MOOD INDUCTION IN THE LABORATORY:
A COMPARATIVE STUDY OF MOOD INDUCTION PROCEDURES AND THEIR EFFECTS ON MEMORY

Thesis

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This experiment examined the effectiveness of three mood induction procedures (Velten, Music & Film) with Explicit Mood-Setting Instructions and with No Mood-setting Instructions. It also examined whether the emotional valence of stories recalled after the Mood Induction would be congruent or incongruent with participants’ mood. Happy mood induction was done by reading 20 upbeat statements (Velten), listening to positive music ("Divertimento" & "Coppelia"), or by watching a Robin Williams comedy skit. Sixty participants experienced one of the six happy mood induction conditions, indicated their current moods with responses on 14 adjectives, and then wrote a personal story from their recent past. Judges rated the story on a scale of "very sad" (1) to "very happy" (5). Nine adjectives were combined into a positivity measure and four combined into an activation measure.

Results indicated that the all mood induction procedures produced strong positive moods under both explicit and no mood-setting instructions; there were no differences among the six conditions. There was a significant interaction on the activation measure and subsequent tests showed that activation was lowest for the
comedy video, explicit mood-setting instructions condition. Correlations showed that emotion ratings of stories were more positively correlated with activation scores in the explicit instructions conditions than in the no mood-setting instructions conditions. Such mood-congruent recall under blatant mood-setting instructions and mood-incongruent recall under subtle or irrelevant instructions has been found by previous investigators.
I am genuinely grateful to Charles E. Kimble not only for his invaluable advice during the completion of this thesis but for his indispensable contribution to my knowledge. I would also like to acknowledge Ken A. Graetz and Donald J. Polzella for their assistance on this thesis as well as on my graduate education. I am mostly thankful to my husband Emil R. Infante for his encouragement and support throughout my education and toward my personal and professional life. Finally, I dedicate this thesis to my parents Aurora A. Quintana de la Uz and José E. de la Uz.
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CHAPTER I
INTRODUCTION

We are emotional beings acting on the environment and often our moods influence our judgment. Moods are the core feeling of a person's subjective emotional state at any particular moment (McAndrew, 1993). For example, if we experience the loss of a pet, we might experience a sad mood. By contrast, we might experience a good mood or a happy mood after a good performance in a sport, on a school test or at work. Cognitive factors also influence our moods, for instance, remember your "prom" night, at this moment you probably are experiencing a good mood, but if you remember an unpleasant experience, your mood is going to be a negative one. There is some evidence on how moods influence the way we learn, judge and remember characteristics of other people (Forgas & Bower, 1987).

Moods and Emotions

Emotions consist of behaviors, physiological changes, and subjective experiences (McAndrew, 1993). A complete definition of emotion must take into account three aspects: the experience or conscious feeling of emotion; the processes that occur in the brain and nervous system; and
the observable expressive patterns of emotion (Izard, 1977). Mood is explained as a feeling response to an extended and continued change in organismic functioning (Izard, 1971); so mood is synonymous with the first component above. Some maintain that emotion is a joint function of a physiologically arousing situation and a person's cognitive evaluation or appraisal of the situation (Schachter & Singer, 1962). Hence, the emotional state of a person at a given time and place is the specific mood state at that particular moment.

Over the past two decades there has been increasing interest in studying the psychological effects of mood. In this thesis the term mood is considered synonymous with emotion, affective state and related terms. A number of techniques have been developed to induce positive and negative mood states experimentally. Results from these studies using mood induction procedures (MIPs) provide a substantial contribution to our understanding of the relation between emotion, cognition and behavior (Westermann, Spies, Stahl & Hesse, 1996). Doubts have arisen about the effectiveness and validity of the standard procedures used in mood induction research. While some authors question whether a sufficient intensity of mood is produced (Marston, Hart, Hileman & Faunce, 1984), others
consider the possibility that observed effectiveness is due mainly to demand characteristics of the experimental situation (Buchwald, Strack & Coyne, 1981).

In addition to these controversies, research regarding moods and memory are also the subject of a big debate. While some argue that we have mood incongruent memories (Parrott & Sabini, 1990), others suggest that our memories are mood congruent (e.g., Mayer & Hanson, 1995). In the following text, the effectiveness of three MIPs, the demand characteristics of explicit mood-setting instructions and the mood congruency or incongruency of memories will be examined.

Mood and Memory

The study of the effects of moods on memory is a fundamental issue in the understanding of the relation between affect and cognition. Mood automatically primes those memories with which it is associated (Mayer & Hanson, 1995). This mechanism would produce mood congruent recall, that is, enhanced recall of material having an affective valence congruent with a person's mood (Mayer, Gayle, Meehan & Haarman, 1990). Parrott and Sabini (1990) argue that people attempt to regulate their mood states by recalling material incongruent with their present mood. These
incongruent memories occur when participants are not focusing on their moods and are unaware of the relevance of mood to the experiment. Mood incongruent recall occurred not only for participants in bad moods but also for participants in good moods. On the other hand, Parrott and Sabini (1990) also argue that the occurrence of mood incongruent recall in the laboratory refuted the hypothesis that this effect occurs only outside the laboratory, or, conversely, that mood congruent recall is revealed only under controlled laboratory conditions. Thus, mood incongruent recall is a mechanism that people use to regulate their moods either good or bad.

However, mood congruency exists when individuals find it easier to learn and recall material that matches their mood in emotional content. A happy person learns and recalls more pleasant material better; a sad person, more unpleasant material. Demand characteristics, which may occur when the participants are explicitly instructed to get into the specific mood, have no apparent influence on congruency when compared to participants in which mood induction instructions are omitted from the experimental procedure (Mayer, Gayle, Meehan & Haarman, 1990). Mood congruencies have been found in participants whose mood has been experimentally manipulated, but the mood congruent
judgment effects are also found with natural moods, in non-self-relevant material, and regardless of participant's gender, income, education, or age (Mayer, Gaschke, Braverman & Evans, 1992). Mood and memory constantly covary in everyday life and there is very strong evidence that mood congruent memory does occur with everyday natural moods (Mayer, McCormick & Strong, 1995).

