant’s awareness of the effects of the mood induction and awareness of the hypotheses.
Results were generally supportive of the hypotheses Velten presented (Velten, 1968). There were no differences found among the groups prior to the mood induction procedure. Behavioral observation and self-report indicated that the women in the DE group felt depressed (two were close to tears) and the women in the EL group felt elated. The women in the NU, DDC, and EDC groups appeared to remain in a neutral mood. A few of the participants in the DDC and EDC conditions seemed to be obviously faking the instructed mood in a near histrionic way.

Participants who scored higher on the primary suggestibility measure were more likely to be affected to a greater degree by the mood induction (Velten, 1968). When primary suggestibility and pretreatment mood was controlled for, there was still a significant change in mood overall with both the DE and EL groups. On the various pretest and posttest tasks, the groups looked different from each other. For almost all of the continuum measures, the NU group's performance fell between the EL and the DE groups. Additionally, the EL and EDC groups were different on various tasks, and the DE and DDC groups were different. Finally, on the post experimental questionnaire assessing awareness, the EL and DE groups indicated that their mood was affected, and the NU, DDC, and EDC groups indicated that their mood was not affected. DDC and EDC groups were unsuccessful at inducing the requested mood on their own. The participants were also mostly unaware that they were performing in such a way as to support the researcher's hypotheses.

In summary, Velten (1968) attempted to create a method to artificially induce a mood in a laboratory setting. The skeleton procedure used by Velten and adopted by many other future researchers included pretest measures, the mood induction, and
posttest measures. Velten (1968) appeared successful at inducing an elated mood and at
inducing a depressed mood. These groups looked and performed differently than the
neutral control group and the demand characteristic control groups designed to mimic the
desired moods. Velten set the stage for a wealth of research to follow using this format.

Variations on the Original Procedure

Statement breakdown. One question that researchers have examined is the
breakdown of the original statements into two components, self-devaluative and somatic
statements. Riskind, Rholes, and Eggers (1982) and Riskind and Rholes (1983) all
looked at the difference of the self-devaluative statements and somatic statements on
depression. An example of a self-devaluative statement is “I am worthless” (Riskind et
al., 1982). An example of a somatic statement is “I am tired and listless.” Riskind and
Rholes (1983) found that the self-devaluative statements resulted in a more depressed
mood than either the neutral or somatic statements. Riskind and colleagues (1982) found
that self-devaluative statements also had a greater impact on memory than either the
neutral or somatic statements. Perhaps it is the self-devaluative statements Velten (1968)
created that are inducing the depressed mood.

Number of statements. Another point of interest was in the reduction in the
number of statements. Schare and Lisman (1984) compared mood induction using 25
statements and using 50 statements. They reported that a greater effect was found when
the full 50 statements were used versus only 25 statements. They recommended not only
using the greater number of statements but also using a manipulation check to determine
mood change. Finegan and Seligman (1995) used 50 of Velten’s statements and were
successful in inducing the desired moods. Cohen, Towbes, and Flocco (1988) used 45 of
Velten’s original statements and found the mood manipulation to be effective. Davey and Matchett (1994) used only 40 statements created to look at anxiety and showed a significant difference between the induced anxious group and the neutral or control group. Rexford and Wierzbicki (1989) created two new sets of statements, one based on work by Beck (Beck, Rush, Shaw, & Emery, 1979) and one based on work by Lewinsohn (Lewinsohn & Amenson, 1978) and each consisting of 59 statements. Both were effective at mood change. Inness, Desmarais, and Day (2004) used only 16 statements. Their manipulation check showed movement in the expected directions, but there was no overall change in mood post manipulation.

Then Seibert and Ellis (1991) created a new set of statements to induce happy, sad, and neutral moods. Each list consisted of 25 statements, and the authors reported that the “mood induction scales are at least as effective as Velten’s” (p. 122). Kwiatkowski and Parkinson (1994) chose to use the shortened Seibert and Ellis (1991) forms and were able to show a statistical difference in mood between depressed and neutral. By contrast, Jennings, McGinnis, Lovejoy, and Stirling (2000) added statements to the Seibert and Ellis (1991) work increasing the 75 statements for depression, elation, and neutral moods to 84 for all three groups. Zoellner, Sacks, and Foa (2003) used only 20 dissociation or serenity statements and were able to change mood. It seems apparent that there is flexibility in the basic method. A reduced number of statements can be used to successfully change a person’s mood, but the process works better with more statements.

Moods. Velten (1968) also noted that his mood induction procedure could be used to create moods other than depression and elation in the laboratory, such as fear or

**Incubation period.** Finally, a fourth major alteration of the original procedure was to add an incubation period. The duration of the effects of MIPs tends to be fairly short and will be reviewed in detail later. The addition of an incubation period was implemented to help strengthen and lengthen the effects. Sinclair, Mark, Enzle, Borkovec, and Cumbleton (1994) added a three minute incubation period after participants read the statements. They requested that participants “would be concentrating on building the mood” (Sinclair et al., 1994, p. 395). This incubation period, or a time to focus on the mood being induced, was designed to reinforce the mood desired. Sinclair and colleagues (1994) found that adding the incubation period increases
the length of time that the mood change lasts. Zoellner and colleagues (2003, 2004) added an incubation period to strengthen the procedure. Overall, the addition of the incubation period seems to help reinforce the mood being created and lengthens the amount of time the participant stays in the mood.

The framework that Velten (1968) created of pretest, mood induction, posttest remains primarily unaltered. The details of the mood induction have undergone many transformations. The research demonstrates both the strength and flexibility of the procedure itself. For greatest results, however, it appears best to use more statements and to add an incubation period.

Other Mood Induction Procedures

In addition to the Velten procedure and its variations, there are several other types of mood induction procedures that have been developed over the years. Although there are multiple ways in which to categorize MIPs (Gerrards-Hesse, Spies, & Hesse, 1994; Westermann, Spies, Stahl, & Hesse 1996), the following classification system proposed by Westermann and colleagues (1996) is used. Other MIPs include music, film/story, feedback, social interaction, gift, facial expression, imagination, and combination.

*Music MIP*

The Music MIP uses the presentation of emotionally laden music to induce the desired effect (Gerrards-Hesse et al., 1994; Westermann et al. 1996). The music is often classical or modern in nature, and the speed at which it is played may also be manipulated. For example, when inducing a depressed mood, the experimenter might play a sad classical piece at half speed. This procedure has been done both with and
without specific instructions to the participants to enter the mood of the music (Westermann et al., 1996). While the experimenter typically chooses the music that will be listened to, on some occasions, the participant is allowed to choose the music that will induce the desired mood.

*Film/Story MIP*

In the Film/Story MIP, participants are provided with a narrative to elicit a specific mood (Gerrards-Hesse et al., 1994; Westermann et al., 1996). The presentation may involve a film, short film, slide show, or written story or vignettes. The common theme of the Film/Story MIP is that the participants are to associate with the protagonists (Westermann et al., 1996). Sometimes participants are exposed to the narratives without instruction, and sometimes they are coached to become involved emotionally with what they experience (Gerrards-Hesse et al., 1994; Westermann et al., 1996).

*Feedback MIP*

The Feedback MIP is based on the idea that one’s experience of success or failure on a task influences one’s moods (Gerrards-Hesse et al., 1994; Westermann et al., 1996). Participants are asked to complete a task, and they are either given false or true feedback with the goal of affecting their frames of mind (Westermann et al., 1996). Participants may be asked to complete a vague test that is difficult to assess how one is doing. They are then assigned to the success (positive mood) or to the failure (negative mood) group. In some cases, the participants are given true feedback, usually the results on a test completed during a course. As a modification of the Feedback MIP, Henkel and Hinsz (2004) have begun development of success or failure in goal attainment as a way to change mood.
**Social Interaction MIP**

The Social Interaction MIP utilizes contact between individuals, usually the participant and a confederate, to affect mood (Gerrards-Hesse et al., 1994; Westermann et al., 1996). The confederate is instructed to model the desired mood (Westermann et al., 1996). For example, when wanting a depressed mood effect, the participant is exposed to a confederate who appears morose in both word and action with the idea that the mood of the confederate will rub off on the participant. Other studies have asked the participant to help the confederate, assuming that helping others induces a positive mood (Westermann et al., 1996).

**Gift MIP**

The Gift MIP simply involves giving some token to the participant (Westermann et al., 1996). The participant is given a small inexpensive gift for participating in the experiment in the hopes that a positive mood will be induced (Gerrards-Hesse et al., 1994; Westermann et al., 1996).

**Facial Expression MIP**

The Facial Expression MIP requires participants to form a specific facial expression according to the instructions of the experimenter (Gerrards-Hesse et al., 1994; Westermann et al., 1996). For example, a participant is asked to manipulate certain facial muscles so that a frown is produced with the goal of creating a negative mood (Westermann et al., 1996). Alternately, the instructions might lead to a smile that is supposed to lead to a positive mood. Often participants are told that the experiment is about muscle activity to mask the true intent.
**Imagination MIP**

The imagination MIP involves participants recalling events from their own lives (Gerrards-Hesse et al., 1994; Westermann et al., 1996). They are instructed to choose an event from their lives that corresponds to the mood being induced. For example, when attempting to induce a depressed mood, the participants would be requested to remember a time that they felt very sad and depressed, such as a time when someone passed away. The participants would be further coached to remember the “original perceptions, sensations, and affective reactions” (Westermann et al., 1996). The participants might also be requested to write the experience in order to explore the event more fully. At times, the specific event is stipulated for the participants. An additional form of the Imagination MIP is the use of hypnosis where the participant is put into a trance then directed to remember a specific life event (Gerrards-Hesse et al., 1994).

**Combined MIP**

The Combined MIP is an amalgamation of two or more MIPs (Gerrards-Hesse et al., 1994; Westermann et al., 1996). Generally methods that are compatible are joined (Westermann et al., 1996). For example, the Velten MIP might be combined with the Music MIP or the Imagination MIP might follow the Velten MIP or be conducted while music is being played. The goal is to increase the effectiveness of the MIP and create a greater effect (Gerrards-Hesse et al., 1994).

**Most Commonly Used MIPs**

A meta-analysis of 109 articles spanning from 1976 to 2007 was completed to see which mood induction procedures were most commonly used. These articles are denoted with an asterix in the reference section. The most common MIP used by far was based on
Velten’s (1968) original work. Many variations were used including new statements, reduced number of statements, and the addition of incubation periods. In all, 34 experiments used a Velten or Velten-like procedure. The second most common MIP was Film/Story. Including film, TV, cartoons, and pictures, 21 experiments fell into this category. Music MIPs were used 16 times, and Imagination MIPs were used 15 times. The Feedback MIP was used in 13 experiments when including demand tasks. The Confederate MIP condition was present three times, and the Gift MIP was used twice. Two experiments did not quite fit into the above categories. Odor and current weather were both used once to induce a negative or positive mood.

When looking at combinations, the Velten MIP and Music MIP were most often used in conjunction with another MIP. The Velten MIP and Music MIP were used together five times. The Velten MIP and the Imagination MIP were found together three times. The Feedback MIP was used with the Velten MIP once. Music was most likely to be combined and was done so with the Imagination MIP nine times. Music MIP and Film/Story MIP were used simultaneously six times, and Music MIP and Feedback MIP were united once. Other combinations found once included Film/Story with Imagination and Odor with Feedback.

Web-based MIPs

An exciting new addition to the list of MIPs is the web-based mood induction. Göritz and Moser (2006) have begun development on three types of mood induction, including the Velten procedure, Imagination (autobiographical recall), and Film/Story (photographs). Their initial research resulted in creating a negative mood change with the Velten technique and the photographs. Neither was successful at inducing a positive
mood, and the autobiographical method was ineffective at changing mood in either direction. These preliminary results, although not hugely successful, offer a way that Velten’s 1968 procedure might be brought into the 21st century.

Research Using Mood Induction

Velten’s (1968) mood induction procedure and its derivations have been used extensively in research. Many studies have been done to validate both the original form and the many resultant variations. In addition, investigations of the effect of mood on specific cognitive tasks and the effect of mood on cognitive processes have been done. Mood and behavior has been examined. Some work has looked at the effect of individual differences and personality on mood induction itself. With a few exceptions, however, research has focused on a population either specifically without certain psychological symptomology by screening out participants with elevated scores on various constructs such as depression or anxiety or on a sample not screened at all, so levels of symptomology are not known. Thus, the effect of mood induction on psychological symptomology has not been examined. The analyses have also reported on difficulties with MIPs, namely demand characteristics, duration of effect, and overall effectiveness.

Validation of MIPs

Some research has been done to validate the effectiveness of different MIPs in changing mood. This research has looked at the Velten MIP, Velten-like MIPs and other MIPs. What follows is a review of some of the literature focusing on validation of MIPs as a method of inducing mood in the laboratory.
Research validating Velten and Velten-like MIPs are most common. Cairns and Norton (1988) successfully induced and then reduced anxious, depressed, and hostile moods using a Velten-like MIP. They noted, however, that the moods produced were not pure, cautioning the use of induced moods as specific moods in research. For example, inducing a depressed mood also increased anxiety, so a researcher might have to link results to both mood states. Hale and Strickland (1976) validated the use of Velten MIP to induce elated and depressed moods and found that the neutral induction results fell between the other moods. Lewis and Harder (1988) validated the Velten MIP as effective at changing mood. They indicated that this change might be minimal due to the transient nature of the induced mood. Seibert and Ellis (1991) validated a Velten-like procedure for inducing happy and sad moods with the goal of not referring to any cognitive processes that might influence cognitive tasks to follow. Sinclair and colleagues (1997) validated a Velten-like MIP to induce anxiety and serenity.

Clark (1983) provided a comprehensive review of research using the Velten MIP showing changes in level of depression, other negative moods, psychomotor retardation, loss of pleasure, disturbed appetite, loss of incentive, indecisiveness, persistence in the face of frustration, facial EMG, hemispheric lateralization, illusion of control, differential accessibility of positive and negative conditions, behavior in social situations, and helpfulness. Measures not affected by the Velten MIP included skin conductance, time estimation, attributional style, and subjective probabilities and actual performance with anagrams.

In addition to Velten MIP investigations, additional research has been done to examine the effectiveness of the other MIPs, often in conjunction with the Velten MIP.
Slyker and McNally (1991) found both the Velten MIP and Music MIP to be successful at inducing depression and anxiety. Albersnagel (1988) validated the use of both Velten MIP and Music MIP for inducing anxiety, depression, and elation. Fox, Knight, and Zelinski (1998) validated the use of a Velten-like MIP and Music MIP with older adults. Isen and Gorgoglione (1983) validated both the Velten MIP and Film MIP. Chartier and Ranieri (1989) found both the Velten MIP and Feedback MIP were successful at inducing positive and negative moods.


Overall, the research validating different MIPs is positive. MIPs appear to be an effective way of changing the mood of a participant in the laboratory setting. Multiple procedures have been found effective in manipulating multiple moods. A second recurrent theme in the research is the use of cognitive tasks.

Effect of Mood on Specific Cognitive Tasks

Specific cognitive tasks are widely used both as a manipulation check and as the subject of interest. Velten (1968) used a variety of pretest and posttest measures as manipulation checks including decision time, perceptual ambiguity, writing speed, distance approximation, and word association. An example of memory as subject of interest is the work of Kwiatkowski and Parkinson (1994). They compared depressed,
induced depressed, and control groups on recall of words. They found differences between the three groups, with the induced depressed group sometimes matching the depressed group and sometimes matching the control group. This was contrary to other studies, prompting the authors to suggest multiple types of depression.

Looking at cognitive tasks as the subject of interest leads to one of the hot topics to come out of mood induction and memory, or specifically the question of mood incongruent recall and mood congruent recall. Cohen and colleagues (1988) investigated the effect of mood on recall of life events and reported that those having the elated mood induction admitted to the fewest negative events. Depressed induced individuals reported the least amount of perceived social support. Parrott and Sabini (1990) examined the concept of mood incongruent recall. They found that participants were more likely to remember events from their lives that were opposite in mood to their current mood. In other words, students in good moods remembered more negative events, and students in bad moods remembered more positive events. It was suggested that this occurred unknowingly by the individual in order to regulate mood. McFarland and Buchler (1997) reexamined mood incongruent recall. They showed that people would mediate a bad mood by recalling positive memories but only if they were first aware of the bad mood.

