Effects of Mood State on Memory for Positive, Negative, Neutral, and Humorous Phrases in College Students

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https://dx.doi.org/doi:10.21220/s2-5xy1-mf69

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EFFECTS OF MOOD STATE ON MEMORY
FOR POSITIVE, NEGATIVE, NEUTRAL, AND HUMOROUS PHRASES
IN COLLEGE STUDENTS

A Thesis
Presented to
The Faculty of the Department of Psychology
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Arts

by
Cecile B. McAninch
1989
APPROVAL SHEET

This thesis is submitted in partial fulfillment of the requirements for the degree of

Master of Arts

Author

Approved April, 1989

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W. Larry Ventis, Ph.D.

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ACKNOWLEDGEMENTS

The author of this manuscript is grateful to Professor Peter Derks for his guidance and friendship throughout the past two years. The writer is also indebted to Professor W. Larry Ventis for his invaluable advice and sense of humor as co-chairman, and to Professor Herbert Friedman for his thoughtful comments. Finally, gratitude is due to Professors Cynthia Null and John Nezlek for their statistical expertise, and to Professor Kelly Shaver for his constant support.
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<td>1. Mean Numbers of Phrases Recalled by Mood State</td>
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This study evaluated the interaction of mood state (sad and happy) with memory for positively valenced, negatively valenced, neutral, and humorous phrases. Two hundred fifty-nine introductory psychology students completed two mood state questionnaires, the Profile of Mood States-Bipolar Form (POMS) and the Multiple Affect Adjective Checklist-Revised, state form (MAACL-R). They then read 100 randomly ordered phrases. The positive, negative, and neutral phrases were taken from the Velten (1968) mood induction statements. Humorous material was comprised of the funniest one- and two-line jokes from various joke books, as determined by student raters. Following a set of mathematical problems, subjects were tested for free recall of the stimulus material. Recall data were analyzed with a factorial 3 (mood state) by 4 (type of material) repeated measures analysis of variance. Pearson correlations were calculated between mood and memory. Happy subjects remembered significantly more positive material, while there was a nonsignificant tendency for sad subjects to remember more negatively valenced phrases. All subjects recalled more humorous than neutral, positively valenced, or negatively valenced material. Results are discussed in terms of semantic network theory and mood-congruent learning.
Effects of Mood State on Memory for Positive, Negative, Neutral, and Humorous Phrases in College Students
Introduction

The relationship between affective states and cognition has provoked extensive research, particularly regarding the apparently detrimental effect of depression on learning and memory. In an early review of memory for affective material, Zeller (1950) noted a tendency toward recall of affectively positive material, but concluded that Freudian repression of unpleasant associations was not adequately demonstrated. A more recent controversy in the mood and memory literature involves the existence of mood-congruent learning. Bower and his associates (Bower, 1987; Bower, Gilligan & Monteiro, 1981; Bower, Monteiro, & Gilligan, 1978; Mayer & Bower, 1985) have postulated a "semantic network" in which concepts (or ideas) are characterized by their configurations of associations to other ideas. Retrieval in such systems is assumed to occur by following associations out from some stimulus cues. This association-tracing process is presumed to arise by the spreading of activation along associative pathways radiating from the cues. [Thus,] events which evoke emotional reactions can become associated to those emotions by causal belongingness (Bower, 1987, p.443).

This semantic network theory gave rise to the notion of
mood-congruent learning, in which subjects in a particular mood state, such as happy or sad, tend to best remember material that corresponds with that state. For example, someone induced to feel sad will recall more sad than happy words from a list. Research on mood-congruent learning has been conducted using mood induction via hypnosis or affective statements (e.g., Bower, Gilligan, & Monteiro, 1981; Clark & Teasdale, 1985; Clark, Teasdale, Broadbent & Martin, 1983; Ellis, Thomas, & Rodriguez, 1984; Gerrig & Bower, 1982), clinically mood-disordered populations (e.g., Breslow, Kocsis, & Belkin, 1981; Burgess, Jones, Robertson, Radcliffe, & Emerson, 1981; Foa & McNally, 1986; Gotlib & McCann, 1984; MacLeod, Matthews, & Tata, 1986; Watts, McKenna, Sharrock, and Trezise, 1986) and mildly depressed college students (e.g., Hasher, Rose, Zacks, Sanft, & Doren, 1985).