However, Parrott and Sabini's (1990) study uses different kinds of memory tasks than Mayer, Gayle, Meehan and Haarman (1990). While Mayer, Gayle, Meehan and Haarman (1990) memory task consists of learning mood-congruent material and then remembering it, Parrott and Sabini's (1990) memory task consists of having the participants remember past events, and incongruent memories have been found when subtle means of mood induction are used. In the present study, the memory task will be similar to the one used by Parrott and Sabini (1990).

**Methods of Mood Induction**

When the impact of emotions on other processes is studied, the mood states of a person function methodologically as an independent variable. To vary the person's emotional states, the following procedures are known to have been used:
1) Pre-experimental classification: this classification is when the participants can be classified according to their initial emotional state. This is assessed at the beginning of the experimental session (Hettena & Ballif, 1981).

2) Comparison of non-clinical participants with clinical patients: This procedure consists of comparing non-clinical participants with "normal" behavior to clinical patients who are known to be in a certain mood state like clinical depression (Weingartner, Cohen, Murphy, Martello & Gerdt, 1981).

3) Using naturally occurring emotions: Specific naturally occurring environmental events as weather conditions have been shown to induce certain mood states (Parrott & Sabini, 1990; Mayer, McCormick & Strong, 1995).

4) Experimental mood induction: Mood states are experimentally induced using special mood induction procedures. Experimental mood induction, either in the laboratory or in the field, is the most effective method of varying mood states (Gerrards-Hesse, Spies & Hesse, 1994).

Categorization of Mood Induction Procedures

To distinguish different kinds of MIPs, Gerrads-Hesse, Spies and Hesse (1994) has categorized all mood induction
procedures into five groups according to the stimuli used to influence participants' moods.

The first classification category is MIPs based on the free mental generation of emotional states. The characteristic of this group of MIPs is that the induction leading to the intended mood state is not presented by the experimenter, but are mentally triggered by the participant. Hypnosis and imagination are some procedures included in this group.

Another induction category is MIPs aiming at the generation of emotionally relevant physiological states. The systematic variation of physiological states mostly in combination with a variation of situational stimuli is used as a procedure to influence mood states. One example of this group is the Drug MIP, using a drug or a placebo as a mood-inducing device. Also Facial Expression MIP which requires participants to contract and relax different muscles to produce a frown or a smile, thereby inducing a negative or positive mood (Laird, Wagner, Halal & Szegda, 1982).

The third category is MIPs based on the presentation of need-related emotional situations. This group of procedures exposes participants to situations activating a certain need, such as the need for achievement or affiliation. In
the need for achievement, the Success/Failure MIP is administered. Participants are given false-positive or false-negative feedback concerning their performance in a test alleged mainly to assess cognitive abilities. In the need for affiliation, the Social Interaction MIP exposes participants to certain social interactions arranged by the experimenter in order to induce a mood state.

An additional categorization is MIPs based on the presentation of emotional-inducing material. In this group of procedures, the experimenter present emotional stimuli without explicit instructing participants to get into the mood state suggested. It is assumed that the emotional-inducing material will influence a person's mood automatically. MIPs in this group include the Film/Story MIP. This procedure makes use of the phenomenon that one's mood can change according to the emotional quality of a film one sees or a story one reads. The Music MIP presents a piece of music without emphasizing its emotional character. The Gift MIP assumes that most people are elated when they are offered an unexpected gift.

The last categorization of procedures is MIPs based on the guided mental generation of emotional states. In this group, emotion-inducing material is presented to the participant with the additional instruction to get into the
suggested mood state. The Velten MIP uses self-referent statements describing positive or negative self-evaluations with additional instruction to get into the suggested mood. The Film/Story MIP and the Music MIP are also included in this group but with the addition of explicit instructions. The Film/Story MIP and the Music MIP with the explicit instruction are denominated by a "+" sign, indicating that the explicit instruction is given to the participant in conjunction to the Film/Story or the Music (Film/story+ MIP; Music+ MIP).

Effectiveness and Demand Characteristics

It has been demonstrated that mood induction in the laboratory is a strong manipulation for mood-related studies. However, there has been some controversy on which MIP is more effective or will induce a stronger mood state according to which specific MIP is used and to demand effects. Westermann, Spies, Stahl and Hesse (1996) argue that the Film/Story MIP is the most effective MIP, inducing both positive and negative mood states with the effects especially large when participants are explicitly instructed to enter the specific mood state. Clark (1983) suggests the Velten MIP affects a larger number of people, copying the effects of naturally occurring moods. On the other hand,
Pignatiello, Camp, Elder and Rasar, (1989) indicate that the Music MIP has fewer, less overt demand characteristics than the Velten MIP. Similar findings suggest that Music MIP may be a useful laboratory method for studying the psychological effects of mood under controlled conditions (Kenealy, 1988). However, Brown and Mankowski (1993) found that the Velten MIP produced stronger moods than a musical induction.

Demand characteristics pose a problem to the assessment of the effectiveness of mood induction procedures. One can argue that participants do not really achieve the mood state to be induced but simply pretend to be in the desired mood because they guess the purpose of the study and want to comply with experimental demands. One possible strategy to control the effects of demand characteristics is to deceive the participant about the true purpose of the study (Kenealy, 1988), or to use control groups (Westermann, Spies, Stahl & Hesse, 1996). The present study will use a deceiving or distracting cover story with no mood-setting instructions to minimize demand characteristics.