Conversely, Ehrlichman and Halpern (1988) using odors to induce positive and negative feelings found that those in the positive condition recalled more positive past life events than those in the negative or unpleasant condition showing a mood congruent effect. Goodwin and Sher (1993) found that individuals who were exposed to a sad mood induction were more likely to report a greater history of depressive symptoms over their lifetime than individuals exposed to a happy mood induction. Knight, Maines, and
Robinson (2002) demonstrated mood congruence on word recall lists. Older and younger adults both recalled more sad words when a depressed mood was induced. Raghunathan and Trope (2002) looked at the effect of mood on processing information. They found that a positive mood led to better recall in general and to more openness to negative criticism. This negative information, however, remediated the positive mood. Siemer (2005) reported that participants described having cognitions that matched the induced mood.

As the research was not conclusive regarding mood congruency and mood incongruency, more research followed looking for other conditions that might have an effect. Gayle (1997) looked at the mood congruency effect but first controlled for demand characteristics. He failed to find mood congruent recall at a significant level. This was attributed to low power and a subtle effect. Smith and Petty (1995) found self-esteem to be a mediating influence on mood congruent and mood incongruent memory. Individuals with low self-esteem exhibited mood congruent recall, while those with high self-esteem demonstrated mood incongruent recall. In fact, the higher the self-esteem, the more positive or incongruent the recall was.

This led to the question of why one MIP might be used over the other. Tugade and Fredrickson (2004) in a study parallel to the mood-incongruence studies found that positive emotions help remediate negative mood inductions. Resilient individuals used positive thoughts to regulate their emotions. This may be why individuals with higher self-esteem were more likely to show mood incongruent effects on memory. Heimpel, Wood, Marshall, and Brown (2002) looked at self-esteem and motivation to remediate negative mood. Individuals with low self-esteem were less likely to watch a comedy
video after a negative mood induction than their high self-esteem counterparts, even though both groups knew that the video would make them feel better. This again supports the idea of mood incongruency being used as a strategy to remediate mood, and those with low self-esteem or depression being less likely to do so. Hertel and Hardin (1990) found that people with an induced depression showed less initiative in using strategies on cognitive memory and spelling tasks. When they were asked to complete tasks that required no strategies, they performed just as the neutral group. When given the strategies useful to the more complex tasks, they performed just as the neutral group. When left to generate their own strategies, the neutral group did and the depressed group did not.

Mood congruent or incongruent recall is only one of many areas that mood induction researchers have investigated. Numerous cognitive processes and their relation to different moods have been examined. Ellis and Ashbrook (1989) reported that the most common manner of study by cognitive researchers is mood manipulation followed by examination of changes in cognitive processes. What follows is a summary of some of the other areas of interest.

Effect of Mood on Cognitive Processes

One well-developed area of research involves negative thinking and dysfunctional attitudes as related to mood. Miranda and Persons (1988) showed a nonsignificant positive link between depressed mood and increased dysfunctional attitudes. In addition, those with a history of depression reported more symptoms of depression than those without a history of depression. MacLeod and Campbell (1992) examined the idea that the perceived likelihood of an event occurring in the future is influenced by current...
mood. A negative mood was related to believing that a negative event would occur. Davey and Matchett (1994) showed that induced anxiety and worry is linked to more depressing thoughts and colors experiences in a more negative way. Segal, Gemar, and Williams (1999) induced a depressed mood in formerly depressed patients and found an increase in dysfunctional cognitions in patients treated with pharmacotherapy versus patients treated with Cognitive-Behavior Therapy. Additionally, these negative reactions were predictive of depressive relapse several years later. Ingram and Ritter (2000) utilized formerly depressed and never depressed individuals and found that the formerly depressed participants tended to focus more on negative stimuli than the never depressed participants. Moreover, those with a poor maternal bond and a history of depression were most likely to focus on the negative and to do so to a greater degree. Gemar, Segal, Sagrati, and Kennedy (2001) found that formerly depressed participants exhibited more negative thinking and endorsed more dysfunctional attitudes after a depressed mood induction than never depressed participants. Hunt and Forand (2005) had similar results.

In summary, negative moods tended to lead to more negative and dysfunctional thoughts. As with the mixed results in the mood congruency research, examinations into judgments were not conclusive. Petty, Schumann, Richman, and Strathman (1993) investigated attitudes. They found that a positive mood induction lead to more positive attitudes about a persuasive argument presented. Additionally, a positive mood induction with a more elaborate argument led to changes in attitudes and thoughts, while a less elaborate argument led to changes of attitude only. On the other hand, when Ottati and Isbell (1996) examined the effect of mood on information processing, they showed that those with good recall of presented information were likely to make judgments about that
information opposite to the induced mood, and those with poor recall made judgments in line with the induced mood. For instance, if a negative (or positive) mood was induced, and the participant had poor recall of the target information, the person was more likely to make a negative (or positive) judgment about the information. The converse was also found; if a negative (positive) mood was induced, and the participant had good recall of the information, a positive (negative) judgment was given. The authors suggest that the high recall group was able to correct for the bias of mood but possibly overcorrected.

Another area of interest when examining judgments was related to stereotypes. Bodenhausen, Kramer, and Süßer (1994) found that participants were more likely to subscribe to stereotypes after a positive mood induction unless they were specifically told they would be held accountable for those judgments. Conversely, Esses and Zanna (1995) looked at the effect of mood on making stereotypes and found that a negative mood correlated with making negative stereotypical attributions to certain ethnic groups. Ciarrochi and Forgas (1999) examined the mediating effect of mood on making judgments about other groups. Specifically, White participants made judgments about a threatening Black empowerment group. It was found that those with low trait anxiety made more negative judgments after a negative mood induction, and those with high trait anxiety made more positive judgments after the same negative mood induction.

Mikulincer and Shaver (2001) studied the effect of induced mood on attachment and security and found that mood is not a mediator on judgments made about out-groups. To summarize, positive mood and low anxiety were related to adopting stereotypes in two studies, negative mood was related in another, and a third found no mood effect. Inness, Desmarais, and Day (2004) found a mood by gender by justice effect. Men with
a negatively induced mood were more likely to pay themselves versus a coworker more than other groups.

Still another area where mood induction has been utilized is self-focus. Wood, Saltzberg, and Goldsamt (1990) looked at self-focus, and they found that negative moods increase a person's degree of self-focus. Results were mixed on supporting self-focus in happy induced individuals. Salovey (1992) examined self-focus and found that both depressed and elated moods led to more self-focus than the control group. Rusting and Nolen-Hoeksema (1998) turned the question of self-focus from depression to anger. They found that self-focused rumination increased anger and distraction decreased anger just as with depression. When examining mood regulation, they found that women tended to ruminate in the control condition but ruminated more in the induced anger condition. Men were equally likely to do either regardless of mood.

Mood may have an influence over self-focusing, but mood also appears to have an influence on people's evaluations of themselves and others. Esses (1989) found that acceptance of personal feedback was governed by mood. When a positive mood was induced, people were more likely to rate themselves in a more positive manner after being given positive feedback. Conversely, when a negative mood was induced and negative feedback given, the participants were more likely to rate themselves more negatively. Jouriles and Thompson (1993) examined the effect of mood induction on mothers' assessments of their children's behaviors. It was shown that mothers tended to rate their children's behaviors as better after a positive mood induction, better even than independent raters. Mothers exposed to a negative or neutral mood induction showed no
effects. Mood appears to have an effect on how we view not only ourselves but also those around us.

A variety of other studies demonstrate the broad utility of MIPs by examining diverse matters. Stephens and colleagues (1987) examined the helping behavior in relation to a depressed or anxious confederate. While a negative mood was not induced on the participants themselves, the participants were more likely to offer advice to the depressed confederate rather than the anxious confederate. In contrast, on questionnaires, the depressed confederate was rejected more than the anxious confederate. These results reflect on the treatment of depressed individuals by others, setting up a help-avoid paradigm. Forgas (1998) examined induced mood and the fundamental attribution error (FAE). He found that a negative induced mood decreases the FAE and a positive induced mood increases the FAE. Furthermore, the participants seemed unaware of this process leading the researcher to suggest the process is unconscious. Forgas (1999) studied the effect of mood on politeness. People who have experienced a negative mood induction tended to be more polite and indirect in making requests of others than those who had experienced a positive mood induction.

Phillips, Smith, and Gilhooly (2002) considered the effect of mood on older and younger adults and the ability to plan as part of general executive functioning. It was revealed that older individuals were more likely to show impairment after a positive or a negative mood induction. Positive mood also impaired younger adults but to a lesser degree. Blanchette and Richards (2003) showed that after an anxiety mood induction, participants are more likely to use contextual information to decipher emotionally ambiguous information than the control group.
In addition to examining various cognitive tasks and processes, MIPs have been used to study different behaviors such as drinking, smoking, and eating. The effect of mood on thought has been shown, and that link is also present with behavior. A summary of some of the behavior oriented research follows.

**Effect of Mood on Behaviors**

Cooney, Litt, Morse, Bauer, and Gaupp (1997) observed the effect of mood on desire to drink. Participants were treated alcoholic men who were exposed to a negative or neutral mood induction and their favorite alcoholic beverage. Results linked negative mood to increased desire to drink. Stein, Goldman, and Del Boca (2000) showed that participants drank more alcohol after a positive mood induction over a neutral mood induction, although the results were not significant. Additionally, the reported urge to drink was predictive of relapse after discharge. Colder (2001) found that negative induced mood related to drinking for coping reasons. Specifically, physiological reactions to the mood induction, not self-report of negative emotion, predicted drinking. This research indicates that people drink when in a good mood and when in a bad mood. Birch, Stewart, Wall, McKee, Eisnor, and Theakston (2004) attempted to parse out this difference and found that drinkers motivated for coping reasons wanted to drink more when in a negative mood and drinkers motivated for enhancement reasons wanted to drink more when in a positive mood.

McKee, Wall, Hinson, Goldstein, and Bissonnette (2003) examined the effect of mood on smokers. Women who had had the negative mood induction were more likely to attribute negative reinforcement abilities to smoking, such as stress relief or relaxation, while women after the positive mood induction were more likely to endorse positive
reinforcement such as being sociable. Doran and colleagues (2006) linked impulsivity to smoking and difficulty with smoking cessation. Conklin and Perkins (2005) showed a link between negative mood and quickened latency to smoke and increased number of puffs. Depending on mood, reason for smoking changed. Pomerleau and colleagues (2004) examined the idea that smokers with a history of depression might be more likely to suffer smoking withdrawal, but they found no differences.

Strauss, Doyle, and Kreipe (1994) looked at the effect of mood and diet related commercials on eating. They found that those who were high-restrained eaters paradoxically ate twice as much when exposed to the diet commercials than those who were low-restrained eaters. Schotte (1992) reported that mood induction in general disinhibits restrained eaters, or is linked to successful dieters eating more. Bekker, van de Meerendonk, and Mollerus (2004) linked negative moods to increased eating, and Rotenberg, Taylor, and Davis (2004) reported that a negative mood decreased one's body image. So, like alcohol, a positive mood or a negative mood can increase a behavior versus a neutral mood.

As is readily apparent, MIPs can be used to examine a variety of topics. Von Leopold and Dahme (2004) even examined the relationship between airway constriction and mood but found no relationship. Cognitive tasks, cognitive processes, and behaviors have all been studied through MIPs. Another area of interest is personality variables and individual differences as affected by mood. A summary follows.

*Effect of Personality and Individual Differences on Mood Induction*

A cross-section shows the variability of use of mood induction. Ruch (1997) examined state and trait cheerfulness and induced exhilaration. Those with high trait
cheerfulness exhibited more signs of exhilaration than those low in trait cheerfulness. Webb, Marsh, Schneiderman, and Davis (1989) found that people who are high self-monitors, or concerned with public opinion, had more difficulty with recognizing internal states than low self-monitors, or those less concerned with public opinion. Thus, low self-monitors showed less of a mood effect from the induction than high self-monitors. Cole, Zahn-Waxler, Fox, Usher, and Welsh (1996) used a negative mood induction to categorize children into three groups, inexpressive, modulated expressive, and highly expressive. Behavior problems were then examined from those categories, with inexpressive preschoolers showing more depression and anxiety symptoms at follow-up. Thus mood induction has been used to look at traits, to look at ability to examine one’s own moods, and to look at mood induction as an assessment or categorization tool.

More traditional personality traits such as neuroticism or extroversion/introversion have also been considered when studying susceptibility to mood induction. Lewis and Harder (1988) found no personality differences with susceptibility to the Velten MIP. Clark (1983) reported that individuals high in private self-consciousness were more susceptible to the Velten MIP. Hill (1985) found that neuroticism related to susceptibility of induced depressed mood, but introversion and extroversion did not. Lucas and Baird (2004) conducted a meta-analysis to examine extraversion and pleasant affect. Research has indicated that extroverts have stronger reactions to positive mood inductions than introverts. The meta-analysis indicated that this may be due to generally higher levels of positive affect overall by the extroverts. As has been shown repeatedly, results are mixed.
Mood and susceptibility to mood induction is also of interest. Cairns and Norton (1988) indicated that high levels of certain moods did not affect susceptibility to mood induction except for hostility induction. High levels of anxiety, depression, or hostility correlated with greater induction of hostility. Rexford and Wierzbicki (1989) showed that depression proneness had no effect on susceptibility to mood induction. Slyker and McNally (1991) found that some individuals responded better to a depression induction than an anxious induction and vice versa. Again, the outcomes are not conclusive.

In Velten's (1968) original work, only female participants were used. This raised the question of susceptibility to mood induction varying by gender. Clark (1983) reported no gender differences in his review of the literature. Pignatiello and colleagues (1986) also showed no gender differences. Blackburn, Cameron, and Deary (1990) again showed no gender differences. Westermann and colleagues (1996) indicated that gender differences are not clear in the literature, but their meta-analysis showed no gender differences. Lewis and Harder (1988) had inconclusive results with regard to gender differences. Finally, Albersnagel (1988) found that women were much more susceptible to mood induction. After several years, multiple studies, and meta-analyses, it appears unlikely that gender differences exist, but the question remains unanswered.

In another review article, Blackburn and colleagues (1990) found that susceptibility to the Velten MIP was influenced by the following: basal level of depression, frequency of negative thoughts over the past week, the experience of recent negative events, degree of belief in the statements themselves, levels of neuroticism, and degree of suggestibility. Introversion was not found to have an influence. Social desirability had only a weak influence. Doran and colleagues (2006) excluded
perimenopausal women as they appear more susceptible to negative moods. While it seems apparent that personality and individual differences might have an effect on MIPs, the direction of those effects remains clouded.

**Participants Used**

Given that researchers are interested in using MIPs to investigate a variety of issues, the next question is to whom are they inducing moods? In the same review of 109 articles conducted for this paper and mentioned earlier, it was found that 77 of the experimental groups were composed of students, either psychology undergraduates, other students, or a combination. Of those 77 groups, 66 groups were given no designation other than student or psychology student. Ten were specifically screened for depression and excluded on the basis of low or high depression scores. One group was screened and those with a past psychiatric history were dropped. One group was divided by level of depression proneness. One group was assessed for smoking habits. These samples appear overwhelmingly undescribed with no investigation of mood induction on the psychological symptomology very likely to be present in a cross-section of students.

Participants of varying ages were also used. Twenty-five studies were used to look at people in the general population, with three of the groups specifically screened to exclude those with elevated depression scores. One group was screened to exclude people with high depression scores and menopausal women. Five studies were used to examine older adults, and eight studies looked at children. One study was used to look at psychologists; one study examined teachers. Again, the samples used were either free of psychological symptomology or unscreened for psychological symptomology.
When looking for mood induction research on samples with clinical symptoms or psychopathology, there is a scarcity. Two studies were used to examine depressed groups as controls, but they did not receive a mood induction. Five studies consisted of groups composed of individuals who had been depressed in the past but no longer had symptoms of depression. Three studies included the subjects with alcoholism, three with smokers, and one study was used to look at emotional eating. Zoellner and associates (2003, 2004) included participants with PTSD and those without PTSD. Dissociation and serenity mood inductions were conducted with both groups with the goal of examining the encoding of trauma cues. Gemar and colleagues (2001) used participants that had been depressed in the past and participants that had never been depressed. Both groups received the mood induction for depression. By and large, research looking at mood induction and psychological symptoms is sparse at best.

Problems with MIPs

The final areas of MIP research to be reviewed are the problems with MIPs. There are three primary limitations associated with MIPs, and they include demand characteristics, duration of effect, and overall effectiveness. Each of these will be reviewed in turn.