Mood-congruent learning has been reliably demonstrated both with the psychiatric population and with mood induction techniques. Investigation of this phenomenon with naturally occurring mild depression in college students, however, has not yielded the expected results. Hasher, Rose, Zacks, Sanft, and Doren (1985) found mixed results, although the depressed subjects consistently recalled more negative than positive phrases. Analysis of variance revealed no significant interactions, and the only significant main
effect was that negative phrases were best recalled by all subjects. The authors concluded that depression does not lie on a continuum, with quantitative differences separating mild from moderate and moderate from severe, but claim that depression must differ qualitatively, and thus argue that "mild variations in mood seem not to have a profound impact on the recall performance of college students" (p. 116). On the other hand, any impact in this situation would certainly not be profound. Isen (1985) also suggests that dysphoric "normals" may differ cognitively and emotionally from the clinically depressed.

However, there is significant precedent for the continuum perspective of depression. Freud, for example, saw all behavior as a product of childhood experience and of the dynamics of the psychic forces. Abnormal behavior, from the Freudian view, issues from skewed dynamics or energy distribution. Everyone experiences depression, although severity affects its expression. The difference is one of degree, rather than of kind. From an entirely different theoretical perspective, behaviorists such as Skinner view all functioning as a product of learning. Thus, "normal" behavior results from positive reinforcement of adaptive responses, while "abnormal" (such as depressed) behavior may be due to extinction of positive reinforcement (e.g., Brannon & Nelson, 1987; Cole & Rehm, 1986; Miller, 1987).
Effects of Mood

Changing reinforcement contingencies may thus alleviate depression. Again, the range of functioning lies on a continuum; no qualitative differences separate "normal" from "abnormal".

Agreeing that degrees of depression lie on a continuum, Mayer and Bower (1985) and Guenther (1988) suggest that mood-congruent learning would occur in conjunction with natural dysphoric affect, although the experimental effects would be greatly diminished. As a result, possible methodological flaws could easily give rise to null results. In particular, Mayer and Bower (1985) suggest that the Hasher, Rose, Zacks, Sanft, and Doren (1985) use of the Beck Depression Inventory (BDI) and Multiple Affect Adjective Checklist (MAACL) tapped trait rather than the state depression necessary for mood-congruent learning. While a clinically depressed person (i.e., trait) may commonly recall more negative than positive material, someone mildly dysphoric might not demonstrate this effect reliably if currently experiencing positive affect. Therefore, it is prudent to determine the presence of dysphoric affect at the time of both acquisition and retrieval (i.e., state depression).

In addition, Mayer and Bower (1985) argue that only negative, and not positive, affect was measured. In other words, the Hasher, Rose, Zacks, Sanft, and Doren (1985) mood
extremes were only extreme for depression; the other "extreme" could have been neutral. The exclusion of a counterbalancing "elated" group constitutes one problem. Another is that the dichotomy of "depressed" and "nondepressed" leaves the possibility that other negative affective states, such as anger, hostility, etc., may have been included in the "nondepressed" group. Such a possibility might have precluded finding the hypothesized effect. The stimulus material was criticized for having disproportionate numbers of positive and negative idea units, and for linking these units semantically. One possible result of the latter difficulty is that if two positive idea units, or phrases, were linked with one negative unit, they might all be chunked together in memory and only a global positive phrase recalled. Also, the number of units recalled is greatly reduced. Finally, Hasher, Rose, Zacks, Sanft, and Doren (1985) employed as an intervening task mood scales which resembled the learning material and may have compromised the results. Ellis (1985) comments that the combination of mild mood fluctuations and a task with low encoding demands would tend not to show differences which may actually exist between the groups.