Demand effects are said to be most likely to occur if participants are explicitly instructed to try to enter a specific mood state. However, it may also be claimed that explicit instructions help participants to really get into the intended mood state (Westermann, Spies, Stahl & Hesse,
1986). Therefore, knowing the purpose of the study makes it possible for participants to support the manipulation by using, for instance, idiosyncratic ways of mood induction.

The purpose of the present study is to compare the effectiveness of three MIPs at two levels of mood-related instructions. One level is based on the presentation of emotion-inducing material (Velten, Film and Music) and the other level is based on the guided mental generation of emotional states (Velten+ MIP, Film+ MIP and Music+ MIP). The main objective is to assess the demand effects of the explicit instructions and their suggestibility. Each procedure is going to be used as a "happy" mood induction and only one gender is going to be tested to avoid gender differences.

Mood Induction Procedures

Velten

The Velten MIP is the most widely used procedure. It was constructed specifically to induce moods. Elation, depression and neutral moods are commonly used. The elation and depression treatments successfully induce elation and depression (Velten, 1968). Duration of the effect of the Velten MIP and the effectiveness of a strategy for the
residual negative effects have been experimentally examined. Residual negative moods were effectively removed by the reading of a subset of elation statements used during elation induction (Frost & Green, 1982). Some researchers explored the possibility that mood checklist pretesting influences the impact of the Velten MIP (Nagata & Triweiler, 1988). In this study, all participants completed a multiple affective adjective checklist immediately after completing the Velten MIP. In addition, half of the participants completed a multiple affective checklist as a pretest as well. Other researchers have questioned the "true" induction and the demand condition aspects of the Velten MIP by assessing the impact of personality traits, gender of the participants and different experimenters (Lewis & Harder, 1988). The results showed that personality attributes do not affect the procedure, although participants' gender and experimenter effects may well affect response to the induction. In addition, anxiety, hostility and depression have been induced and reversed by the Velten MIP (Cairns & Norton, 1988).

The Velten in the Present Study

The Velten MIP consists of a series of self-referent
statements to induce mood states. This method is appropriate to develop mood induction. The Velten MIP has the potential for the experimental induction and study of elation, depression and other moods such as fear and arousal (Velten, 1968). For the purpose of this study, only happy mood is going to be induced and twenty statements from the original forty statements are going to be used. Some of the happy self-referent statements are: "I have complete confidence in myself.", "Things look good. Things look great." and "I feel great!!!" (Appendix A).

Before reading the statements, one group of participants was given a page-long written explicit instruction to get into the suggested mood. The other participants’ group did not have the page-long mood-setting instruction. Instead they will read a cover story or disguise on "cognitive processes" with no mood-setting.

**Film**

The presentation of a film is another procedure used to induce moods in the laboratory. Studies using Film MIP includes a study testing the hypothesis that effort exerted under conditions of high task orientation or in response to a difficult task can neutralize previously induced negative and positive moods (Erber & Tesser, 1992). To induce the
mood, movie clips twenty minutes long were created to induce happy, sad and neutral mood states. Rock music video programs have also been used to examine the relationship of scores on sex guilt and mood states (Prersot, 1993). The three video presentations included sexual rock music video, rock concert video and neutral travelogue. The effect of mood on two cognitive processes, memorization and time perception has also been examined through the use of the Film MIP (Chebat, Gélinas-Chebat, Vaninski & Filiatrult, 1995). Five minute videos were constructed to induce happy or sad mood, then participants completed a mood questionnaire and a questionnaire regarding time estimate and waiting time acceptance. Furthermore, the presentation of the Film MIP has been used to study the influence of mood states on perception of task characteristics and task satisfaction (Kraiger, Billings & Isen, 1989). Comedy video tapes were showed to induce happy mood. Task characteristics and task satisfaction were assessed by a five-point scale.

The Film in the Present Study

The Film MIP consists of presenting a film clip of happy content. This film clip is an excerpt of a Saturday Night Live skit with Robin Williams as a bungling President
Reagan lasting about five minutes. Before watching the film clip, one group of participants read the page-long written explicit instruction. The other participants' group did not have the page long written mood-setting instructions. Instead they were given a cover story or disguise with no mood-setting.

Music

The Music MIP has been used to investigate the effects of happy and sad behavior and self-reported mood, and to assess the contribution of explicit demand characteristics to the procedure (Kenealy, 1988). Happy induction, sad induction and neutral induction were compared to demand sad induction and demand happy induction, where participants were instructed that people generally felt happy or sad after listening to the music. These conditions were also compared to counter-demand happy induction and counter-demand sad induction, where participants were instructed that due to the so-called "social comparison effect" people who listened to this music tended to feel the opposite emotion. Music MIP has also been used as an alternative to other MIPs such as the Velten MIP (Clark, 1983). The main aim was to produce a procedure which induced an analogue of naturally occurring depressed mood which was at least as
good as that produced by the Velten MIP and which affected a larger number of people. The need for an alternative to the Velten MIP has prompted investigators to develop a nonverbal Music MIP (Pignatiello, Camp & Rasar, 1986). Nonlyrical musical selections have been chosen on the basis of pitch, mode, loudness, melody and tempo. Constraints on the effect of mood on memory have been studied using Music MIP (Clark & Teasdale, 1985). Verbal material and intentional recall were used in an attempt to model everyday memory processes. The relationship between self-focused attention and mood states has also been examined (Wood, Saltzberg & Goldsamt, 1990), indicating that affect induces self-focus. The effects of Music MIP on creativity have been tested by presenting the music with happy, depressed or neutral mood content and then giving a creativity measure (Adaman & Blaney, 1995). The creativity measures administered to each group revealed that participants in the happy and depressed groups showed significantly greater creativity than participants in the neutral group.

The Music MIP in the Present Study

The Music MIP was developed by Pignatielli, Camp and Rasar (1986), specifically as an alternative to the Velten MIP. The selected musical piece for the present study is a
combination of "Divertimento" by Mozart, and "Coppelia" by Delibes, lasting about five minutes. Before listening to the music, one group of participants read the page-long instruction to get into the suggested mood. The other participants' group did not have the page-long mood-setting instructions. Instead they will be given the cover story or disguise with no mood-setting.