Demand characteristics. The first limitation of MIPs and possibly the most hotly debated is the effect of demand characteristics. Demand characteristics can be defined as “when a subject’s response is influenced more by the research setting than the independent variable” (Ray & Ravizza, 1981, p. 206). Velten (1968) was aware of this problem, and sought to control for it by using demand characteristic control groups. Differences were found between the control groups and the induced mood groups,
seeming to show that the results were not due to demand characteristics (Velten, 1968). This seemingly was not enough, however, and the debate ensued.

Ingram (1989) noted the problem with demand characteristics in research citing problems with knowing if a genuine mood has been induced and to what degree. The primary argument regarding demand characteristics is that participants have guessed the purpose of the study and want to confirm the hypothesis and so fake the requested mood (Westermann et al., 1996). Westermann and colleagues (1996) did not support the idea that participants want to guess the hypothesis and are motivated to authenticate it. However, Larsen and Sinnett (1991) observed that the Velten MIP is "rather transparent" (p. 324). Especially when given specific instructions in addition to the statements, participants should have little difficulty guessing the purpose of the MIP. Their recommendation was use of a cover story. Pignatiello and colleagues (1986) suggested that a Music MIP would be prone to fewer problems with demand characteristics, as it is effective without giving specific instructions. Govern and Marsch (1997) recommended using a mirror instead of specific instructions when attempting to induce a mood to counter some of the demand characteristics. Slyker and McNally (1991) found that instructions to enter either a depressed or anxious mood were as successful as either a Velten-like induction or a Music MIP thus indicating that MIPs are highly susceptible to demand characteristics.

Berkowitz and Troccoli (1986) systematically reviewed aspects of demand characteristics and their relation to the Velten MIP. The first issue is that participants are motivated to do "good" and "behave appropriately" in order to further science (p. 339). The authors doubt this to be true of the average student participant and add that it is more
likely that participants will be motivated to follow the instructions given. The second issue is that participants are “detectives” trying to discover the true nature of the experiment and hypothesis (p. 340). The authors found that participants do not typically know when a cover story is given so tend to believe the experimenter. Additionally, when questioned about research that was participated in, participants were not typically able to verbalize the hypotheses being tested. In fact, Berkowitz and Troccoli (1986) reported that only 35% of depressed participants and 30% of elated participants attributed their mood changes to the Velten MIP they had recently experienced. So, in order for demand characteristics to be responsible for mood change, participants must have the following: motivation to help the success of the experiment even if they have to lie; a desire to find out the true hypothesis; the ability to be able to discern the hypothesis from the experiment; and the wish to authenticate the hypothesis. Overall, the authors suggested that demand characteristics might have an influence, but only a minimal one inasmuch as it is unlikely for the above to occur.

As further evidence against the strength of demand characteristics, Westermann and associates (1996) showed that multiple moods are generated by a mood induction procedure. If results were due solely to demand characteristics, only the requested mood would be present. They also reported that behavioral variables are changed in response to mood induction, and behavioral variables are much harder to fake. This indicates that the change in mood is not wholly due to demand characteristics.

Methods to control for demand characteristics have also been earnestly discussed. Westermann and colleagues (1996) suggested a number of ways to control for demand characteristics and are listed as follows: using deception, excluding suspicious
participants, using seemingly unrelated but successive experiments, and adding demand characteristic control groups. They recommend the last as the best method, but Brenner (2000) noted that using demand characteristic control groups is problematic in that changes due to the instructions that tell the participant to act “as if” in a mood may be prone to the same demand characteristics as with the participants in the mood induction group. Sinclair and colleagues (1997) recommend the use of a cover story to help combat the issue of demand characteristics and to question participants for suspicions about the purpose of the study. However, Brenner (2000) discussed the problem of using a post-experimental questionnaire to assess participants’ knowledge of the hypothesis as they often will not report the hypothesis even when told the hypothesis prior to the experiment, the questionnaire is also prone to demand characteristics, and even if they are unaware of the hypothesis, demand characteristics cannot be precluded.

There is still much support for MIPs in the face of demand characteristics, even though Buchwald, Strack, and Coyne (1981) examined the effect of demand characteristics and the Velten MIP and were unable to reject the influence of demand characteristics. MacLeod and Campbell (1992) discounted the strength of the effect of demand characteristics, saying that the results of their research were not due in total to this problem. Sinclair and colleagues (1994) argued that even with the effect of demand characteristics, true mood change does occur. Velten MIP is no more or less prone to demand characteristics than other MIPs. Finegan and Seligman (1995) found in their own experiments and through reviews of other research that the mood changes elicited by the Velten MIP are real and not due to demand characteristics. In summary, it appears
that MIPs are influenced by demand characteristics but changes are not due entirely to them.

*Duration of effects.* The second shortcoming of MIPs is the duration of the induced effects, or more appropriately, the lack of duration of effects. As with all MIP research, there is no clear answer as to how long an induced mood lasts. Frost and Green (1982) reported loss of mood after 10 minutes. Clark (1983) reported that effects of both Velten MIP and Music MIP are short lived. Schare and Lisman (1984) used the Velten MIP over two days and found it to be effective, although slightly less so, the second day. Sinclair and colleagues (1994) reported the Velten induction lasted 25-30 minutes. Knight and colleagues (2002) found that the depressed mood induced using a Velten MIP were reduced or gone by the end of the research period. They did not mention how long this was, but they did note it as a limitation.

Some procedures seem to be better than others at sustaining mood. Isen and Gorgoglione (1983) showed no effect after a simple and short four-minute task for the Velten MIP, while the Film MIP remained stable after the task. Chartier and Ranieri (1989) showed that the Feedback MIP created longer lasting effects than the Velten MIP. The Velten induced effects lasted only about six minutes, but the Feedback MIP effects lasted for 30 minutes with reduced strength after about 18 minutes.

In an attempt to solve this problem, Gendolla, Abele, and Krüsken (2001) lengthened the duration of the mood induction by distracting the participants and labeling the induction procedure as another task to complete. It was noted that when participants become aware of the basis of their mood, the induction process, the effect is lessened. In
summary, MIPs are limited by their short duration of effects. This suggests that research using MIPs needs to be kept time-limited or multiple inductions might be required.

Effectiveness. The third major problem involving MIPs is overall effectiveness. Again, the numbers vary across the research to some degree. Slyker and McNally (1991) reported that 60% of participants did respond to the Velten induction. Blackburn and colleagues (1990) also reported that 60% of participants responded to the Velten induction. Clark (1983) reviewed the literature on effectiveness rates and found reports that mood was changed using the Velten MIP in 50-70% of participants. Albersnagel (1988) indicated that Music MIP was more effective at inducing moods than Velten MIP. Ehrlichman and Halpern (1988) suggest that a Velten MIP might produce a greater effect than the Odor MIP they used. Chartier and Ranieri (1989) showed that the Velten MIP created stronger effects than a Feedback MIP.

Gerrards-Hesse and associates (1994) conducted a meta-analysis. For a positive mood induction, they found that the Film/Story and Gift MIPs were most effective. For a negative mood, Imagination, Film/Story, Feedback, Velten MIPs were highly effective. Similarly, Westermann and colleagues (1996) conducted a meta-analysis of MIPs. They reported variable effectiveness ratings. Velten MIP and Facial Expression MIP were successful 50% of the time. Imagination, Film, and Music MIPs were effective 75% of the time. Another report indicated 50-66% effectiveness for Velten MIP and 100% effectiveness for Music MIP. Still another report gave a large effect size ($d = 0.76$) for the Velten MIP. The meta-analysis supported a medium to large effect size for MIPs in general. The Film/Story MIP with instruction was the most effective MIP for both depressed and elated moods. When inducing a negative mood, all MIPs other than Facial
Expression MIP were found to be effective with the Combination MIPs being slightly more so. When inducing a positive mood, the Film/Story MIP was far and away the most effective. Overall, there was a bigger difference in mood state for the negative condition than for the positive condition for all MIPs. The authors suggested that this might be due to participants naturally being more positive to begin with, leaving less room for change due to the induction.

When conducting research with MIPs, it is important to understand that mood manipulation will not be successful with all participants. Kenealy (1986) recommended the use of a manipulation check to determine if the mood induction had been successful. Larsen and Sinnett (1991) reported that the largest effect size for the Velten MIP was found when an honest cover story was used. Westermann and colleagues (1996) reported that effect sizes were bigger for MIPs that did not use a false cover story and included specific instructions to enter the desired mood. They indicated that the more controls that were present for demand characteristics, the smaller the effect. In order to maximize the effect, it is suggested to use an honest cover story and provide participants with instructions to enter the desired mood.

**Velten Mood Induction as a Therapeutic Tool**

Velten (1968) and many others made the recommendation that his mood induction procedure could be used as a therapeutic tool. He suggested that using mood statements at times of negative feelings repeatedly could lead to a conditioning effect, thereby helping to alleviate bad moods in the future. The proposal to use MIPs as a therapeutic tool is not limited to Velten. Sinclair and colleagues (1997) recommended
the use of a Velten-like, guided imagery procedure in conjunction with progressive relaxation to reduce anxiety. Goodwin and Sher (1993) recommended using a mood induction procedure to remediate a depressed or anxious mood prior to completing a diagnostic interview as individuals are more likely to report more symptoms when in a negative mood than if in a positive mood. Many others included a note in their discussions that MIPs might be used for treatment.

There are several benefits to the procedure that make the Velten MIP a good candidate for use as a therapeutic tool. Specifically, the Velten MIP has been shown to change moods, demand characteristics can be used to increase effects, those effects can be built upon despite their short duration, the procedure is extremely flexible to person, problem, mood, and treatment method, and is easy to use.

**Moods Change**

If the Velten MIP is to be used successfully, it has to be able to have an effect on the patient, and as shown previously, the Velten MIP is able to change moods. The primary focus has been on inducing negative moods, but positive moods have also been effectively generated. Additionally, Cairns and Norton (1988) were successful at reversing anxious, depressed, and hostile induced moods by using statements designed to be the opposite of the mood in question. The Velten MIP, therefore, is able to produce negative moods, positive moods, and reverse negative moods.

**Demand Characteristics Can Be Helpful**

The topic of demand characteristics runs heavily through the Velten MIP literature. As shown above, demand characteristics do appear to have an influence on mood change, although they are not solely responsible for that change. While the effect
of demand characteristics should be minimized in the research process, it becomes less important when using the Velten MIP as a therapeutic method. The source of mood change is a serious question in experimentation, but less so in therapy. If the mood changes, the goal is achieved. Furthermore, it has been shown that reducing controls for demand characteristics increases the effectiveness of the procedures. Two contributors to demand characteristics are cover story and explicit instructions. In the therapy session, the therapist can be honest with the client as to the purpose and use of the Velten MIP and include the client in the treatment process. Specific instructions would be necessary if clients are expected to be able to use this method outside of the therapy session. So, while problematic for research, demand characteristics can be used to increase the effectiveness of the Velten MIP in and out of therapy sessions.

*Duration of Effects Can Be Built On*

Another limitation of the Velten MIP in research is the short duration of the effects. As described previously, the effects may last anywhere from a few minutes to a half hour. It would not be efficient to periodically reinduce moods during an experimental session. This limits what can be studied in a single session. With regard to therapy, however, this is less problematic. If the Velten MIP were used to remediate negative thoughts and feelings as they occur as suggested by Velten (1968), it would not be necessary for the effects to be long in duration. The goal, again, would be a change in mood at that time. Velten (1968) also suggested that the effects could be built upon through repeated use. This may increase not only the duration of the effects but also the overall degree of mood change, making the Velten MIP stronger with use.
The Velten MIP is Flexible to Process

Perhaps the biggest asset of the Velten MIP as a therapeutic tool is the flexibility to person, problem, mood, and treatment method. The statements could be tailored to the person’s language, beliefs, priorities, or time. Velten (1968) suggested that the therapist and patient could create statements that reflect the personal issues or problems being addressed. Multiple sets of statements could be generated to avoid habituation or reduced effects over time. The Velten MIP has already been shown to successfully induce a variety of moods including but not limited to the following: anger, anxiety, fear, affection, threat, hostility, serenity, worry, dissociation, excitement, calmness, exhilaration, pleasantness, unpleasantness, and, of course, depression, elation, and neutralness.

The use of the Velten MIP could also be used as an adjunct to multiple treatment techniques. Fredrickson (2000) suggested using positive emotions in conjunction with relaxation therapies, behavioral therapies, cognitive therapies, and coping strategies. Velten’s (1968) recommendations had a distinctly behavioral bend. The Velten MIP could also be used to expose the client to a negative mood as practice for the future. There appears to be no limit as to the personalization of the technique.

Facility of Use

Another quality that makes the Velten MIP a viable therapeutic technique is the facility of use. After creating a set of Velten-like statements, a client would not be limited to using them with the therapist’s expertise. In fact, the client could carry the statements and use them in almost any situation. It is not necessary to read the statements out loud for them to be effective. If the client can read and can find a place to
concentrate, the client can use this procedure independently with little practice.

Furthermore, therapists themselves would not require extensive training in order to use these procedures. A basic understanding of how the statements are constructed would be all that was necessary to start. The applications are broad and use would be appropriate when mood change is desired. This would provide therapists with another tool to use in the therapeutic process.

**Fredrickson's Broaden and Build Model**

Additional support for using the Velten MIP in therapy or as a therapeutic tool can be found in Fredrickson's (1998, 2000, 2001, 2003) Broaden and Build model. In a nutshell, Fredrickson argued that negative emotions such as anger, fear, and disgust lead to specific, narrowly focused actions such as hostility, flight, or expectoration (Fredrickson, 2003). Positive emotions, on the other hand, lead to more general, broadly focused options. For example, joy may lead to play and creativity, interest may lead to exploration and expansion, contentment may lead to savoring and integration, and pride may lead to sharing and drive for further accomplishment (Fredrickson, 2001). Basically, negative emotions create a focus on the trees, and positive emotions create a focus on the forest.

This broadening effect alone would be useful in a therapeutic process. Work by both Ellis (1996, 1999) and Beck (Beck, 1991, 1993; Beck et al., 1979) require the challenging of negative thoughts. Inducing a positive mood and therefore expanding the resources available to the client would facilitate this process. Positive emotions help in "widening the array of the thoughts and actions that come to mind" (Fredrickson, 2001, p. 220). MIPs as an adjunct to cognitive therapy would enhance the process.
Fredrickson’s (1998, 2000, 2001, 2003) Broaden and Build model does not stop with expanding options. Fredrickson (2001) noted that positive emotions help to remediate the aftereffects of negative emotions. When a person is exposed to a positive mood after experiencing a negative mood, the general recovery to a neutral state is hastened. Therapeutically, this gives support to Velten’s (1968) recommendation that his statements be used following the occurrence of a negative mood. The model suggests that the negative mood will have a less durable effect when combated with a positive mood.

In addition to gaining a broader mindset and being able to combat negative feelings, positive moods also aid in overall resiliency (Fredrickson, 2001; Tugade & Fredrickson, 2004, Fredrickson, Tugade, Waugh, & Larkin, 2003). Positive emotions help individuals to “bounce back” (Fredrickson, 2001, p. 222). Fredrickson (2001) argued that resilient individuals tend to use positive emotions to fight negative moods and thoughts. She further argued that repeated positive emotions would help build this overall resiliency to negative situations. From a therapeutic standpoint, more resilient individuals would be less prone to relapse and would be better able to adjust to negative conditions.

Finally, this increased resiliency and increased use of positive mood counteracts the downward spiral of depression with an upward spiral of positive emotions (Fredrickson, 2001). This can take us beyond the scope of treating disorders and on to building emotional well-being and beyond. In summary, the Broaden and Build model (Fredrickson, 1998, 2000, 2001, 2003) utilizes positive moods to increase emotional options, combat negative emotions, speed recovery of negative emotions, increase
resiliency, and facilitate emotional health. In addition, Fredrickson (2001) argued that these changes in resilience and well-being are durable over time (Myers, 2000).

Velten’s (1968) recommendation of using his MIP therapeutically seems justified. There are a number of qualities of the Velten MIP that make it useful as a therapeutic tool. The Velten MIP can be personalized, is very flexible, and is easy to use. As Fredrickson’s (1998, 2000, 2001, 2003) Broaden and Build model shows, the benefits of using positive emotions are real.