In a rebuttal, Hasher, Zacks, Rose, and Doren (1985) note that there is evidence that the BDI and MAACL measure state rather than trait depression, due to the fact that
scores vary over time; this controversy apparently remains unresolved (Watson, 1988). These authors also propose that "thematic intertwining," or not separating the positive and negative stimulus units, resembles real-life experience to a greater degree than does unit separation. For example, the daily events in a depressive's life are linked together, and yet the depressive still shows mood-congruent learning. However, in order to measure a particularly small effect, the greatest possible sensitivity, such as separating idea units to prevent chunking, seems prudent.

Studies of affect and memory have produced considerable debate concerning another issue, namely, the question of memory impairment in the depressed. While the majority of studies report a global memory deficit in depressed groups (e.g., Breslow, Kocsis, & Belkin, 1981; Ellis, Thomas, & Rodriguez; 1984; Henry, Weingartner, & Murphy, 1973), a few found no differences between depressed and nondepressed subjects (e.g., Gass & Russell, 1986; Griffin, Dember, & Warm, 1986; Williams, Little, Scates, & Blockman, 1987). These latter results were ascribed differentially to brain damage, lack of motivation, and self-deprecating cognitive distortions. In a review of the conflicting evidence, Johnson and Magaro (1987) concluded that null results were often due to methodological flaws or to inadequate samples. Johnson and Magaro (1987) proposed a model of memory
impairment based on reduced levels of effort, disorganized information processing, and severity of pathology. The latter criterion was based upon cognitive differences between pre- and posttreatment of clinical depressives with drugs and ECT. According to their model, evidence of global memory impairment is reliably demonstrable only in clinically disturbed populations. However, the authors do note that memory content appears to be mood-congruent. A related phenomenon is state-dependent learning, in which mood or other states are the same at encoding and retrieval. Rossi (1986) gives evidence for a psychophysiological basis of state-dependent memory and learning, in which the pituitary and hypothalamus modulate hormones released during stress, such as cortisol, a presumed mediator of learning and memory. In addition, Rossi (1986) states that disruption by stress of mood and memory may be relieved via drugs or hypnotherapy by restoring the body's natural rhythms. It is conceivable that mildly depressed college students, reflecting recall patterns of the more severely depressed, would show an overall reduction in memory in addition to the effects of mood-congruent learning.

In light of the conflicting findings of various studies on mood-congruent learning, further exploration seems warranted. If this phenomenon is demonstrable in clinically depressed groups, then it may also exist in a mildly
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depressed college population, assuming that degrees of depression lie on a continuum. One aim of the present study was to clarify the conflicting findings. Mildly dysphoric college students were expected to recall fewer phrases than students in a neutral or positive mood state. In addition, demonstration of mood-congruent learning was expected, in that depressed students were expected to remember more negative than positive material; the opposite result was expected for happy students.

Another issue affecting mood and memory is the impact of humorous stimuli. Leventhal and Safer (1977) argue for a close relationship between positive mood states and a sense of humor. This view was supported by correlations between the Profile of Mood States (POMS) and the Situational Humor Response Questionnaire (SHRQ), which assesses the use of humor in everyday and stressful situations (Lefcourt & Martin, 1986). Trice (1985) found that exposure to humorous stimuli alleviated negative affect following a learned helplessness paradigm. Baron (1978a, 1978b) demonstrated that both sexually exploitative and nonhostile forms of humor may decrease aggressive intent, as opposed to sexually nonexploitative and hostile forms.