**Hypotheses**

Previous research has demonstrated that instructions were both necessary and sufficient to produce change on mood sensitive measures (Lenton & Martin, 1991). The present study will test the hypothesis that the Film with Explicit Instructions is going be the more effective Mood Induction Procedure followed by the Film with No Instructions. Both Film conditions are expected to be the strongest. According to Westermann, Spies, Stahl and Hesse (1996), the Film/Story MIP with explicit instructions is clearly the most potent manipulator of elated mood states.

The Velten and Music Mood Induction Procedures for elated mood states are relatively equal (Westerman, Spies, Stahl & Hesse, 1996). Another hypothesis is that the Velten and the Music procedures will produce a similar effect, with the Explicit Instruction conditions more effective with the
Velten and the Music Mood Induction Procedure more effective with No Instructions. The effects tend to be smaller when demand characteristics are controlled or the participants are not informed about the purpose of the experiment (Westermann, Spies, Stahl & Hesse, 1996).

In addition, mood congruent recall is expected for all three Mood Induction Procedures groups with Explicit Instructions. Mood incongruent recall is expected for the groups with No Instructions. Parrott and Sabini (1990) have found similar results suggesting that incongruent recall occurs when participants are unaware of the pertinence of their mood to the experiment. Parrott and Sabini (1990) also used memories from the past, unlike Mayer, Meeehan and Haarman (1990) that used a memorization task. These findings are supported by the ironic process theory which suggests that the potential for ironic effects exists because of the nature of the processes that allow us the normal mental control we enjoy (Wegner, Erber & Zanakos, 1993). The intentional operating process is what we sense as our conscious activity when we try to achieve mental control. In trying to be happy, for example, a participant may deliberately and consciously select happy thoughts from memory. On the other hand, the ironic process is usually not part of our conscious awareness of what we are doing
when we exercise mental control. That is, when a participant is instructed not to enter into a happy mood, the process works in the background to check for when happy thoughts occur to maintain mental control (Wegner, Erber & Zanakos, 1993).
CHAPTER II

METHOD

Participants and Design

Sixty college students participated in the study on a voluntary basis. A 2 x 3 (Instructions x Mood Induction Procedure) between subjects factorial design was used, presenting three procedures (Velten, Music and Film) with two instruction levels each (Explicit Instructions and No Instructions). Each experimental condition consisted of ten female participants, with participants tested individually. All the participants were San Antonio College students enrolled in introductory college courses. A total of sixty participants were tested. Of the sixty participants, thirty-six were Hispanic (69%), twenty Caucasian (33.33%), and four African-American (6.66%).

Procedures and Materials

All participants followed the same procedure. At the beginning of the experimental session, the participant signed an informed consent form. This form explained the basic procedure in sufficient detail that the participant can make an informed consent choice as to participate or not, the expected duration of the study and the privacy and
confidentiality of the data (Appendix B). All participants were escorted into a small room with either a television set and a VCR for the Film conditions, an audiotape player for the Music conditions, or just desks for the Velten conditions. After entering the room, they received a page-long written "instructions." For the three MIPs (Velten, Film and Music) with Explicit Instructions, participants were instructed that they will be either reading a series of statements, watching a film or listening to a musical piece that represents a happy mood. They were instructed to be receptive to the idea and to allow the idea to act on them without interference; to experience each idea and to concentrate their full attention; to exclude other ideas which are unrelated to the mood; to talk themselves into the mood and to experience the mood as well as they can (Appendices C, D & E). For the three MIPs (Velten, Film and Music) with No Instructions, participants received a cover story or disguise. The no mood-setting “instructions” content is a paragraph about cognitive process describing how we cannot see the processes by which an eight-month-old discovers an object hidden under a blanket, or how a seven-year-old computes a math problem (Appendices F, G & H).

After the participant read the "instructions," the MIP was presented. In the Film condition, the experimenter
entered the room and started the video tape. In the Music condition, the experimenter entered the room and started the music. For the Velten condition, the experimenter entered an adjacent room and using a stop watch, instructed the participant to turn and read the next statement every time they heard the beep (20 seconds).

Following the MIP, participants were asked in a fourteen-item self-description scale to describe their mood. Immediately after the self-description scale, memory recall was tested by asking the participants to remember and write about a past event. At the end of the session, participants were debriefed by explaining the purpose of the study. They were told that the study in which they just participated was conducted to investigate which mood induction procedure is better to induce a positive mood. Participants were also told that the last part in which they thought and wrote about an event was to see how they would react to being in a particular mood. That is, would they recall something similar or something dissimilar to the mood (Appendix I).

Dependent Measures

Momentary Self-Description Scale

Participants' mood was measured using an adjective
list. This self-description scale contains fourteen adjectives. The adjectives are: good, happy, miserable, cheerful, depressed, clam, sad, relaxed, delighted, anxious, energetic, aroused, tense and excited. Participants were asked to describe how they were feeling at the present time and to record their answers by circling the appropriate number presented in the scale below. By circling five-point scales (1 = not at all; 2 = slightly; 3 = moderately; 4 = considerably; 5 = very strongly), participants indicated the degree to which each word described the way they felt (Appendix J).