Purpose

The purpose of this exploration was to expand the prior investigation of MIP effects to include the effect of mood induction on psychological symptoms. Previously, mood induction has been shown to be a versatile method in and of itself. Mood induction has been used to investigate numerous topics related to cognitive tasks, cognitive processes, behaviors, and individual differences. Additionally, it has been argued that MIPs would make a helpful addition to the therapeutic process. Velten (1968) himself proposed using his procedure as a therapeutic tool some 40 years ago, yet no one has explored this issue to date. Nonetheless, it has become almost standard to include his suggestion, almost as an after thought, in discussion sections throughout MIP literature. Inclusion of the recommendation of a practical therapeutic application of the Velten MIP in nearly all articles would lead one to believe that this is an important area for study, however, no one has attempted to explore the actual utility of the idea.

In order to begin the investigation of using the Velten MIP as a therapeutic tool, one must start with a basic question. What effect does mood induction have on various
psychological symptomology? If MIPs are to be used in a therapeutic setting, the effect of MIPs on psychological symptoms typically found in session should be examined. To date, no one has attempted to examine this issue. In general, participants are used without symptoms being assessed. When an attempt is made at screening, individuals are eliminated when they have certain symptoms, usually measured by elevated depression or anxiety scores. Only Zoellner and colleagues (2003, 2004) specifically used a symptomatic group, but they did so with the purpose of examining the nature of PTSD, not to study the effect of the mood induction on the symptoms or the disorder. This still does not answer the question regarding the effect of mood induction on psychological symptomology. If no effects are found, the four-decade-old question is moot. If effects are found, however, then development of a valuable tool may begin.

The most common moods evaluated in MIP literature are depression, anxiety, and hostility. These moods are, however, only a small section of the range of symptoms that may be faced in a therapy session. To limit this exploration to only a few symptoms, specifically to only a few moods, would reduce the utility of this first very important step. To that end, the Symptom Check List (SCL-90-R) (Derogatis, 1977) was used. This instrument assesses for a broad spectrum of issues including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The SCL-90-R has the sensitivity to assess for each of these areas as well as having the sensitivity to measure test-retest change after an intervention (Derogatis, 1994). If the Velten MIP is shown to have an effect on a variety of symptoms, the utility and value of the Velten MIP as a therapeutic tool will be expanded greatly. Although there are a number of concerns related to the Velten MIP in
the laboratory, it has been shown to be effective in changing mood, and the use of the Velten MIP in treatment makes research oriented issues such as demand characteristics less important and possibly even helpful in the therapeutic process.

So, what effect will mood induction have on psychological symptoms? The first hypothesis states that as mood increases due to the elated mood induction procedure, severity of psychological symptoms will be reduced. This will hold true for individual scales such as depression or interpersonal sensitivity as well as the global severity score also provided by the SCL-90-R (Derogatis, 1977). The second hypothesis states that as mood decreases due to the depressed mood induction procedure, severity of psychological symptoms will be increased, both on individual scales and the global scale. The third hypothesis suggests that it is unlikely that the impact will be equal, and one mood induction may have a greater effect than the other. As people are generally in a more positive mood, greater mood changes have been shown with the depression induction. Thus, it is likely that the negative mood induction will have a greater impact. A fourth hypothesis asserts that a neutral mood induction will have no effect on psychological symptoms.

In summary, this study attempts to begin the process of validating the Velten MIP as a therapeutic tool by taking the first step of examining the effect of the Velten MIP on psychological symptoms. It is surmised that the Velten MIP will change psychological symptoms, thus opening the door for further research and development.
METHODOLOGY

Participants

A total of 314 students participated. Students were recruited from the Department of Psychology subject pool and received 1.5 credits in their respective classes for participation in this experiment. Participants signed up for a study entitled "Mood States," which had received approval from the UNLV IRB.

Participants were randomly assigned to one of three conditions (depressed, neutral, and elated) using a random number generator to sort the experimental packets. Thirty packets including 10 of each condition (depressed, neutral, and elated) were randomly sorted and passed out. When the last of the thirty packets had been used, they were again randomly sorted and passed out until the total number of participants had been tested. After 300 participants had been tested, sign ups were stopped, and the residual participants were tested resulting in a total of 314 participants.

As each person came in the room, they received a packet with three folders, one with the pretest measures, one with the Velten statements, and one with the posttest measures. They were asked not to start until everyone had arrived and had been seated. Two of the folders had three pretest and posttest measures each (frequency questions,
MAACL-R, and SCL-90-R). The order of the three measures was randomly sorted for both pretest and posttest to minimize fatigue effects.

Demographic information including age and gender was also collected at pretest only. The mean age was 19.99 years old with a range of 18-50 years and a standard deviation of 3.46. For the elated condition, the mean age was 19.97 with a standard deviation of 4.41. For the depressed condition, the mean age was 20.16 with a standard deviation of 3.46. For the neutral condition, the mean age was 19.83 with a standard deviation of 2.17. The overall sample included 124 male participants (39.5%) and 190 female participants (60.5%). The depressed condition consisted of 105 participants, 40 male (38%) and 65 female (62%). The neutral condition consisted of 104 participants, 45 male (43%) and 59 female (57%). The elated condition consisted of 105 participants, 38 male (36%) and 67 female (64%).

A power analysis using the computer program G•Power was used to determine the required number of participants given three conditions and a medium effect size (Buchner, Faul, & Erdfelder, 1997). The power of a test is the probability of rejecting the null hypothesis when it actually is false. Power can be affected by $\alpha$ (the probability of Type I error), the hypothesis being tested, the sample size, and the test being used. According to Cohen’s (1988) conventions, a medium effect size ($d = .50$) was chosen. Westermann and colleagues (1996) recommended using a medium or large effect size, and for this study, the more conservative approach was used. A medium effect size is one that would be apparent to an intelligent viewer. G•Power informs you how large the power of your test actually is given the calculated sample size, or alternatively, given the desired power level, the number of conditions, and the chosen effect size, G•Power will
calculate the required number of subjects per group. For three conditions with a medium
effect size, the total required number of participants calculated was 252 \((F(2, 249) =
3.0321)\), or 84 per condition, with a resulting power of 0.95. This sample more than met
that recommendation with a total of 314 participants, indicating that if the null hypothesis
was rejected, the likelihood that this is not due to chance is 95%.

Procedure

Data were collected in a self-report, pretest-posttest format. The questionnaires
consisted of two standardized instruments: the SCL-90-R and the MAACL-R. Frequency
questions regarding certain behaviors of the participants over the last week were also
included. A detailed description of these three measures can be found below. The
demographics of gender and age were asked at pretest only. A random number program
was used to order 30 packets of the three conditions (depressed, neutral, and elated), 10
each. Packets remained in this order and were used to randomly assign participants to
one of the three conditions as they sequentially entered the testing area. The conditions
were an elated mood induction, a depressed mood induction, and a neutral mood
induction. This condition assignment was kept from the experimenter in order to reduce
experimenter bias. The order of presentation of the three measures (behavioral
frequencies, the SCL 90-R, and the MAACL-R) was randomly generated during
questionnaire construction in an attempt to reduce the possible fatigue effect of
participants always completing one instrument last.

The procedure was conducted in groups varying in size from three to 30
participants in a classroom setting. There were 55 groups run in the course of the
research. Sinclair and colleagues (1994) indicated that group administration increased efficiency without threats to validity. They used groups ranging in size from 23 to 50 participants. Sinclair and colleagues (1997) show that MIPs can be used successfully in a group setting thus reducing the problem of experimenter bias, as the experimenter remains blind to the condition that each participant is assigned to. Group size ranged from 10 to 50 participants. Bates, Thompson, and Flanagan (1999) compared group and individual administration and found both to be effective. They used a group size of 40.

Minimal explanation of the experiment was offered to the participants by the experimenter in order to reduce demand characteristics. The instructions to the participants prior to their answering the questionnaires were restricted to telling participants that they would be completing questions and reading statements. When all participants had been seated with their packet of three folders (numbered 1, 2, and 3), they were asked to complete the questionnaires in folder one. They were also asked to return the questionnaires to folder one after completion so that the experimenter would know when everyone in the group was finished and ready to move to the next step.

After all participants had finished answering the pretest questionnaires, they then completed the original Velten procedure contained in folder two. By way of broad overview, the Velten procedure essentially involves reading a set of instructions directing the participant to be open to the upcoming mood induction followed by 60 statements reflective of the mood to be induced, in this case, depressed, neutral, or elated, depending on condition followed by a three minute incubation period.

Folder two included the instructions asking participants to be open to the statements as well as the 60 statements listed one per page. The participants were given
approximately five minutes to read the instructions, and then they were asked to begin reading the statements at a rate of 20 seconds per statement. The experimenter, using a stopwatch, cued them verbally as to when to turn each page thus revealing the next statement. This process continued until all 60 statements had been read.

The final page included the incubation period instructions shown in Appendix IV. The incubation period lasted three minutes during which the participants in the depressed and elated conditions were asked to focus on building the mood described by the statements they had just read. The neutral condition was asked to simply relax. The instructions for all three groups were presented via the incubation instruction page. The intent of the incubation manipulation was to help participants adopt and build on the mood induced by the Velten manipulation for each condition.

Following the incubation period, the participants were asked to open folder three. The SCL-90-R, the MAACL-R, and the frequency questions were re-administered, using the same randomization of order of presentation procedure as was used during the pretest period prior to the various mood inductions. The participants were again asked to return the questionnaires to the folder upon completion.

Upon completion of the post-test questionnaires, all participants were asked to read, or reread in the case of the elation induction condition, the set of elated statements in an attempt to remediate any sustained depressed or other negative mood effects. Cairns and Norton (1988) successfully remediated induced moods through the use of opposite statements.

As a debriefing, the participants were then given a more informed but again brief explanation of the experiment. They were told only that the research involved an
exploration of the effect of mood on general symptoms. A more detailed explanation of the research was not given at this time so as to minimize participants sharing of information with possible future participants. Please see Appendix VII for a detailed presentation of the debriefing information.

To summarize, the procedure occurred as follows. The participants entered the room and were given one of 30 randomly ordered packets consisting of three folders. They were asked to read and sign the consent form then sit quietly without opening the three folders. When all participants had arrived and were seated, the group was asked to open the first folder, complete the randomly ordered questionnaires (frequency questions, SCL-90-R, MAACL-R, and demographics), and return them to the folder upon completion. When all participants were finished with the pretest measures, they were asked to open the second folder and read the ensuing instructions and wait for the direction to turn the page. Participants were then cued by the experimenter to turn the page every 20 seconds thus revealing another of the 60 statements. The participants then read the incubation instructions and focused for three minutes. They were then asked to return the paper to the second folder, open the third folder and complete the randomly ordered questionnaires, returning them to the third folder upon completion. As the experimenter was blind to which condition each participant was in, all participants then were asked to read a set of elated statements to remediate any lingering negative or depressed feelings. The participants were given a copy of the debriefing statement and released. The entire session lasted for approximately 90 minutes.
Pretest and Posttest Measures

*SCL-90-R*

The Symptom Check List (SCL-90-R) (Derogatis, 1977) was used to assess for psychological symptoms, including somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Somatization refers to “distress arising from perceptions of bodily dysfunction” and consists of 12 items (Derogatis, 1977, p. 9). The obsessive-compulsive subscale focuses on thoughts, impulses, and actions incessant and unwanted and consists of 10 items. The interpersonal sensitivity subscale looks at “feelings of inadequacy and inferiority” especially when compared to others and consists of nine items (Derogatis, 1977, p. 10). The depression subscale measures clinical depression and consists of 13 items. The anxiety subscale looks at general feelings and somatic complaints of anxiety and consists of 10 items. The hostility subscale includes thoughts, feelings, and actions related to anger, and consists of six items. The phobic anxiety subscale examines an inappropriate fear reaction to a specific stimulus and consists of seven items. The paranoid ideation subscale describes paranoid disordered thinking and consists of six items. The psychoticism subscale refers to a “graduated continuum from mild interpersonal alienation to dramatic psychosis” (Derogatis, 1977, p. 11). The subscales were defined based on clear criteria from the literature and were individually validated. The SCL-90-R also provides a global index, the Global Severity Index (GSI), “the best single indicator of the current level or depth of the disorder” (Derogatis, 1977, p. 12). The GSI is calculated by using the total of all 90 items.
The SCL-90-R was written at a sixth grade level and takes between 12-15 minutes to complete (Derogatis, 1977). Instructions are minimal and are included on the form. The test can be administered via paper and pencil or online. The SCL-90-R can also be used with adolescents as young as 13 years old. Todd, Deane, and McKenna (1997) validated that use of the SCL-90-R with college students. Norms are provided for psychiatric outpatients, nonpatients, psychiatric inpatients, and adolescent nonpatients (ages 13-19). For the purposes of this research, the nonpatient norms and the adolescent norms were used depending on age. The instructions ask the participant to rate symptoms over the past seven days, however, the author indicated that other time periods may be used depending on the condition or context of study (Derogatis, 1977).

Derogatis (1977) cited internal consistency (coefficient α) scores ranging from .77 to .90 for the various subscales based on two studies. The SCL-90-R has high test-retest reliabilities, ranging from .68 to .90 based on two studies (Derogatis, 1977). The SCL-90-R does not appear to be influenced by practice effects associated with repeated administrations. Convergent-discriminant validity has been examined in association with the MMPI, the Crown-Crisp Experiential Index, the Center of Epidemiologic Studies Depression Scale, the Hamilton Rating Scale, the Social Adjustment Scale-Self-Report, the Raskin Depression Screen, the General Health Questionnaire, the Young Adult Self-Report, and the Present State Examination.

The instructions for the SCL-90-R read in part “HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU” (Derogatis, 1977. test questionnaire, p. 2). The instruction is again repeated as “HOW MUCH WERE YOU DISTRESSED BY:” above the list of problems on both page two and three. The participant is offered a five
point discrete scale including not at all, a little bit, moderately, quite a bit, and extremely. The instructions suggest that the SCL-90-R is a measure of perceived distress, however, the author, while recognizing this aspect, has shown that it can be used as a general measure of symptomology (Derogatis, 1977). The degree to which one is bothered by a symptom becomes a reflection of the intensity or depth of the symptom and thereby increases the likelihood of a significant t score suggesting the true presence of the corresponding dimension.

**MAACL-R**

The Multiple Affect Adjective Checklist – Revised (MAACL-R) (Lubin, & Zuckerman, 1999) is a measure of affect and moods. The MAACL-R requires participants to read through a 132-item list of emotionally related adjectives and check the ones that apply to how they were currently feeling. For simplicity, the participant need only put a mark next to the adjective being selected. There is no limit to how many adjectives may be selected, however, a form with no items or more than 93 items checked is considered invalid. The median reading grade level for the MAACL-R is sixth grade with 90% of the adjectives falling at or below the eighth grade reading level. The MAACL-R includes norms by gender for each of the following groups: adults, adolescents, college students, elderly, Air Force recruits, and community college students. As the sample used for this research included college students, those specific norms were used.

Four subscales can be derived from the MAACL-R, including anxiety, depression, hostility, and positive affect. The following adjectives loaded on the following subscales. Anxiety included afraid, fearful, frightened, impatient, nervous,
panicky, shaky, tense, timid, and worrying. Depression included alone, destroyed, discouraged, forlorn, lonely, lost, miserable, rejected, sad, suffering, sunk, and tormented. Hostility included angry, annoyed, complaining, critical, cross, cruel, disagreeable, disgusted, enraged, furious, hostile, incensed, irritated, mad, and mean. Positive affect included affectionate, free, friendly, glad, good, good-natured, happy, interested, joyful, loving, peaceful, pleased, pleasant, polite, satisfied, secure, steady, tender, understanding, warm, and whole. The MAACL-R has both state and trait forms. For the purpose of this research, the state form was used, as the focus was on how the participants were feeling at the moment both before and after the mood induction. Please refer to Appendix V for examination of the form.

The state form of the MAACL-R is expected to have low test-retest reliability due to the nature of what is being assessed. The state affect form tests for how one is feeling right now, and affect can change significantly enough to not be reliable over time. Reported retest reliabilities support this idea (Lubin, & Zuckerman, 1999). Reported internal reliabilities (coefficient α) ranged from .62 to .95 on various populations for the different subscales (Lubin, & Zuckerman, 1999). The MAACL-R showed high convergent and divergent validity with the following measures: the State-Trait Personality Inventory, the Affect Balance Scale, the Positive Affect and Negative Affect Schedule, and the Profile of Mood States. Additionally, the MAACL-R is frequently used as a measure of change before and after a manipulation (Lubin, & Zuckerman, 1999).