In addition, according to Lewinsohn and colleagues (Lewinsohn & Graf, 1973; Lewinsohn & Libet, 1972; Lewinsohn, Youngren, & Grosscup, 1979), mood in the clinically
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depressed responds to pleasant and unpleasant stimuli; mood elevation may be obtained through pleasure. Assuming the experience of humor to be pleasant, these empirical findings could have important implications for the clinician. Indeed, humor has already been employed in the clinical setting with notable success. Ventis (1973) introduced the use of laughter in systematic desensitization. Since then, humor has been utilized in a variety of therapeutic situations, such as pain alleviation, refugee care, family therapy, aggression inhibition, coping with stress, logotherapy, and social skills training (e.g., Adams & McGuire, 1986; Burkle, 1983; Jackson & Chable, 1985; Prerost, 1983; Schill & O'Laughlin, 1984; Shaughnessy, 1984; Van Bourgondien & Mesibov, 1987; Weddige, 1986).

Aside from humor's impact on mood, positive effects on learning and memory have also been demonstrated. Humorously meaningful captions for nonsensical drawings have been found to aid memory in free recall, cued recall, and recognition tasks (Bower, Karlin, & Dueck, 1975; Klatzky & Rafnel, 1976; McAninch, 1989; Rafnel & Klatzky, 1978). Zillmann and Bryant (1983) found that humor in the classroom may foster attention and learning, although the effects are mixed.

Thus, a second goal of the present study was to further explore the role of humor in both memory and affect. To this end, humorous stimuli, comparable in length and format
to the positively-, negatively-, and neutrally-valenced stimuli, were introduced into the materials of this experiment. One relevant question concerned retention of the humorous stimuli in relation to the mood-congruent material. Naturally, in keeping with the semantic network theory, depressed subjects were expected to remember more negative than either positive or humorous material. However, due to its attention-focussing nature, these subjects were expected to recall more humorous than merely positive material. Happy subjects, on the other hand, should have exhibited greater recall for both positive and humorous than for negative stimuli. Both of the former could be considered mood-congruent for this group. In this context, given the more intensely positive nature of humor, and, again, it's attention-attracting quality, jokes should have been better remembered than simply statements of positive affect. A final matter of interest was whether the subjects' moods changed over the course of the experiment, although no specific hypotheses were advanced.
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Method

Subjects

Subjects were 259 male and female introductory psychology students who received one hour of research credit for participation, of the two hours required. Subjects participated in groups of approximately 25.

Materials

Materials included two mood state questionnaires, the Profile of Mood States-Bipolar Form (POMS, McNair, Lorr, & Droppelman, 1971) and the Multiple Affect Adjective Checklist-Revised, state form (MAACL-R, Zuckerman & Lubin, 1965). The POMS is a 65-item paper and pencil test which measures six dimensions of affect: composed-anxious, elated-depressed, agreeable-hostile, energetic-tired, clearheaded-confused, confident-unsure. The MAACL-R, consisting of 132 items, is also a paper and pencil test, measuring anxiety, depression, hostility, positive affect, and sensation-seeking (see Appendices A and B). Each measure takes about five minutes to complete. These two mood scales were chosen in part because each measures the extent of both positive and negative affect, as opposed to the BDI, used by Hasher, Rose, Zacks, Sanft and Doren (1985). Subjects may be divided into affective groups of sad, happy, and median, based on college norms of the POMS. In addition, a state rather than trait form of the MAACL-R
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was used, to insure valid measurement of mood at the time of testing. Finally, there is evidence that these scores fluctuate over time, indicating state rather than trait measurement (Hedges, Jandorf, & Stone, 1985; Pankrantz, Glaudin, & Goodmonson, 1972). Mayer and Bower (1985) had criticized the Hasher et. al (1985) study for measuring enduring affect with the BDI and with the original MAACL.

The stimulus materials consisted of 100 randomly ordered phrases presented in one of two differently ordered sets. Seventy-five of these were taken from the Velten (1968) technique of mood induction; 25 of each of these statements were negative, positive and neutral. The remaining 25 phrases were jokes of comparable length and format, culled from Bishop (1982), Bright (1978), Corbett (1980), Knott (1981, 1984), Mindess (1985), Orben (1979), Simonds, and Untermeyer (1946) (see Appendix C). The jokes were the 25 rated funniest of a total of 114 by a group of 25 students. Mean ratings for the included jokes ranged from 5.38 to 7.24, whereas those not included were rated between 2.19 and 5.29, on a scale of 1 to 10.