**Story Recall Instructions**

The story recall was conducted after the self-description scale. Participants were told that it was a second experiment about how people remember and how remembering one thing influences the way we remember other things. They were asked to remember and write as vividly as they can about an event or situation of their recent past; to see all the details of the situation; to see the people or objects; to hear the sounds; to experience the event happening to them; to think the thoughts they actually thought and to feel the feelings they actually felt in the situation; and to react as if it were happening now.
(Appendix K). Later, two independent judges rated the content of the event written by the participants. The judges evaluated the event as a happy memory or as a sad memory on a five-point scale (1 = very sad; 2 = sad; 3 = neutral; 4 = happy; 5 = very happy). The judges were blind to the condition under which the participant was participating. Initially, the judges disagree on two story’s ratings (The initial agreement for the two judges’ rating was 96.6%). After a second rating, they agreed on the ratings for each story.
CHAPTER III

RESULTS

Mood Induction

To test the effectiveness of the mood induction procedures, the fourteen adjectives were grouped into two dependent variables. One dependent variable is a positivity measure. This dependent variable consists of the average of nine positive and negative adjectives. The negative-valenced adjectives were recoded so that higher scores meant more positivity and the adjectives were computed into a single measure. The adjectives are: good, happy, miserable, cheerful, depressed, sad, delighted, tense and excited. Cronbach’s alpha for the positivity measure is .77. Another dependent variable is an activation measure consisting of the average of four adjectives, measuring the arousal level. The recoded and computed adjectives for the activation measure are: calm, relaxed, energetic and aroused. The reliability (Cronbach’s alpha) for the activation measure was low, .256.

Analysis of the positivity measure revealed that there were no significant differences, Induction $F(2,54) = 0.451$; Instructions $F (1,54) = 0.663$; Interaction $F (2, 54) = 1.60$. It should be noted that the overall mean for the six
conditions was 4.13. This result suggests that all mood induction procedures were effective in producing happy, positive moods. The analysis of variance table for the positivity measure is in Appendix L.

The 3 (Induction) by 2 (Instructions) ANOVA on the activation measure revealed a significant interaction, $F(2, 54) = 3.843, p = .028$. Simple effects analyses using Newman-Keuls revealed an activation difference among Mood Induction Procedures under the Explicit Instructions condition. The Velten MIP and the Music MIP were more successful than the Film MIP in producing activation in Explicit Instruction conditions. The average scores of the activation measure for the Mood Induction Procedures under Explicit Instructions and No Instructions Conditions are plotted in Figure 1. The means and standard deviations are reported in Table 1. There were no differences under the No Instructions condition. The analysis of variance table is presented in Appendix M.
Figure 1. Average of Adjective Activation Scores After Velten, Music, and Film Mood Induction under Explicit Instruction and No Instructions Conditions.
Table 1

Means and Standard Deviations of the Activation Measure for MIPs under Explicit Instructions and No Instructions Condition.

<table>
<thead>
<tr>
<th>Mood Induction Procedure</th>
<th>Explicit Instructions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
</tr>
<tr>
<td>Velten+</td>
<td>2.900</td>
<td>.5426</td>
<td></td>
</tr>
<tr>
<td>Music+</td>
<td>3.050</td>
<td>.8233</td>
<td></td>
</tr>
<tr>
<td>Film+</td>
<td>2.150</td>
<td>.3162</td>
<td></td>
</tr>
<tr>
<td>No Instructions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Velten</td>
<td>2.600</td>
<td>.7923</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>2.450</td>
<td>.8882</td>
<td></td>
</tr>
<tr>
<td>Film</td>
<td>2.700</td>
<td>.5375</td>
<td></td>
</tr>
</tbody>
</table>
Components of the Activation Measure

Because the reliability of the activation measure was low, Cronbach's alpha = .256, it was necessary to analyze each of the four activation measures. There were no significant differences on the "relaxed" measure. There were significant main effects for mood induction procedures on the "calm" measure; $F(2, 54) = 3.66, p = .032$; and the "energetic" measure; $F(2, 54) = 3.16, p = .050$. Newman-Keuls analyses showed that participants were more calm in the Velten MIP than in the Music MIP and that they were more energetic in the Velten MIP than in the Music MIP. ANOVA tables for these three measures are in Appendices N, O, and P.

The "aroused" measure proved to be the most sensitive one. The 3 (Induction) by 2 (Instructions) ANOVA on the "aroused" measure revealed a significant main effect for Induction; $F(2, 54) = 5.74, p = .005$; and a significant interaction, $F(2, 54) = 3.99, p = .024$. Newman-Keuls analyses showed that participants were more aroused in the Music MIP and the Velten MIP than the Film MIP under the Explicit Instructions conditions. There were no differences in arousal among the procedures under the No Instructions conditions. Averages for the "aroused" scores are plotted in Figure 2. The means and standard deviations are reported
The ANOVA Table for the Aroused measure is in Appendix Q.

### Table 2

Means and Standard Deviations of the Aroused Measure for MIP’s under Explicit Instructions and No Instructions Conditions

<table>
<thead>
<tr>
<th>Mood Induction Procedure</th>
<th>Explicit Instructions</th>
<th>No Instructions</th>
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<tr>
<td></td>
<td>Means</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Velten+MIP</td>
<td>2.800</td>
<td>1.2293</td>
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<tr>
<td>Music+MIP</td>
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<td>1.4298</td>
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<tr>
<td>Film+MIP</td>
<td>1.000</td>
<td>.000000</td>
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</table>
Figure 2. Average of Aroused Scores After Velten, Music and Film Mood Inductions Under Instructions Conditions
Mood Congruency

The memories were analyzed using a 2(instructions) by 3(mood induction procedure) ANOVA. The main effect for Mood Induction Procedure and the Instructions x Mood Induction Procedure interaction effect were significant and the F-ratio was the same for both factors, $F(2,54) = 4.593, p = .014$.

To discover the nature of the interaction, an analysis of the simple effects was undertaken. One-way ANOVAs revealed an effect approaching significance between Explicit Instructions and No Instructions for the Velten MIP ($F(1,18) = 3.1765, p = .0916$). The Film MIP produced an unexpected finding. The story emotional ratings were less positive under the Explicit Instructions than in the No Instructions condition for the Film MIP, $F(1,18) = 8.7273, p = .0085$). The means of the judges' emotional ratings of recalled stories depending on Mood induction procedures and Mood Instructions are plotted in Figure 3.
Correlational Analyses of Mood Congruency

It was decided to examine correlations between mood activation scores and emotional rating of stories recalled to evaluate the congruency between the mood induced and the emotionality of recall. Since mood inductions were positive in all conditions, more positive stories were mood
congruent and less positive stories were mood incongruent. The more the positive correlation between the two variables, the more congruent the recall.