The MAACL-R was used as a manipulation check, as recommended by Schare and Lisman (1984) and Kenealy (1986). This was the same manipulation check used by
Velten (1968), and it is commonly used as a manipulation check with mood induction procedures. The purpose of the manipulation check is to show that mood has indeed been changed by the induction procedure in the desired direction.

**Frequency Questions**

A set of 10 frequency questions was included to examine participant bias. The intent of using these questions was to determine whether there were differential changes in the answers provided by the participants from pre- to post-test as a function of mood condition. If the answers did not change with mood, then the conclusion that participants were attempting to answer honestly might be drawn. The questions asked for information that could be easily counted. Questions included: how many headaches have you had, how many times have you thought about suicide, how many alcoholic drinks have you had, how many stomachaches have you had, how many panic attacks have you had, how many times have you fainted, how many verbal fights have you been in, how many physical fights have you been in, how many nights did you have trouble sleeping, and how many mornings did you wake up late. Participants were asked to count the frequency of each occurrence over the last week. Formatted questions may also be viewed in Appendix VI.

**Velten Procedure**

As noted above there were three mood conditions used in the research. The three moods induced were depressed, elated, and neutral. Each condition used the 60 original Velten (1968) statements with one change. The statement that refers to the Viet Nam War was changed to read Iraq War. This maintains the original set of statements while
updating them to a similar world condition. The instructions and statements used in the three mood conditions can be found in Appendices I through III.
CHAPTER 4

RESULTS

Frequency Questions

The frequency questions were used to detect possible participant bias. The participants were asked to count how many times an event occurred in the past week, and answers were collected both as a pretest and as a posttest measure. The data were initially subjected to multivariate analyses in order to examine overall group differences or changes. This included two expectations. First, that the groups themselves would not be different from each other in the beginning, and second, that the groups would not show a change between pretest and posttest regardless of mood condition. Raw scores were used for the calculations for each participant. The means and standard deviations for the frequency questions listed by condition can be found in Table 1.

A repeated measures MANOVA was used to test for differences between and within the three induction conditions on the ten frequency questions. No differences were found between participants using pretest data with regard to condition ($F_{(2,311)} = 1.144, p < ns$). Essentially the participants all started out the same regardless of condition and were not subject to bias through assignment to conditions. Unexpectedly, however, there was a significant overall difference found between administration of the pretest and posttest frequency questions ($F_{(1,2)} = 8.701, p < .003$). The three groups as a
whole did change significantly over time. To summarize, there were no differences to start between the three conditions, but the conditions changed from time one to time two. The first expectation that the conditions would start out the same was seen, however, the second expectation that the conditions would remain the same at posttest did not hold out.

Table 1

Comparison of Means and Standard Deviations for Frequency Questions by Condition and Time

<table>
<thead>
<tr>
<th>Frequency Questions</th>
<th>Elated Condition</th>
<th>Depressed Condition</th>
<th>Neutral Condition</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1.50 (1.64)</td>
<td>1.69 (3.30)</td>
<td>1.66 (2.15)</td>
<td>1.62 (2.46)</td>
</tr>
<tr>
<td>Post</td>
<td>1.43 (1.55)</td>
<td>1.92 (3.34)</td>
<td>1.83 (2.66)</td>
<td>1.73 (2.62)</td>
</tr>
<tr>
<td>Suicidal Thoughts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>.23 (.84)</td>
<td>.09 (.34)</td>
<td>.13 (.60)</td>
<td>.15 (.63)</td>
</tr>
<tr>
<td>Post</td>
<td>.18 (.73)</td>
<td>.24 (.66)</td>
<td>.13 (.61)</td>
<td>.18 (.67)</td>
</tr>
<tr>
<td>Alcoholic Drinks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1.96 (3.72)</td>
<td>3.72 (6.92)</td>
<td>2.69 (3.71)</td>
<td>2.79 (5.05)</td>
</tr>
<tr>
<td>Post</td>
<td>1.93 (3.71)</td>
<td>3.96 (6.99)</td>
<td>2.85 (4.09)</td>
<td>2.91 (5.20)</td>
</tr>
<tr>
<td>Stomachaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1.51 (1.89)</td>
<td>1.21 (1.40)</td>
<td>.97 (1.35)</td>
<td>1.23 (1.58)</td>
</tr>
<tr>
<td>Post</td>
<td>1.40 (1.84)</td>
<td>1.36 (1.45)</td>
<td>.93 (1.32)</td>
<td>1.23 (1.56)</td>
</tr>
<tr>
<td>Panic Attacks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>.23 (.70)</td>
<td>.23 (.75)</td>
<td>.20 (1.04)</td>
<td>.22 (.84)</td>
</tr>
<tr>
<td>Post</td>
<td>.21 (.70)</td>
<td>.28 (.81)</td>
<td>.19 (.87)</td>
<td>.23 (.80)</td>
</tr>
<tr>
<td>Fainted</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
<td>.00 (.00)</td>
</tr>
<tr>
<td>Post</td>
<td>.00 (.00)</td>
<td>.02 (.20)</td>
<td>.00 (.00)</td>
<td>.01 (.11)</td>
</tr>
<tr>
<td>Verbal Fights</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1.46 (1.86)</td>
<td>1.16 (1.74)</td>
<td>1.23 (1.66)</td>
<td>1.28 (1.76)</td>
</tr>
<tr>
<td>Post</td>
<td>1.29 (1.60)</td>
<td>1.41 (1.95)</td>
<td>1.23 (1.64)</td>
<td>1.31 (1.73)</td>
</tr>
<tr>
<td>Physical Fights</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>.07 (.51)</td>
<td>.09 (.40)</td>
<td>.03 (.17)</td>
<td>.06 (.38)</td>
</tr>
<tr>
<td>Post</td>
<td>.08 (.51)</td>
<td>.10 (.50)</td>
<td>.02 (.14)</td>
<td>.07 (.42)</td>
</tr>
<tr>
<td>Trouble Sleeping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>2.01 (2.11)</td>
<td>1.59 (1.99)</td>
<td>1.88 (2.10)</td>
<td>1.83 (2.07)</td>
</tr>
<tr>
<td>Post</td>
<td>1.91 (2.11)</td>
<td>1.92 (2.04)</td>
<td>2.03 (2.22)</td>
<td>1.96 (2.12)</td>
</tr>
<tr>
<td>Wake Late</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1.92 (2.05)</td>
<td>1.53 (1.69)</td>
<td>1.67 (1.63)</td>
<td>1.71 (1.80)</td>
</tr>
<tr>
<td>Post</td>
<td>1.88 (2.02)</td>
<td>1.69 (1.76)</td>
<td>1.62 (1.62)</td>
<td>1.73 (1.80)</td>
</tr>
</tbody>
</table>
Due to the unexpected result that the conditions changed as a whole over time, repeated measure ANOVAs were conducted in order to determine how each group changed individually. For the elated condition, there was a significant difference between pretest and posttest ($F_{(1,104)} = 7.06, p < .009$). For the depression condition, there again was a significant difference between pretest and posttest ($F_{(1,104)} = 23.12, p < .0001$). For the neutral condition, however, there was not a significant change ($F_{(1,103)} = 2.36, p < ns$).

In response to finding significant differences between pretest and posttest data on the frequency questions for both the elated and the depressed conditions, further analyses were conducted in the form of $t$ tests. Table 2 contains the $t$ scores and the significance levels for all ten of the frequency questions listed by group. Those $t$ scores with a significance level of $p < .05$ are indicated in bold.

The elated condition included two questions that were found to significantly differ from time one to time two, namely, “How many stomachaches have you had?” ($p < .05$) and “How many verbal fights have you been in?” ($p < .04$). For both of these questions, posttest answers were significantly less than pretest answers.

The depressed condition contained six questions that were significantly different from pretest to posttest. These included “How many headaches have you had?” ($p < .0001$), “How many times have you thought about suicide?” ($p < .001$), “How many alcoholic drinks have you had?” ($p < .01$), “How many stomachaches have you had?” ($p < .05$), “How many verbal fights have you been in?” ($p < .0001$), and “How many nights did you have trouble sleeping?” ($p < .0001$). For all six of the significantly changed questions, scores increased on the posttest. The elated condition was not significantly
different over the ten frequency questions as a group or for the ten frequency questions individually.

Table 2
Comparison of Pretest-Posttest t scores and Significance for Mean Frequency Questions by Condition

<table>
<thead>
<tr>
<th>Frequency Questions</th>
<th>Elated t score</th>
<th>p &lt;</th>
<th>Depressed t score</th>
<th>p &lt;</th>
<th>Neutral t score</th>
<th>p &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td>1.81</td>
<td>.07</td>
<td>3.79</td>
<td>.0001</td>
<td>1.60</td>
<td>.11</td>
</tr>
<tr>
<td>Suicide</td>
<td>1.68</td>
<td>.10</td>
<td>3.28</td>
<td>.001</td>
<td>1.00</td>
<td>.32</td>
</tr>
<tr>
<td>Alcoholic Drinks</td>
<td>1.75</td>
<td>.08</td>
<td>2.84</td>
<td>.01</td>
<td>.88</td>
<td>.38</td>
</tr>
<tr>
<td>Stomachaches</td>
<td>2.03</td>
<td>.05</td>
<td>2.03</td>
<td>.05</td>
<td>.85</td>
<td>.40</td>
</tr>
<tr>
<td>Panic Attacks</td>
<td>.71</td>
<td>.48</td>
<td>.84</td>
<td>.40</td>
<td>.38</td>
<td>.71</td>
</tr>
<tr>
<td>Fainted</td>
<td>A</td>
<td>A</td>
<td>1.00</td>
<td>.32</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Verbal Fights</td>
<td>2.04</td>
<td>.04</td>
<td>3.68</td>
<td>.0001</td>
<td>.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Physical Fights</td>
<td>1.00</td>
<td>.32</td>
<td>.71</td>
<td>.48</td>
<td>1.00</td>
<td>.32</td>
</tr>
<tr>
<td>Trouble Sleeping</td>
<td>1.32</td>
<td>.19</td>
<td>4.18</td>
<td>.0001</td>
<td>1.68</td>
<td>.10</td>
</tr>
<tr>
<td>Wake Late</td>
<td>.45</td>
<td>.66</td>
<td>1.91</td>
<td>.06</td>
<td>1.75</td>
<td>.08</td>
</tr>
</tbody>
</table>

A Unable to compute: scores were all zero.

Bold numbers: significance p < .05.

The MANOVA for the frequency questions showed that the answers changed over time. The individual ANOVAs showed that the elated and depressed conditions
changed from time one to time two. Subsequent t tests showed that eight of the thirty questions (three conditions by ten questions) change significantly from pretest to posttest, while 22 of the posttest answers did not differ significantly from the pretest answers.

Table 3

<table>
<thead>
<tr>
<th>Frequency Question</th>
<th>Elated Condition</th>
<th>Depressed Condition</th>
<th>Neutral Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td>.97</td>
<td>.98</td>
<td>.93</td>
</tr>
<tr>
<td>Suicidal Thoughts</td>
<td>.94</td>
<td>.72</td>
<td>.99</td>
</tr>
<tr>
<td>Alcoholic Drinks</td>
<td>.99</td>
<td>.99</td>
<td>.90</td>
</tr>
<tr>
<td>Stomachaches</td>
<td>.95</td>
<td>.86</td>
<td>.94</td>
</tr>
<tr>
<td>Panic Attacks</td>
<td>.92</td>
<td>.73</td>
<td>.98</td>
</tr>
<tr>
<td>Fainted</td>
<td>A</td>
<td>.98</td>
<td>A</td>
</tr>
<tr>
<td>Verbal Fights</td>
<td>.89</td>
<td>.94</td>
<td>.95</td>
</tr>
<tr>
<td>Physical Fights</td>
<td>.98</td>
<td>.83</td>
<td>.81</td>
</tr>
<tr>
<td>Trouble Sleeping</td>
<td>.94</td>
<td>.92</td>
<td>.92</td>
</tr>
<tr>
<td>Wake Late</td>
<td>.86</td>
<td>.89</td>
<td>.98</td>
</tr>
</tbody>
</table>

A. The correlation cannot be computed because standard error of difference is 0.

All correlations were significant at the $p < .0001$ level.

Analyses of variance are used to examine how much one data set differs from another. Correlations are used to examine similarity and predictability. Subsequent correlations were computed to examine how similar pretest and posttest answers were by group. These correlations are shown in Table 3. While some variability in the strength of the correlations occurs in various instances, Table 3 does show that generally these correlations were quite high. Indeed, all correlations were significant at the $p < .0001$
level, which suggests that the answers given by the participants to the frequency questions at both pretest and posttest were similar.

In summary, the frequency scores were evaluated as a whole and found to be the same at pretest for all three conditions. The overarching analysis showed changes overall from pretest to posttest, however. Univariate analyses for each group narrowed that change to the elated and the depressed conditions. Further analyses refined the scope of the changes to two questions for the elated condition and six questions for the depressed condition. These results were unexpected as it was predicted that there would be no change from pretest to posttest.

MAACL-R

The MAACL-R was used as a manipulation check, or to confirm that the mood induction had been effective in changing mood. The MAACL-R was given as a pretest and as a posttest measure surrounding the mood induction procedure. The data obtained in this research were initially subjected to multivariate analyses in order to examine overall group differences or changes. This included two expectations. First, that the groups themselves would not be different from each other in the beginning, and second, that the groups would show a change in mood over time.

Raw scores obtained during the pretests and posttests were separately summed on the MAACL-R to produce subscale scores for anxiety, depression, hostility, and positive affect (Cronbach’s \( \alpha = .93 \) pretest and post-test). These scores were then converted to \( t \) scores according to the total number of responses the participants had made on the checklist-type measure (for males: 1-34, 35-43, or 44-92 items checked; for females: 1-
32, 33-45, or 46-92 items checked) and according to their gender and college student status. The pretest and posttest t score means and standard deviations for the MAACL-R are shown in Table 4 by condition.

Table 4

Comparison of Means and Standard Deviations for MAACL-R Subscale t scores by Condition and Time

<table>
<thead>
<tr>
<th>MAACL-R Subscale</th>
<th>Elated Condition</th>
<th>Depressed Condition</th>
<th>Neutral Condition</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>41.49 (7.28)</td>
<td>39.47 (6.75)</td>
<td>41.48 (7.13)</td>
<td>40.81 (7.28)</td>
</tr>
<tr>
<td>Post</td>
<td>39.12 (8.04)</td>
<td>43.54 (9.21)</td>
<td>39.88 (7.13)</td>
<td>40.85 (8.04)</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>43.11 (6.88)</td>
<td>42.47 (6.40)</td>
<td>43.75 (7.58)</td>
<td>43.11 (6.88)</td>
</tr>
<tr>
<td>Post</td>
<td>41.71 (8.76)</td>
<td>49.40 (10.94)</td>
<td>42.76 (6.98)</td>
<td>44.63 (8.76)</td>
</tr>
<tr>
<td>Hostility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>42.12 (5.97)</td>
<td>42.28 (5.64)</td>
<td>43.24 (6.65)</td>
<td>42.54 (5.97)</td>
</tr>
<tr>
<td>Post</td>
<td>41.48 (7.23)</td>
<td>48.49 (8.23)</td>
<td>43.12 (5.92)</td>
<td>44.37 (7.23)</td>
</tr>
<tr>
<td>Positive Affect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>32.88 (13.07)</td>
<td>33.16 (12.92)</td>
<td>33.74 (13.57)</td>
<td>33.26 (13.07)</td>
</tr>
<tr>
<td>Post</td>
<td>39.98 (14.69)</td>
<td>23.89 (12.29)</td>
<td>31.09 (12.99)</td>
<td>31.65 (14.69)</td>
</tr>
</tbody>
</table>

A repeated measures MANOVA was used to test for differences between and within the three induction conditions on the four subscales of anxiety, depression, hostility, and positive affect. No differences were found between participants using pretest data with regard to condition ($F_{(2,311)} = .247, p < ns$). Essentially the participants all started out the same regardless of condition and were not subject to bias through assignment to conditions. Overall there was a significant difference found between administration of the pretest and posttest MAACL-R subscales ($F_{(1,2)} = 3.86, p < .05$).
The three groups as a whole changed significantly over time. To summarize, there were no differences to start between the three groups, and each of the three groups changed from time one to time two.

After testing to determine that the conditions started out the same and then changed over time, the mean data obtained were subjected to repeated measure ANOVAs in order to verify that mood had changed in the intended direction for each of the conditions. The expectation was that mood would change with the depressed and elated conditions but not with the neutral condition. Specifically, it was expected that anxiety, depression, and hostility t scores would increase and positive affect t scores would decrease for the depressed condition. Anxiety, depression, and hostility t scores were predicted to decrease and positive affect t scores to increase in the elated condition. No changes were anticipated in the neutral condition. In each analysis the mood induction condition served as the independent variable and anxiety, depression, hostility, and positive affect served as the multiple dependent variables.

For the elated condition, it was anticipated that anxiety, depression, and hostility t scores would go down, and positive affect t scores would go up. An examination of Figure 1, which plots the average t score separately for the pretest and posttest data, shows this pattern, with a minimal decrease for anxiety, depression, and hostility and an increase for positive affect. However, there was no significant change on the four subscales between administration time one and time two, although there was a strong positive trend in the data ($F_{(1,104)} = 2.95, p < .08$) (Cronbach’s $\alpha = .92$ pretest, .94 posttest). For anxiety, depression, and hostility subscales, t scores decreased, and for positive...
affect, t scores increased. Although the results did not reach significance, the change was in the expected direction.

![Figure 1. Elated condition pretest and posttest subscale mean t-scores on the MAACL-R.](image)

For the depressed condition, it was anticipated that anxiety, depression, and hostility t scores would go up, and positive affect t scores would go down. An examination of Figure 2, which plots the average t score separately for the pretest and posttest data, clearly shows this pattern, with an increase for anxiety, depression, and hostility and a decrease for positive affect. With regard to the depressed condition, there was a significant change on the four subscales between administration time one and time two ($F_{(1,104)} = 23.45, p < .0001$) (Cronbach’s $\alpha = .92$ pretest, .94 post-test). For anxiety,
depression, and hostility subscales, t scores increased, and for positive affect, t scores decreased. The change on the subscales was significant in the expected direction.

Figure 2. Depressed condition pretest and posttest subscale mean t scores on the MAACL-R.

In the third condition, the neutral condition, it was expected that there would be no change from pretest to posttest for any of the subscales (anxiety, depression, hostility or positive affect). Figure 3 shows a pattern of change, however, with a decrease in scores over time on anxiety, depression, and positive affect and little relative change on hostility. With regard to the neutral condition, there was a significant change on the four subscales between administration time one and time two ($F_{(1,103)} = 14.17, p < 0.001$) (Cronbach's $\alpha = .94$ pretest and post-test). Figure 3, which plots the average t score
separately for the pretest and posttest data, demonstrates that this significant change was similar to the changes produced in the elated mood condition for anxiety and depression and similar to the change produced in the depressed mood condition for positive affect. Thus, while the neutral mood induction did induce mood changes it did not do so in any consistent pattern.

Figure 3. Neutral condition pretest and posttest subscale mean t scores on the MAACL-R.

Multivariate analyses were used to show that the three conditions started out the same but changed over time, and they did. Univariate analyses were used to examine each condition’s individual change, and the elated condition was shown to change as expected, but not significantly, while the depressed and neutral conditions did change.
significantly. Subsequent t tests were then used to determine if there was significant change on each of the four individual scales (anxiety, depression, hostility, and positive affect) for each condition. The t scores and significance levels are listed in Table 5. Those t scores with a significance level of \( p < .05 \) are indicated in bold.

An examination of the data in Table 5 provides a clearer picture of how each of the individual subscales on the MAACL-R changed over time. For the elated condition, anxiety, depression, and positive affect changed significantly from pretest to posttest in the expected direction. Hostility scores, however, did not result in a significant change. For the depressed condition, the changes from pretest to posttest were significant for all four subscales and in the expected direction. As mentioned previously, the neutral condition changed in a mixed way, with significant changes on anxiety and depression mirroring the elated condition, and a significant change on the positive affect scale paralleling the depressed condition.

Table 5

Comparison of Pretest-Posttest t scores and Significance for the MAACL-R by Condition

<table>
<thead>
<tr>
<th>MAACL-R Subscales</th>
<th>Elated</th>
<th></th>
<th>Depressed</th>
<th></th>
<th>Neutral</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t score</td>
<td>( p &lt; )</td>
<td>t score</td>
<td>( p &lt; )</td>
<td>t score</td>
<td>( p &lt; )</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3.63</td>
<td>.0001</td>
<td>6.01</td>
<td>.0001</td>
<td>2.49</td>
<td>.02</td>
</tr>
<tr>
<td>Depression</td>
<td>2.44</td>
<td>.02</td>
<td>8.02</td>
<td>.0001</td>
<td>1.95</td>
<td>.05</td>
</tr>
<tr>
<td>Hostility</td>
<td>1.12</td>
<td>.26</td>
<td>8.90</td>
<td>.0001</td>
<td>.22</td>
<td>.82</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>8.09</td>
<td>.0001</td>
<td>9.09</td>
<td>.0001</td>
<td>2.60</td>
<td>.01</td>
</tr>
</tbody>
</table>

Bold numbers: significance \( p < .05 \).
In summary, an examination of the MAACL-R showed that the participants in the three conditions started out the same. When tested together, the three conditions showed change over time. They were then tested individually to determine if the changes were in the desired direction. For the elated condition, the change was in the desired direction but not significant. For the depressed condition, the change was in the desired direction and significant. For the neutral condition, the change was mixed and significant. The mixed change involved decreases in anxiety and depression as for the elation condition and a decrease in positive affect as for the depression condition, although the separate effects were modest in magnitude. Each of the subscales was then examined. For the elated condition, three subscales showed significant change with all four moving in the expected direction. For the depressed condition, all of the scales showed significant change as expected. For the neutral condition, three scales showed significant change in a mixed pattern. Overall, the MAACL-R results indicated that the mood induction conditions were effective in changing mood in the direction intended by the induction.

SCL-90-R

The final set of analyses refers to the SCL-90-R. All pretest and posttest questionnaires were randomly ordered. Assignment of participants to conditions was randomly ordered. Experimenter bias was controlled in part by keeping the experimenter blind to participant condition during testing. Multivariate and univariate analyses of the MAACL-R indicated that the participants’ moods across conditions started out the same, changed over time, and primarily changed in the directions intended by the mood conditions.
induction condition. All of these factors lend strength to the face validity of the results obtained in this research for the SCL-90-R.

Table 6
Comparison of Means and Standard Deviations for SCL-90-R Subscale and GSI t scores by Condition and Time

<table>
<thead>
<tr>
<th>SCL-90-R Subscale</th>
<th>Elated Condition</th>
<th>Depressed Condition</th>
<th>Neutral Condition</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Somatization</td>
<td>55.59 (10.32)</td>
<td>52.82 (10.54)</td>
<td>52.38 (11.47)</td>
<td>53.60 (10.84)</td>
</tr>
<tr>
<td></td>
<td>49.27 (11.28)</td>
<td>53.62 (11.44)</td>
<td>49.64 (11.30)</td>
<td>50.85 (11.48)</td>
</tr>
<tr>
<td>Obsessive-Compulsive</td>
<td>57.94 (11.45)</td>
<td>56.59 (10.35)</td>
<td>57.17 (11.03)</td>
<td>57.24 (10.93)</td>
</tr>
<tr>
<td></td>
<td>50.16 (12.42)</td>
<td>57.64 (12.08)</td>
<td>53.94 (12.05)</td>
<td>53.91 (12.53)</td>
</tr>
<tr>
<td>Interpersonal Sensitivity</td>
<td>53.90 (11.88)</td>
<td>51.46 (10.79)</td>
<td>53.40 (11.09)</td>
<td>52.92 (11.28)</td>
</tr>
<tr>
<td></td>
<td>47.54 (12.28)</td>
<td>53.12 (12.96)</td>
<td>50.32 (11.53)</td>
<td>50.32 (12.28)</td>
</tr>
<tr>
<td>Depression</td>
<td>54.39 (10.91)</td>
<td>53.58 (10.30)</td>
<td>54.67 (9.12)</td>
<td>54.21 (10.12)</td>
</tr>
<tr>
<td></td>
<td>47.98 (11.98)</td>
<td>57.14 (12.11)</td>
<td>51.46 (10.90)</td>
<td>52.20 (12.24)</td>
</tr>
<tr>
<td>Anxiety</td>
<td>54.20 (11.01)</td>
<td>52.63 (10.19)</td>
<td>51.54 (11.35)</td>
<td>52.79 (10.88)</td>
</tr>
<tr>
<td></td>
<td>47.68 (11.30)</td>
<td>54.23 (11.80)</td>
<td>48.34 (11.29)</td>
<td>50.09 (11.81)</td>
</tr>
<tr>
<td>Hostility</td>
<td>53.59 (11.95)</td>
<td>51.98 (9.56)</td>
<td>51.72 (10.70)</td>
<td>52.43 (10.78)</td>
</tr>
<tr>
<td></td>
<td>48.14 (11.59)</td>
<td>53.77 (12.20)</td>
<td>49.22 (10.92)</td>
<td>50.38 (11.80)</td>
</tr>
<tr>
<td>Phobic Anxiety</td>
<td>51.91 (11.27)</td>
<td>49.19 (9.38)</td>
<td>50.39 (9.87)</td>
<td>50.50 (10.23)</td>
</tr>
<tr>
<td></td>
<td>47.69 (10.36)</td>
<td>51.65 (10.75)</td>
<td>48.48 (9.33)</td>
<td>49.27 (10.27)</td>
</tr>
<tr>
<td>Paranoid Ideation</td>
<td>54.92 (11.20)</td>
<td>52.91 (11.91)</td>
<td>53.13 (11.14)</td>
<td>53.66 (11.42)</td>
</tr>
<tr>
<td></td>
<td>49.77 (11.60)</td>
<td>55.21 (12.30)</td>
<td>51.08 (11.85)</td>
<td>52.02 (12.11)</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>54.36 (12.35)</td>
<td>51.87 (11.29)</td>
<td>52.22 (11.43)</td>
<td>52.82 (11.72)</td>
</tr>
<tr>
<td></td>
<td>50.16 (11.86)</td>
<td>55.53 (12.57)</td>
<td>49.39 (11.30)</td>
<td>51.70 (12.20)</td>
</tr>
<tr>
<td>Global Severity Index</td>
<td>60.31 (10.33)</td>
<td>57.71 (9.64)</td>
<td>58.36 (9.70)</td>
<td>58.79 (9.92)</td>
</tr>
<tr>
<td></td>
<td>48.46 (12.51)</td>
<td>56.42 (12.17)</td>
<td>51.42 (11.66)</td>
<td>52.10 (12.52)</td>
</tr>
</tbody>
</table>
The SCL-90-R was used to measure participants’ reports of psychological symptomology on nine subscales including; somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and the Global Severity Index (GSI). The SCL-90-R was given as a pretest and as a posttest measure surrounding the mood induction procedure. Just as with the MAACL-R, the data were tested with multivariate analyses in order to examine overall group differences or changes, with the same two expectations. First, that the groups themselves would not be different from each other in psychological symptomology prior to any mood induction and second, that the groups would show a change in symptoms after mood induction, that is a change over time between the pretest and the posttest.

Raw scores were used to create mean scores for the subscales of the SCL-90-R. These scores were subsequently converted to t scores according to participant’s age (less than or equal to 19 and 20 years or older) and gender. The pretest and posttest t score means and standard deviations for the SCL-90-R are shown in Table 6 by condition. A repeated measures MANOVA was used to test for differences between and within the three conditions on the nine subscales of the SCL-90-R, including; somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and the GSI with regard to time of administration. No differences were found between participants at pretest with regard to condition \( F(2,31) = 1.74, p < ns \). Essentially the participants started out the same in terms of symptomology in all three groups and were not subject to bias through assignment to conditions. Overall there was a significant difference found between administration of the pretest and posttest of the SCL-90-R subscales \( F(1,2) = 84.21, p < \).
The three conditions when examined as a whole changed significantly from time one to time two.

Figure 4. Elated condition pretest and posttest subscale and GSI mean t-scores for each symptom cluster on the SCL-90-R.

After testing to determine that the conditions started out the same and then changed over time, the mean data obtained were subjected to repeated measure ANOVAs in order to verify that symptoms had changed in the intended direction for each of the three conditions as the main hypotheses suggest. The expectation was that symptoms would change with the elated and depressed conditions but not with the neutral condition. Specifically, it was expected that each of the subscale t scores and the GSI t scores would
decrease for the elated condition, meaning a decrease in the report of psychological symptomology. The nine subscale t scores and the GSI t scores were predicted to increase in the depressed condition, meaning an increase in the report of psychological symptomology. No changes were anticipated in the neutral condition. In each analysis the mood induction condition served as the independent variable and the nine subscales plus GSI served as the multiple dependent variables.

Table 7
Comparison of Pretest-Posttest t scores and Significance for SCL-90-R by Condition

<table>
<thead>
<tr>
<th>SCL-90-R Subscales</th>
<th>Elated t score</th>
<th>Elated p &lt;</th>
<th>Depressed t score</th>
<th>Depressed p &lt;</th>
<th>Neutral t score</th>
<th>Neutral p &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
<td>9.31</td>
<td>.0001</td>
<td>1.06</td>
<td>.29</td>
<td>4.39</td>
<td>.0001</td>
</tr>
<tr>
<td>Obsessive-Compulsive</td>
<td>10.99</td>
<td>.0001</td>
<td>1.40</td>
<td>.17</td>
<td>6.42</td>
<td>.0001</td>
</tr>
<tr>
<td>Interpersonal Sensitivity</td>
<td>8.86</td>
<td>.0001</td>
<td>2.25</td>
<td>.03</td>
<td>6.91</td>
<td>.0001</td>
</tr>
<tr>
<td>Depression</td>
<td>8.96</td>
<td>.0001</td>
<td>4.37</td>
<td>.0001</td>
<td>6.24</td>
<td>.0001</td>
</tr>
<tr>
<td>Anxiety</td>
<td>8.37</td>
<td>.0001</td>
<td>2.05</td>
<td>.04</td>
<td>5.64</td>
<td>.0001</td>
</tr>
<tr>
<td>Hostility</td>
<td>6.26</td>
<td>.0001</td>
<td>2.26</td>
<td>.03</td>
<td>4.02</td>
<td>.0001</td>
</tr>
<tr>
<td>Phobic Anxiety</td>
<td>5.42</td>
<td>.0001</td>
<td>3.85</td>
<td>.0001</td>
<td>3.35</td>
<td>.001</td>
</tr>
<tr>
<td>Paranoid Ideation</td>
<td>7.38</td>
<td>.0001</td>
<td>3.40</td>
<td>.001</td>
<td>3.71</td>
<td>.0001</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>6.52</td>
<td>.0001</td>
<td>4.68</td>
<td>.0001</td>
<td>6.70</td>
<td>.0001</td>
</tr>
<tr>
<td>Global Severity Index</td>
<td>14.38</td>
<td>.0001</td>
<td>1.59</td>
<td>.12</td>
<td>10.18</td>
<td>.0001</td>
</tr>
</tbody>
</table>

Bold numbers: significance p < .05.

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Hypothesis 1. The first hypothesis stated that as mood increased due to an elated mood induction procedure, severity of psychological symptoms would be reduced. This was proposed to hold true for the individual subscales and the GSI provided by the SCL-90-R (Derogatis, 1977). Figure 4, which plots the average t score separately for the pretest and posttest data, visibly shows that for each of the subscales, mean t scores did in fact decrease, with Table 1 giving the actual pretest and posttest t score means. In the elated condition, there was an overall significant change on the nine subscales and the GSI between preinduction and postinduction test times ($F_{(1,104)} = 68.00, p < .0001$) (Cronbach’s $\alpha = .98$ pretest and post-test). For all subscales and for the GSI, t scores decreased as expected.

Subsequent analyses using t tests were also performed for each of the subscales and the GSI. Table 7 provides a summary of t scores and significance for each of the SCL-90-R subscales and GSI including level of significance for each group. Those t scores with a significance level of $p < .05$ are indicated in bold. For the elated condition, all subscales including the GSI changed significantly at the $p < .0001$ level.