A positive correlation between mood activation and story emotional rating under Explicit Instructions indicate congruent recall, \( r(30) = .7154, \ p = .001 \). The correlation between mood activation and story emotional rating under the No Instructions condition indicate less congruent recall, \( r(30) = .3064, \ p = .100 \). The difference between the two correlations indicating more congruent recall under explicit instructions was significant, \( z_r = 2.14, \ p < .05 \). It was decided to examine the correlations between the four component measures of the activation measure and the story emotional rating measures because of the low reliability of the activation measure. The correlations between "calm", "relaxed", "energetic" and the story emotional rating under Explicit Instructions and under No Instructions were not significantly different. However, there were substantial differences in the correlations between "aroused" and the emotional ratings under the Explicit Instructions conditions; \( r(30) = .8016, \ p < .05 \); and the No Instructions conditions; \( r(30) = .2306, \ p = .18, \ p < .001 \). These results indicate recall was more mood congruent under Explicit Instructions than under No Mood Instructions. The
correlation matrices are reported in Appendix R.
Mood Induction

The findings in this research indicate that all three mood induction procedures effectively induce a positive mood. This result is inconsistent with the hypothesis that the Film MIP would be strongest under both instruction conditions based on Westermann’s et al. (1996) findings.

The notion that the Velten mood induction procedure is an effective procedure to induce and remove different moods is supported by Frost and Green (1982). Moreover, the procedure is appropriate to develop moods and has potential for the experimental induction and study of elation (Velten, 1968). The music mood induction procedure was developed as an alternative for other procedures. This procedure has successfully induced positive moods in previous studies (Pignatello, Camp & Rasar, 1986; Clark & Teasdale, 1985). In addition, using a film to induce positive mood has been widely and effectively used (Erber & Tesser, 1992; Kraiger, Billings & Isen, 1989).

Furthermore, the no instructions condition or the “disguise” was not significantly different than the explicit instructions condition for all the mood induction
procedures. Either deceiving the participants about the true purpose of the study or explicitly instructing them to get into the mood effectively induced positive moods. Participants experienced positive mood when reading the statements, listening to music or watching the Robin Williams video skit. This finding supports Kenealy’s (1988) argument that one possible strategy to control the effects of demand characteristics is to deceive the participants regarding the true purpose of the study. Regardless of whether an investigation uses high demand characteristic instructions or subtle, low demand instructions does not affect mood induction. So low demand ones should be used if one is interested only in inducing positive moods. These results also support Westermann’s et al. argument that effects are especially large when participants are explicitly instructed to enter in the specific mood state.

The significant interaction effect attained on the activation measure indicates that the Velten and the music mood induction procedures were more successful than the film in creating more aroused moods in the explicit instructions than in the no instructions condition. Specifically, participants were more calm and energetic in the Velten and music than in the film mood induction procedure. In addition, the participants were more aroused
in the Velten and music than in the film mood induction procedure with the explicit instructions. This result suggests that participants were more aroused because of the suggestibility of the explicit instructions. The original Velten mood induction procedure includes the explicit instructions as part of the procedure. Both the Velten and the music MIP are more blatant or obvious with the explicit instructions than without, therefore the arousing effect was bigger for those conditions than the film one which may not have fit as well with the instructions.

Mood Congruency

An analysis of variance was performed on the story ratings to discover the effects of these mood induction experiences on subsequent recall. The significant interaction and subsequent comparisons indicate that more incongruent, negative mood stories were recalled after the Velten, No Instructions and Film, Explicit Instructions conditions. Parrott and Sabini (1990) found that more mood-incongruent stories were recalled after subtle mood inductions and more mood-congruent stories were recalled after blatant mood inductions. Since the no mood instructions condition is more subtle than the explicit instructions condition; the Velten results are consistent
with their findings, but the film mood induction results are inconsistent with the findings. Perhaps these results occurred because the explicit mood instructions were part of the original Velten procedures and replacing them makes the induction less blatant, while the explicit instructions with the comedy film don’t have the same initial induction effects.

Another way to examine mood congruency is by correlating the obtained mood activation ratings with the emotional ratings of the stories under explicit instructions and no instructions separately. A more positive correlation between activation and story emotions indicates more mood-congruent recall and a less positive correlation indicates mood-incongruent recall. Parrott and Sabini’s results imply that mood congruent recall should occur under explicit instructions and that mood incongruent recall should occur under no mood-setting instructions. Other investigators (e.g., Mayer, Meehan & Haarmen, 1990) suggest congruent recall should occur under all conditions, even naturalistic or subtle mood induction conditions. The results support Parrott and Sabini’s position rather than Mayer et al..

Parrott and Sabini state that mood regulation is why incongruent recall occurs with the stories. Apparently
when the connection between arousal and one’s mood is most clear (Explicit Instructions), then the need to restore mood neutrality is not strong and mood congruency occurs. But when the connection is vague (No Instructions), people need to neutralize the mood. It is as if this emotional experience without apparent basis stimulates the mood regulation or neutralization process.

These results indicate that the arousal component of moods must be taken into consideration. Arousal seems to be an important aspect of mood induction since it is associated with type of stories recalled and the positivity of the stories. Other aspects of moods such as positivity or even some of the activation items do not seem to engage the mood regulation process as much.