Hypothesis 2. The second hypothesis stated that as mood decreased due to the depressed mood induction procedure, severity of psychological symptoms would be increased, both on individual scales and the GSI. Figure 5, which plots the mean t scores separately for the pretest and posttest data, show that the depression induction elevated the t score for each symptom cluster but did not produce a change in the overall global severity index. For the depressed condition, there was a significant change on the nine subscales and the GSI between preinduction and postinduction test times ($F_{(1,104)} = 20.83$, 20.83,
For all subscales, t scores increased as expected, but the GSI t-score decreased somewhat.

Figure 5. Depressed condition pretest and posttest subscale and GSI mean t-scores for each symptom cluster on the SCL-90-R.

Subsequent t tests were also conducted for the depressed condition. While the overall change was significant for the depressed condition, and each of the subscales except for the GSI moved in the expected direction, not every subscale moved significantly. Interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism changed significantly between pretest and posttest. The somatization and obsessive-compulsive subscales along with the GSI did not show
significant change from pretest to posttest. These results are summarized in Table 7 side by side with the other two conditions.

**Figure 6.** Neutral condition pretest and posttest subscale and GSI mean t-scores for each symptom cluster on the SCL-90-R.

*Hypothesis 3.* The third hypothesis asserted that a neutral mood induction would have no effect on the report of psychological symptoms. The expectation was that scores would remain the same at pretest and posttest. Figure 6, which plots the mean t-scores separately for the pretest and posttest data, does show a change in the same direction as the elated condition. All scores went down after the neutral mood induction. For the neutral condition, there was an unexpected significant change on the nine subscales and
the GSI between preinduction and postinduction ($F_{(1,103)} = 44.66, p < .0001$) (Cronbach's
$\alpha = .97$ pretest, .98 post-test). As is shown in Figure 6, this significant change consisted
of a decrease in t scores for all subscales and for the GSI just as in the elated condition,
but when compared to Figure 4 showing the changes in the elated condition, the change
for the neutral condition was smaller than for the elated condition.

Subsequent analyses using t tests as summarized in Table 7 for all three
conditions were performed for the neutral condition. It was shown that the neutral
condition did change over time, and an analysis of the individual scales and GSI show
that the change for each was significant.

**Hypothesis 4.** The fourth hypothesis was that it is unlikely that the impact of each
mood induction condition (elated, depressed, neutral) would be equal, and that one mood
induction will have a greater effect than the others. As people are generally in a more
positive mood, greater overall mood changes have typically been shown with a
depression induction because there is more room to move on the positive/negative mood
axis (Clark, 1983). The MAACL-R was used to examine mood changes for each of the
three conditions.

Thus, it was anticipated that the depressed mood induction would have a greater
impact or bigger change than the elated mood induction but that both of these would
show greater effects or change that the neutral mood condition. In fact, the elated
condition had a nonsignificant change but in the expected direction on the MAACL-R,
whereas the depressed condition had a significant change on the MAACL-R and in the
expected direction. So, the first part that the depressed mood induction would be more
effective at changing mood than the elated mood induction held true. This is shown on
Figures 1 and 2, which plot the changes from pretest to posttest on each of the MAACL-R subscales. By examining the t score means in Table 4, the differences can be numerically seen. The depression induction did in fact create greater change in mood than the elated induction.

The second part asserted that the depressed induction and the elated induction would both have a greater effect on mood than the neutral condition. An examination of Figure 2, a plot of the depression pretest and posttest mean t scores, and of Figure 3, a plot of the neutral pretest and posttest mean t scores, graphically shows the overall change for the depressed condition was greater than for the neutral condition. The t score means listed in Table 4 show this numerically. As state earlier, however, there was a nonsignificant change in the desired direction for the elated condition, and a significant change for the neutral condition, going against the expectation that the elated condition would show greater change than the neutral condition. When contrasting Figure 1, a plot of the elated pretest and post test mean t scores, and Figure 3, a plot for the neutral condition, a greater change in the positive affect subscale can be vividly seen. So, although the overall change for the elated condition was not significant, and the overall change for the neutral condition was, the subscale that most closely mirrors the intent of the elated mood induction showed far greater change in the elated condition.

Summary

Several analyses were conducted in the examination of the data. First the frequency questions were evaluated to test for participant bias. Analyses of variance showed significant differences between time one and time two for two frequency
questions in the elated condition, six frequency questions in the depressed condition, and no frequency questions in the neutral condition. However, all pretest and posttest responses highly correlated. These results do not clearly answer the question of whether or not participant bias was an influencing factor.

Second, the MAACL-R was used as a manipulation check to determine if mood had in fact changed. It was found that mood changed in the expected direction, although not quite at the significant level for the elated condition. Anxiety, depression, and positive affect did change significantly. Mood changed significantly on all subscales in the expected direction for the depressed condition. Mood also changed significantly for the neutral condition on the anxiety, depression, and positive affect subscales in a mixed way that did not completely mirror either the elated or depressed condition.

Third, the SCL-90-R was used to test for differences in the report of psychological symptomology with regard to mood. The elated mood condition changed significantly in the expected direction, and each subscale and the GSI changed significantly. Overall, the depressed condition changed significantly in the expected direction on the nine subscales but not the GSI. Further analyses showed that significant changes were found specifically on each of the subscales except for the somatization and obsessive-compulsive subscales and the GSI. The neutral condition also changed significantly, in the same direction as the elated condition, and each subscale and the GSI were found to change significantly. Finally, an examination of the means showed that the depressed condition created a greater mood change than the elated condition or than the neutral condition. The elated condition created a greater mood change in the area of positive affect than the neutral condition.
CHAPTER 5

DISCUSSION

The overarching purpose of this research was to assess the feasibility of developing the Velten MIP as a therapeutic tool. To that end, the specific purpose of the research was to examine the effect of mood induction on various psychological symptomology commonly present in a therapeutic environment. The Symptom Check List-90-Revised (SCL-90-R; Derogatis, 1977) provides a broad overview of various psychological symptoms and global functioning and, thus, was suitable for use in this research as a dependent variable with which to measure the efficacy of mood induction in altering psychological symptoms.

Mood induction procedures have been criticized in the literature for a variety of reasons. These include demand characteristics, short duration of effect, and lack of overall effectiveness. Each of these important concerns was addressed by the design of the present study as is discussed next.

The primary argument regarding demand characteristics is that participants guess the purpose of the study, and want to confirm the hypothesis, so they fake the requested mood (Westermann et al., 1996). Berkowitz and Troccoli (1986) previously suggested that in order for demand characteristics to be responsible for mood change, participants must have the following: motivation to help the success of the experiment even if they
have to lie; a desire to find out the true hypothesis; the ability to be able to discern the hypothesis from the experiment; and the wish to authenticate the hypothesis.

This study attempted to detect demand characteristics by using pretest and posttest frequency questions that asked participants about countable behaviors they had experienced over the past week. The assumption was that if the participants were attempting to knowingly alter answers to match the induced moods, this would be detected by post mood induction changes in the answers to the frequency questions.

Initial multivariate analyses were run that showed that the conditions overall did change over time. Individual univariate analyses showed that specifically, the elated and depressed conditions changed from time one to time two, but the neutral condition did not. Finally, t tests showed that on the frequency questions in the elated condition, the scores on two scales, stomachaches and verbal fights, went significantly down. In the depressed condition, the scores on six subscales went significantly up, including headaches, suicidal thoughts, alcoholic drinks, stomachaches, verbal fights, and trouble sleeping. There was no significant change for any of the scores in the neutral condition.

These results might indicate that demand characteristics did indeed have an effect on participants' responses. The answers did, on some questions, change over time as one might expect them to given the respective mood induction. The elated condition reported fewer problem behaviors, the depressed condition reported more problem behaviors, and the neutral condition counted no change after the induction.

A post hoc examination of the frequency questions, however, suggests the picture might be more complicated. All but one of the frequency questions have one or more related questions on the SCL-90-R. Table 8 lists the frequency questions, their
Table 8

Comparison of Frequency Questions to similar items on the SCL-90-R and corresponding subscales or Global Severity Index

<table>
<thead>
<tr>
<th>Frequency Questions</th>
<th>SCL-90-R Items</th>
<th>SCL-90-R Subscales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td>#1 Headaches</td>
<td>Somatization</td>
</tr>
<tr>
<td>Suicide</td>
<td>#15 Thoughts of ending your life</td>
<td>Depression</td>
</tr>
<tr>
<td></td>
<td>#59 Thoughts of death or dying</td>
<td>GSI (additional item)</td>
</tr>
<tr>
<td>Alcoholic Drinks</td>
<td>(none)</td>
<td>(none)</td>
</tr>
<tr>
<td>Stomachaches</td>
<td>#40 Nausea or upset stomach</td>
<td>Somatization</td>
</tr>
<tr>
<td>Panic Attacks</td>
<td>#39 Heart pounding or racing</td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td>#72 Spells of terror or panic</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Fainted</td>
<td>#4 Faintness or dizziness</td>
<td>Somatization</td>
</tr>
<tr>
<td></td>
<td>#82 Feeling afraid you will faint in public</td>
<td>Phobic Anxiety</td>
</tr>
<tr>
<td>Verbal Fights</td>
<td>#24 Temper outbursts that you could not control</td>
<td>Hostility</td>
</tr>
<tr>
<td></td>
<td>#74 Getting into frequent arguments</td>
<td>Hostility</td>
</tr>
<tr>
<td></td>
<td>#81 Shouting or throwing things</td>
<td>Hostility</td>
</tr>
<tr>
<td>Physical Fights</td>
<td>#63 Having urges to beat, injure, or harm someone</td>
<td>Hostility</td>
</tr>
<tr>
<td>Trouble Sleeping</td>
<td>#44 Trouble falling asleep</td>
<td>GSI (additional item)</td>
</tr>
<tr>
<td></td>
<td>#66 Sleep that is restless or disturbed</td>
<td>GSI (additional item)</td>
</tr>
<tr>
<td>Wake Late</td>
<td>#64 Awakening in the early morning (reversed)</td>
<td>GSI (additional item)</td>
</tr>
</tbody>
</table>

corresponding SCL-90-R items and the subscale those items loaded on. It was thought that the semantic difference of “In the last week, how many stomachaches have you
had?" (frequency questions) versus "How much were you distressed by stomachaches" (SCL-90-R) would be sufficient to differentiate and examine demand characteristics. The first asks participants to count a behavior; the second to rate the difficulty with that behavior.

The problem is that the frequency questions are very similar, perhaps too similar, to the SCL-90-R items. Taking into the account this similarity, the expectation then becomes that some or all of the scores on the frequency questions would change because the mood induction would have a similar effect on the frequency questions, looking at problematic behaviors, as on the SCL-90-R, looking at problematic symptoms. The literature on mood congruent memory supports the idea that more bad things are remembered when in a bad mood (Cohen et al., 1988).

Without additional study, it would be difficult at this time to determine if the changes were due solely to demand characteristics, due solely to mood induction, or due to a combination of both. As an alternate analysis, correlations were run to see if pretest answers were predictive of posttest answers. It was found that the pretest-posttest pairs positively correlated very highly and significantly. This suggests that overall, the pretest-posttest answers were similar.

The second criticism of MIPs is that the moods induced do not last very long. Various studies have indicated a wide range of mood induction durations, from only 10 minutes to lingering effects the next day (Clark, 1983; Frost & Green, 1982; Knight et al., 2002; Schare & Lisman, 1984; Sinclair et al., 1994). In order to increase the likelihood that any induced mood was still applicable at the time of post testing, few posttest measures were used, including only the frequency questions, the MAACL-R, and the
SCL-90-R. The total amount of time needed for the participants to complete these measures was approximately 20 minutes, perhaps shortened due to the familiarity participants had gained with the measures after having completed them for the pretest. Due to the relatively short amount of time it took for participants to complete these posttest measures it seems likely that any mood change induced would have persisted through the posttest period of data collection.

The third criticism questions the overall effectiveness of mood induction procedures in actually producing changes in mood. For example, Clark (1983) reviewed the literature on effectiveness rates and found that mood was changed using the Velten MIP in only 50 to 70 percent of participants. This issue of effectiveness was addressed in two ways. First, an incubation period was included after the mood induction in an attempt to help foster and intensify the induced mood as per Westermann and colleagues (1996). Second, as recommended by Kenealy (1986), a manipulation check was included in the procedure explicitly to assess if the mood induction had been efficacious. The manipulation check used was an updated version of the manipulation check used by Velten (1968) in his original work, namely the Multiple Affect Adjective Check List-Revised (MAACL-R; Lubin & Zuckerman, 1999).

The MAACL-R was used to assess for anxiety, depression, hostility, and positive affect both before and after the mood induction. Scores were then compared to determine if a change in mood had occurred. For the elated condition, it was predicted that negative moods (anxiety, depression, and hostility) would decrease while positive affect would increase. This did indeed happen, however, not quite at a statistically significant level. For the depressed condition, the opposite prediction was made; that negative moods
would increase and positive affect would decrease. This prediction was confirmed statistically. Third, it was expected that the neutral condition would produce little or no change in either negative or positive affect. Contrary to this expectation the neutral condition did, in fact, produce significant changes. In terms of the mean data obtained between the pretest and posttest, anxiety and depression decreased marginally, hostility remained essentially stable, and positive affect decreased.

This mixed pattern of concurrent decreases in both negative and positive moods might be attributed, in part, to the nature of the neutral statements used and the minimal amount of instruction given to the participants. The neutral statements were a jumble of various factual statements with no relation to each other or seemingly to anything else. The instructions were purposely kept to a minimum in order to control for biases, especially demand bias. This combination of obtuse statements and minimal instruction created some confusion for the participants in the neutral condition, which might have impacted mood to some extent. Indeed, students in the neutral condition were more likely to ask for further explanation after the session had ended than were participants in either the elated or depressed mood induction conditions.

Finally, it was expected that the Velten MIP would produce a larger change in mood in the depressed condition than in the elated condition and that the MIP would produce larger magnitude effects in the elated and depressed conditions than in the neutral condition. Westermann and colleagues (1996) suggested that this might be due to participants naturally being more positive to begin with, leaving less room for change due to the induction. This hypothesis was found to be true. The depressed condition changed significantly; the elated condition did not. Both the depressed and elated
conditions changed in the expected directions, while the neutral condition produced mixed changes.

In this study, various controls and measures were utilized for experimenter bias, Type I error, demand characteristics, duration of effects, and effectiveness in general in order to optimize the validity of the intended examination of the effects of mood induction on psychological symptomology, insomuch as there are some lingering concerns regarding the frequency questions and their validity as a test of demand characteristics. So far, the obtained data suggest the conclusion that the Velten Mood Induction procedures used in fact changed mood as expected. This leads to the main purpose of this study, explicitly the examination of the effects of mood induction on psychological symptomology.

In order to measure psychological symptomology, the SCL-90-R was used. The SCL-90-R includes nine subscales measuring a range of psychological symptoms. They include somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Additionally, the Global Severity Index (GSI), a measure of depth of symptomology, was determined (Derogatis, 1977).

The first hypothesis tested was that as positive mood increased and negative mood decreased due to the elated mood induction, the report of psychological symptoms would decrease. This was found to occur and at a significant level. The apparent conclusion then is that as positive mood is increased, one is less likely to report current psychological symptoms.
The second hypothesis was that as positive mood decreased and negative mood increased due to the depressed mood induction, the report of psychological symptoms would intensify. This hypothesis was confirmed for all of the nine subscales but not for the GSI. Taken together these findings suggest that a greater number of symptoms were reported after the depressed mood induction but that the overall severity of the symptoms did not increase. The GSI is a measure of the severity or depth of the symptoms and is more affected by the ranking of the symptoms as opposed to the frequency of the symptoms as reflected in the subscales. One might then conclude that when a negative mood is induced, one is more sensitive to a wider range of symptoms, but that the depth of the concerns is not necessarily increased.

The third hypothesis stated that there would be no change with regard to psychological symptomology for the neutral condition. There were differences obtained however, and at a significant level. After the neutral mood induction, the report of psychological symptomology decreased on all nine subscales and on the Global Severity Index, as was the case for the elated mood induction condition, although the mean changes were less for the neutral condition than for the elated condition. It is tempting to conclude from these data that even neutral mood inducing statements might be effective at reducing psychological symptomology. Perhaps it is the confusing nature of the statement that distracts one's attention from introspection of personal distress. Regardless, the data do show that there was a decrease in psychological symptomology in the neutral mood induction condition.