Replication of this study with other music choices and other comedy tapes would be advisable for future studies. Likewise, replication of this study with induction of negative and neutral moods is desirable. Interestingly, Parrott and Sabini found that recall of mood-incongruent stories in their subtle or natural mood induction studies occurred as much or more in the positive mood conditions as in the negative ones. So recalling mood-incongruent stories to achieve mood regulation appears to occur in both positive and negative moods.
APPENDIX A

Velten Statements

1. I have complete confidence in myself.

2. If your attitude is good, then things are good, and my attitude is good.

3. Sometimes it feels good to get away from the noise by going to a park.

4. I'm pleased that most people are so friendly to me.

5. My parents are pretty proud of me most of the time.

6. I have a fresh outlook on life. I'm secure in my optimism.

7. My judgment about most things is sound.

8. I feel enthusiastic and confident now.

9. I like to imagine myself high up on a mountain top, fresh air, so quiet.

10. I feel laid-back and content.

11. I know that in the future I won't let so-called "problems" get me down.

12. I'm feeling amazingly good today!

13. Things look good. Things look great!

14. I can find the good in almost anything.

15. I feel so happy and playful today.

16. This is one of those days I'm ready to go.

17. I'm full of energy and ambition.

18. Life is firmly in my control.

19. I feel like bursting with laughter--I wish somebody would tell me a joke and give me an excuse!
20. I feel great!!!
APPENDIX B

INFORMED CONSENT TO PARTICIPATE AS A RESEARCH PARTICIPANT

EXPERIMENT TITLE: Comparative study

INVESTIGATOR: Lourdes M. de la Uz

DESCRIPTION AND DURATION OF THE EXPERIMENT:

You will be asked to take a few psychological tests. Among the experiences in this experiment will be reading a series of statements, watching a video or listening to a musical piece. Later there will be a memory task. Please listen to and follow the instructions carefully. The whole session will take no longer than 15 minutes.

CONFIDENTIALITY:

All records of your participation will remain confidential and your name will not appear in any of these results.

CONSENT TO PARTICIPATE:

I have voluntarily decided to participate in this experiment. Questions I have about this experiment, the procedures involved, and my participation have been answered. I understand that I am entitled to terminate my participation at any time without any penalty.

Signature of participant                                      Date

If you have any questions about any aspect of this study or the results, please contact: Lourdes M. de la Uz at 210-979-0476 or Email at LUEM@aol.com.
APPENDIX C

Velten With Explicit Instructions.

In this experiment, I will be reading a series of statements that represent a happy mood. I will be willing to be receptive and responsive to the idea in each statement, and allow each idea to act on me without interference. First, I will read each statement at a pace of 20 sec. per statement concentrating on its intended mood. 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 and concentrate my full attention on it. I will exclude other ideas which are unrelated to the mood. I will respond to the feeling suggested by each item. I will then think of myself, with as much clarity and realism as possible, as definitely being in that mood state. I can talk myself into a mood. Some of these statements may have no relation to anything I have thought, said or done. Yet, I will find it quite easy to accept and feel these emotions. I will begin the series of statements soon. I will read each to myself. Then I will experience the mood as well as I can and continue to do so as I read the cards and I move further into the mood. After reading statement, I'll sit for a minute and think about the things in my life that make me feel like the
suggested mood. This way, my mood will build even further.
APPENDIX D

Film With Explicit Instructions.

In this experiment, I will be watching a film clip that represents a happy mood. I will be willing to be receptive and responsive to the idea in the film and allow this idea to act on me without interference.

First, I will watch the film, concentrating on its intended mood. Then I'll go over the idea again and again in my head with the determination and willingness to really believe it. I will experience each idea and concentrate my full attention on it. I will exclude other ideas which are unrelated to the mood. I will respond to the feeling suggested by the film. I will then think of myself, with as much clarity and realism as possible, as definitely being in that mood state.

I can talk myself into a mood. This film may have no relation to anything I have thought, said or done. Yet, I will find it quite easy to accept and feel these emotions.

I will begin watching the film soon. I will experience the mood as well as I can and continue to do so as I watch and I move further into the mood. After watching the film, I'll sit for a minute and think about the things in my life that make me feel like the suggested mood. This way, my mood will build even further.
APPENDIX E

Music With Explicit Instructions.

In this experiment, I will be listening a music piece that represents a happy mood. I will be willing to be receptive and responsive to the idea in the music and allow this idea to act on me without interference.

First, I will listen to the music, concentrating on its intended mood. Then I'll go over the idea again and again in my head with the determination and willingness to really believe it. I will experience each idea and concentrate my full attention on it. I will exclude other ideas which are unrelated to the mood. I will respond to the feeling suggested by the music. I will then think of myself, with as much clarity and realism as possible, as definitely being in that mood state.

I can talk myself into a mood. This music may have no relation to anything I have thought, said or done. Yet, I will find it quite easy to accept and feel these emotions.

I will begin listening to the music soon. I will experience the mood as well as I can and continue to do so as I listen and I move further into the mood. After listening to the music, I'll sit for a minute and think about the things in my life that make me feel like the suggested mood. This way, my mood will build even further.
APPENDIX F

Velten With No Instructions

Cognition refers to the processes or faculties by which knowledge is acquired and manipulated. Cognition is usually thought of as being mental. That is, cognition is reflection of a mind. It is not directly observable. We cannot see the process whereby an 8-month-old discovers that the Mickey Mouse doll hidden under the blanket continues to exist even though it is out of her sight; nor can we directly assess the steps a 7-year-old takes to compute the answer to the problem 15 - 9 =. Although we cannot see or directly measure what underlines children's performance on these and other tasks, we can infer what is going on in their heads by assessing certain aspects of their behavior.


In this experiment on cognition, you will be reading a series of statements. They are designed to be read individually and quietly and at a pace of 20 seconds per statement. You will begin reading a series of statements in a few moments. After reading the statements please wait and sit for a minute.
APPENDIX G

Film With No Instructions

Cognition refers to the processes or faculties by which knowledge is acquired and manipulated. Cognition is usually thought of as being mental. That is, cognition is reflection of a mind. It is not directly observable. We cannot see the process whereby an 8-month-old discovers that the Mickey Mouse doll hidden under the blanket continues to exist even though it is out of her sight; nor can we directly assess the steps a 7-year-old takes to compute the answer to the problem 15 - 9 =. Although we cannot see or directly measure what underlines children's performance on these and other tasks, we can infer what is going on in their heads by assessing certain aspects of their behavior.


In this experiment on cognition, you will be watching a film clip. It last about 5 minutes and is designed to be watched individually and quietly. You will begin watching a film clip in a few moments. After watching the film clip please wait and sit for a minute.
APPENDIX H

Music With No Instructions

Cognition refers to the processes or faculties by which knowledge is acquired and manipulated. Cognition is usually thought of as being mental. That is, cognition is reflection of a mind. It is not directly observable. We cannot see the process whereby an 8-month-old discovers that the Mickey Mouse doll hidden under the blanket continues to exist even though it is out of her sight; nor can we directly assess the steps a 7-year-old takes to compute the answer to the problem $15 - 9 =$. Although we cannot see or directly measure what underlines children's performance on these and other tasks, we can infer what is going on in their heads by assessing certain aspects of their behavior.


In this experiment on cognition, you will be listening to a musical piece. It last about 5 minutes and is designed to be listened individually and quietly. You will begin listening the musical piece in a few moments. After listening to the musical piece please wait and sit for a minute.
APPENDIX I

MOOD INDUCTION PROCEDURES & MOOD CONGRUENT RECALL

DEBRIEFING

The study you just participated in was conducted to investigate which mood induction procedure is better to induce a positive mood. You either read 20 statements, watched a video, or listened to a musical piece to get you in a positive mood. Later you were asked to describe how you felt to see if you were in the mood. The last part in which you thought about an event and then wrote about it was to see how you would react to being in a particular mood. That is, would you recall something similar or something dissimilar to the mood. If you are interested in finding out more about this topic, you might read:


You are not going to be evaluated personally in any way and your numbers will be entered anonymously along with everyone else's. It is very important that you keep this information confidential. As you probably realize, if you knew the information I just told you before you participated, it would have greatly affected your behavior. Other subjects would also be affected if they knew the purpose, so please keep this confidential. If you have any further questions about this study, you may call: Lourdes M. de la Uz at 210-979-0476 or Email at LUEM@aol.com.
APPENDIX J

Momentary Self-Description Scale

The scale below consists of words or phrases to describe yourself. Please describe how you are feeling at the present time. Record your answers on this sheet by circling the appropriate number. Presented below is the scale for indicating the degree to which each word describes the way you feel.

1 2 3 4 5
not at all slightly moderately considerably very strongly

Remember, you are requested to make your responses on the basis of the way you feel at this time. It is not necessary to spend a lot of time deciding on your answers; the first answer you decide on for a given word is probably the most valid.

1. good 1 2 3 4 5 8. relaxed 1 2 3 4 5
2. happy 1 2 3 4 5 9. delighted 1 2 3 4 5
3. miserable 1 2 3 4 5 10. anxious 1 2 3 4 5
4. cheerful 1 2 3 4 5 11. energetic 1 2 3 4 5
5. depressed 1 2 3 4 5 12. aroused 1 2 3 4 5
6. calm 1 2 3 4 5 13. tense 1 2 3 4 5
7. sad 1 2 3 4 5 14. excited 1 2 3 4 5
APPENDIX K

Instructions for Story Recall

This is the second experiment in this session. This experiment is about how people remember and how remembering one thing influences the way we remember other things. I would like you to remember and write about an event or situation in your recent past. Remember the situation as vividly as you can. Picture the events as they happened. See all the details of the situation. Picture in your "mind's eye" the surroundings as clearly as possible. See the people or objects; hear the sounds; experience the event happening to you. Think the thoughts you actually thought in this situation. Feel the very same feelings you felt. Let yourself react as if it were happening now. Please make sure you write down everything that goes through your mind.
APPENDIX L

Analysis of Variance Summary Table for Positivity Measure

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## APPENDIX M

### Analysis of Variance Summary Table for Activation Measure

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### APPENDIX O

#### Analysis of Variance a Summary Table for Calm Measure

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APPENDIX P

Analysis of Variance Summary Table for Energetic Measure

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## Analysis of Variance Summary Table for Aroused Measure

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**APPENDIX R**

--- Correlation Coefficients ---

Within Explicit Instructions conditions

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--- Correlation Coefficients ---

Within No Instructions conditions

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</table>

(Coefficient / (Cases) / 2-tailed Significance)
--- Correlation Coefficients ---

Within Explicit Instructions condition

<table>
<thead>
<tr>
<th>RATING</th>
<th>Calm</th>
<th>Relaxed</th>
<th>Energetic</th>
<th>Aroused</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATING</td>
<td>1.0000</td>
<td>.0956</td>
<td>.2420</td>
<td>.2700</td>
</tr>
<tr>
<td>( 30)</td>
<td>( 30)</td>
<td>( 30)</td>
<td>( 30)</td>
<td>( 30)</td>
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<tr>
<td>P= .</td>
<td>P= .615</td>
<td>P= .198</td>
<td>P= .149</td>
<td>P= .000</td>
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</tbody>
</table>

--- Correlation Coefficients ---

Within No Instructions condition

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<th>Aroused</th>
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</thead>
<tbody>
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<tr>
<td>P= .</td>
<td>P= .041</td>
<td>P= .451</td>
<td>P= .213</td>
<td>P= .220</td>
</tr>
</tbody>
</table>

(Coefficient / (Cases) / 2-tailed Significance)
References


Music Therapy. 16, 140-154.


Weingartner, H., Cohen, R. M., Murphy, D. L.,