This study has shown that the Velten mood induction procedure is effective at changing mood and, importantly, that an induced mood change is effective at changing
the report of psychological symptomology. When we are made to feel good, we report fewer psychological symptoms. When we are made to feel bad, we report more psychological symptoms. And, tentatively, when we are seemingly distracted we report fewer symptoms as well. Although these conclusions seem simply to confirm what might be described as accepted common sense this is, nonetheless the first research study to test empirically these assumptions using a mood induction procedure. Importantly, the research establishes the potential of using a mood induction procedure as a therapeutic tool in a clinical setting.

Given the above, it seems appropriate here to consider ways in which a mood induction procedure might be used in and out of a typical therapy session. Among the factors to be considered are the utility of the procedure, uses for the elated induction, and uses for the depressed induction.

The utility of the Velten MIP is potentially extensive as it has been shown that: a) the procedure changes mood in the expected direction; b) demand characteristics can be used to increase effects; c) effects can be built upon despite their potential short duration; d) the procedure is extremely flexible to person, problem, mood, and treatment method; e) the procedure is easy to use. For example, Cairns and Norton (1988) were successful at reversing anxious, depressed, and hostile induced moods by using statements designed to be the opposite of the mood in question. For the purpose of this study, keeping instructions to a minimum were intended to lessened demand characteristics. However, moving a client into an active confederate role, demand characteristics could be use advantageously to increase the effects of the mood induction.
Velten (1968) suggested that the effects of the mood induction could be built upon through repeated use presumably in or outside of a therapy session. Inasmuch as a typical therapy session lasts for 50 minutes, this is within the time frame encompassed by typical mood induction durations. Perhaps the biggest asset of the Velten MIP as a therapeutic tool is the flexibility to person, problem, mood, and treatment method. The statements could be altered to the person’s language, beliefs, priorities, or time. Velten (1968) suggested that the therapist and patient could create statements that reflect the personal issues or problems being addressed. Basically, the Velten MIP can be tailored for any context.

The most basic therapeutic use of the Velten MIP would be to alleviate symptoms. An elated mood has been shown to reduce symptoms of depression, for example, and the Velten MIP could be used to do just that in the course of a therapy session. The symptom relief factor alone could be therapeutic as well as helping the client to be more productive within the session. With enough repetition outside of the therapy session, the client might be able to change overall mood and symptom distress in daily life as well.

Additionally, due to the ease of use, the client outside of session during a stressful moment might employ the procedure. The Velten MIP could be tailored to the client’s needs, fears, or concerns and rehearsed in session. The client could then take the procedure into daily life. This expands the use of the Velten MIP from a therapist tool to a client tool that can continue to be used beyond therapy termination, hopefully reducing any potential symptom relapse.
In addition to being used to alleviate symptoms, an elated mood might be used to help the client think more broadly as proposed by Fredrickson's (1998, 2000, 2001, 2003) Broaden and Build model. Fredrickson argued that negative emotions such as anger and fear lead to specific, narrowly focused actions such as hostility or flight (Fredrickson, 2003). Positive emotions, on the other hand, lead to more general, broadly focused options. A person with depression and a narrowed viewpoint might have difficulty challenging cognitive distortions during the process of cognitive therapy. Narrowed enough, a person might have difficulty being receptive to therapy at all. By using an elated mood induction to lift mood, the client might then be able to broaden his viewpoint and build on the good mood.

As a part of the Broaden and Build model (Frederickson, 2003), one option would be to begin the session with an elated mood induction. Another alternative would be to start the session with a mood induction in order to help provide structure to and even jump-start the therapy session. For example, a client that is difficult to focus could be asked to come in and begin reading the personalized statements at the beginning of the session.

While the benefits of an elated mood induction are more obvious, there are possible uses for a depressed mood induction as well. For example, anxiety might be induced so that a client might practice calming techniques in session. A formerly depressed individual might have a depressed mood induced and then examined so that he or she might be better able to recognize relapse and warning signs. A negative or stressful mood might be induced with the idea that future similar moods will be less problematic as in a form of exposure and desensitization.
Briefly summarized, due to the flexibility and utility of the Velten MIP, the possible uses for this procedure in and out of therapy are considerable in number. The procedure can be tailored to person, place, or problem. The procedure can also be tailored to the therapist's approach, for example by using the Velten MIP as a focusing tool, or as a broadening tool. The Velten MIP is easy to use and portable. It can be used alone or in conjunction with other therapeutic processes. Obviously, a next step in this research would be to begin testing the Velten MIP in each of its varied uses as a therapy tool and adjunct.
VELTEN DEPRESSION STATEMENTS AND INSTRUCTIONS

I will be shown a series of pages 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.

First, as each statement is presented, I will simply read it to myself, and then I will read it to myself again 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, like “I’ll see if this will work.”

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.
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 the 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 presents. 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.

To sum up: the whole purpose is to see whether a person can talk himself/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 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.

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 a statement, which seems 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 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.

If I feel the urge to laugh, it will probably be because humor is a good way to counteract unwanted feeling, or it might be because 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 how to help myself out of undesirable moods that occur in everyday life. If for any reason I feel I cannot continue, I will raise my hand.

The next page will begin the series of statements. I will read each to myself, then I will read them again to myself. Then I will try to experience the mood as well as I can and continue to do so as each statement presents and I move further into the mood. After the cards will be a brief series of questions to answer. If I feel uncomfortable, I will tell the examiner, and we can stop the procedure.

1. Today is neither better nor worse than any other day.

2. However, I feel a little low today.

3. I feel rather sluggish right now.

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 study is basically useless, because you forget almost everything anyway.

9. People annoy me; I wish I could be by myself.

10. I have 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 fighting in Iraq might get a lot worse.

14. I just don’t seem to be able to get going as fast as I used to.

15. There are days when I feel weak and confused and everything goes 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 parents needless worry.

19. I feel tired and indifferent to things today.

20. Just to stand up takes 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 have been so discouraged that I went to sleep rather than face a problem.

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 a simple decision.

27. I just 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 is 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 really seems to 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 must get done.

41. I feel horribly guilty about how I’ve treated my parents at times.

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 is 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 is 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 in my past life is taking possession of me.

60. I want to go to sleep and never wake up.
APPENDIX II

VELTEN ELATION STATEMENTS AND INSTRUCTIONS

I will be shown a series of pages 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.

First, as each statement is presented, I will simply read it to myself, and then I will read it to myself again 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, like "I'll see if this will work."

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.
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 the 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 presents. 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.

To sum up: the whole purpose is to see whether a person can talk himself/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 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.

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 a statement, which seems 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 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.

If I feel the urge to laugh, it will probably be because humor is a good way to counteract unwanted feeling, or it might be because 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 how to help myself out of undesirable moods that occur in everyday life. If for any reason if feel I cannot continue, I will raise my hand.

The next page will begin the series of statements. I will read each to myself, then I will read them again to myself. Then I will try to experience the mood as well as I can and continue to do so as each statement presents and I move further into the mood. After the cards will be a brief series of questions to answer. If I feel uncomfortable, I will tell the examiner, and we can stop the procedure.

1. Today is neither better nor worse than any other day.
2. I do feel pretty good today, though.
3. I feel lighthearted.
4. This might turn out to have been one of my good days.
5. If your attitude is good, then things are good, and my attitude is good.
6. I’ve certainly got energy and self-confidence to spare.
7. I feel cheerful and lively.
8. On the whole, I have very little difficulty in thinking clearly.
9. My parents are pretty proud of me most of the time.
10. I’m glad I’m in college. It’s the key to success nowadays.
11. For the rest of the day, I bet things will go really well.
12. I’m pleased that most people are so friendly to me.
13. My judgment about most things is sound.
14. It’s encouraging that as I get farther into my major, it’s going to take less study to get good grades.

15. I’m full of energy and ambition. I feel like I could go a long time without sleep.

16. This is one of those days when I can grind out schoolwork with practically no effort at all.

17. My judgment is keen and precise today; just let someone try to put something over on me.

18. When I want to, I can make friends extremely easily.

19. If I set my mind to it, I can make things turn out fine.

20. I feel enthusiastic and confident now.

21. There should be opportunity for a lot of good times coming along.

22. My favorite song keeps going through my head.

23. Some of my friends are so lively and optimistic.

24. I feel talkative. I feel like talking to almost anybody.

25. I’m full of energy, and am really getting to like the things I’m doing on campus.

26. I’m able to do things accurately and efficiently.

27. I know good and well that I can achieve the goals I set.

28. Now that it occurs to me, most of the things that have depressed me wouldn’t have if I’d just had the right attitude.

29. I have a sense of power and vigor.

30. I feel so vivacious and efficient today, sitting on top of the world.

31. It would really take something to stop me now!
32. In the long run, it’s obvious that things have gotten better and better during my life.
33. I know that in the future, I won’t over emphasize so-called “problems.”
34. I’m optimistic that I can get along very well with most of the people I meet.
35. I’m too absorbed in things to have time for worry.
36. I’m feeling amazingly good today!
37. I’m particularly inventive and resourceful in this mood.
38. I feel superb! I think I can work to the best of my ability.
39. Things look good. Things look great!
40. I feel that many of my friendships will stick with me in the future.
41. I can find the good in almost anything.
42. I feel so happy and playful today. I feel like surprising someone by telling a funny joke.
43. I feel an exhilarating animation in all I do.
44. I feel highly perceptive and refreshed.
45. My memory is in rare form today.
46. In a buoyant mood like this one, I can work fast and do it right the first time.
47. I can concentrate hard on anything I do.
48. My thinking is clear and rapid.
49. Life is so much fun: It seems to offer so many sources of fulfillment.
50. Things will be better and better today.
51. I can make decisions rapidly and correctly; and I can defend them against criticism easily.
52. I feel industrious as heck. I want to do something!

53. Life is firmly in my control.

54. I wish somebody would play some good loud music.

55. This is great; I really do feel good; I am elated by things.

56. I'm really feeling sharp now.

57. This is just one of those days when I'm ready to go!

58. I feel like bursting with laughter. I wish somebody would tell a joke and give me an excuse.

59. I'm full of energy.

60. Wow, I feel great!
APPENDIX III

VELTEN NEUTRAL STATEMENTS AND INSTRUCTIONS

I will read each of the following statements twice and silently to myself. I will concentrate on each of the statements. I will be told by the test administrator when to turn the page to the next statement. When I am done reading these statements, I will be asked to complete some tasks. If I feel uncomfortable, I will raise my hand, and we can stop the procedure.

1. Oklahoma City is the largest city in the world in area, with 631,166 square miles.
2. Japan was elected to the United Nations 14 years after Pearl Harbor.
3. At the end appears a section entitled "Bibliography Notes."
4. We have two kinds of nouns denoting physical things: individual and mass nouns.
5. This book or any part thereof must not be reproduced in any form.
6. Agricultural products comprised seventy percent of the income.
7. Saturn is sometimes in conjunction, beyond the sun from the earth, and is not visible.
8. Some streets are still listed under their old names.
9. The system is supervised by its board of regents.
10. There is a large rose garden near Tyler, Texas.
11. Many states supply milk for grammar school children.
12. It is God's will that the fittest survive.

13. The typography, paper, and binding were of the highest quality.

14. The political machine ran the city 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 travels between Paris and Istanbul.

17. When the banyan bent down under its own weight, its branches began to take root.

18. There isn't a scientific explanation for every observation.

19. The Hope Diamond was shipped from South Africa to London through the mail.

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 language.

23. There was a small article in the local newspaper which indicates acceptance of the kidnapper's terms.

24. There are some forms in which no oath is required.

25. Intramatics finds mates for the lonely.

26. Ninety-nine percent of Alaska is owned by the government.

27. Two men dressed as repairmen will appear when the van pulls up.

28. The wood was discolored as if it had 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 as a separate volume.
31. A 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 beginner guide.

38. The speaker outlined a plan where the deficits would be eliminated.

39. Black and white pictures are arranged in 10 sections.

40. The voices come only at night, and whisper words, terrible words.

41. The papers had been front-paging it for days.

42. The notice made it clear that coffee breaks were being limited.

43. No man worked harder than he.

44. Potter wrote numerous satires on social cynicism.

45. Boeing's main plan in Seattle employs 35,000 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, 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 hull of the old ship could be seen.

60. A free sample was given to each person who enters the store.
APPENDIX IV

INCUBATION PERIOD INSTRUCTIONS

Depressed

Now that you’re feeling very depressed, concentrate on this feeling. Let it flow. Let it build. Feel the mood. Feel it get stronger. Think about other things that have happened in your life that have made you very, very depressed, like being alone and lonely, or like when you failed a test, or when someone’s broken up with you. Concentrate on it. As you do, you’ll feel your mood build. It’ll become more intense, more depressed. This in turn, will make you think of other things in your life that have made you very, very depressed. The mood will build. Let it. Feel it become more intense. Feel it become stronger. It will happen. Do and think whatever you can to build this mood. Feel very, very depressed. Close your eyes. Begin now (Sinclair et al., 1994, p. 396).

Elated

Now that you’re feeling very happy, concentrate on this feeling. Let it flow. Let it build. Feel the mood. Feel it get stronger. Think about other things that have happened in your life that have made you very, very happy, like doing something you love to do, or being with good friends, doing fun, enjoyable things. Concentrate on it. As you do, you’ll feel your mood build. It’ll become more intense, more happy. This in
turn, will make you think of other things in your life that have made you very, very
happy. The mood will build. Let it. Feel it become more intense. Feel it become
stronger. It will happen. Do and think whatever you can to build this mood. Feel very,
very happy. Close your eyes. Begin now (Sinclair et al., 1994, p. 395).

Neutral

Clear your mind of any mood related thoughts (Sinclair et al., 1994, p. 396).

Simply relax. Begin now
APPENDIX V

STATE FORM OF THE MULTIPLE AFFECT ADJECTIVE

CHECKLIST-REVISED (MAACL-R)

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<td>Devoted</td>
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<td>Disagreeable</td>
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<td>36</td>
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<td>26</td>
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<td>27</td>
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<td>Desperate</td>
<td>65</td>
<td>Indignant</td>
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<tr>
<td>33</td>
<td>Destroyed</td>
<td>66</td>
<td>Inspired</td>
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67. Interested 113. Tame
68. Irritated 114. Tender
69. Jealous 115. Tense
70. Joyful 116. Terrible
71. Kindly 117. Terrified
72. Lonely 118. Thoughtful
73. Lost 119. Timid
74. Loving 120. Tormented
75. Low 121. Understanding
76. Lucky 122. Unhappy
77. Mad 123. Unsociable
78. Mean 124. Upset
79. Meek 125. Vexed
80. Merry 126. Warm
81. Mild 127. Whole
82. Miserable 128. Wild
83. Nervous 129. Willful
84. Obliging 130. Wilted
85. Offended 131. Worrying
86. Outraged 132. Young
87. Panicky
88. Patient
89. Peaceful
90. Pleased
91. Pleasant
92. Polite
93. Powerful
94. Quiet
95. Reckless
96. Rejected
97. Rough
98. Sad
99. Safe
100. Satisfied
101. Secure
102. Shaky
103. Shy
104. Soothed
105. Steady
106. Stubborn
107. Stormy
108. Strong
109. Suffering
110. Sullen
111. Sunk
112. Sympathetic
APPENDIX VI

FREQUENCY QUESTIONS

In the last week…

1. How many headaches have you had?
2. How many times have you thought about suicide?
3. How many alcoholic drinks have you had?
4. How many stomachaches have you had?
5. How many panic attacks have you had?
6. How many times have you fainted?
7. How many verbal fights have you been in?
8. How many physical fights have you been in?
9. How many nights did you have trouble sleeping?
10. How many mornings did you wake up late?
APPENDIX VII

DEBRIEFING

The Velten Mood Induction procedure consists of a series of statements designed to bring about a certain mood, specifically a positive mood, a negative mood, or a neutral mood. The purpose of this experiment is to examine the effect of mood on how you feel about other symptoms you might have, such as feelings of anxiety or sadness. We are looking to see if your mood influences how you feel in other ways.

You read statements that were designed to bring about one of these moods, positive, negative, or neutral. You completed questionnaires about how much other symptoms such as anxiety or sadness bother you both before and after the mood statements were read. Then you read more statements designed to bring you back to a neutral mood. Any carry-over mood change from the first set of statements is only short-lived and should be gone at this time. If you experience any discomfort, please let us know.

Please do not talk about this experiment to other students prior to their participation. Results of this experiment will be available some time in Spring 2006. Please retain your contact numbers if you wish to know the results. Thank you for your participation.
REFERENCES

References marked with an asterix indicate studies included in the meta-analysis.


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432.


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