Material for the intervening task was a sheet of simple mathematical problems, following Bower, Gilligan, and Monteiro (1981) (see Appendix D).

Procedure

After reading and signing a consent form, each subject
filled out both a POMS and a MAACL-R. Subjects then read the 100 statements and jokes, which they were told would constitute a recall task. Next, they completed a sheet of mathematical problems for five minutes. Following this intervening task, subjects wrote down all of the previously-viewed statements and jokes that they could freely recall. Finally, each subject again completed a POMS and a MAACL-R. They were then debriefed.

An abstract of this paper was later posted for the subjects to review, in accordance with the ethical principles of the American Psychological Association (1984).
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Results

It was not possible to create three, or even two, groups of subjects with the depression subscale of the MAACL-R, as the scores were skewed away from depression. In addition, this subscale measures only one extreme of mood and not the other. Thus, experimental groups were created using college norms for the elated-depressed subscale of the POMS. T-scores of 55 and higher indicated happiness (98 subjects), 45 to 55 was intermediate or neutral (74 subjects), and below 45 indicated dysphoria (87 subjects). A 3 (mood state) by 4 (type of stimulus) repeated measures analysis of variance was not significant for differences of recall between the groups, $F(2, 256) = .61, p < .60$, nor was the interaction between groups and type of phrase significant, $F(6, 768) = 1.44, p < .20$. The difference between types of phrase was significant, however, as all groups recalled more jokes than other phrases, $F(3, 768) = 292.4, p < .001$. A oneway analysis of variance on total recall scores was not significant for group differences, $F(2, 256) = .595, p < .60$. Differences in all of these analyses, whether significant or not, were generally in the expected direction, shown in Table 1.

| Insert Table 1 about here |
As all subjects recalled significantly more funny phrases than any others, two additional analyses were completed, one with sad, happy, and neutral phrases, and another with sad and happy phrases only. While neither was significant for group differences, the interactions approached significance, $F(4, 512) = 2.11, p < .08$, and $F(2, 256) = 2.81, p < .07$, respectively. Because differences were in the expected direction and because the interactions began to approach significance, groups at the extremes on the elated-depressed POMS subscale were created as follows, again, based on college norms: above 65T equaled elated (32 subjects) and below 35T equaled depressed (30 subjects). Intermediate scores were not included. Group differences were significant neither for a 2 (group) by 4 (type of stimulus) repeated measures analysis of variance, nor for a 2 (group) by 2 (sad and happy phrases only) MANOVA, $F(1, 60) = 1.38, p < .25$, and $F(1, 60) = 1.30, p < .27$, respectively.

Cohen and Cohen (1983) note that multiple regression and correlation are appropriate statistical tools "whenever a quantitative variable (the dependent variable) is to be studied as a function of, or in relation to, any factors of interest (expressed as independent variables" (p. 3). Correct usage includes cases in which interactions or main effects are of interest. Accordingly, scores on the elated-depressed subscale of the POMS were correlated with numbers
of phrases recalled. Correlations were in the expected direction, but were slight. A significant relationship existed between mood and memory for happy phrases, $r(1, 257) = .143$, $p < .03$. Correlations of memory scores with scores on the depression subscale of the MAACL-R were all nonsignificant. The same held true for correlations with the positive affect subscale of the MAACL-R, with the exception of the correlation with happy phrases, $r(1, 257) = .143$, $p < .03$. These identical correlations are not errors.

Pearson Product-Moment correlations between relevant subscales of the POMS and MAACL-R were as follows: POMS elated-depressed with MAACL-R positive affect, $r(1, 259) = .72$; POMS elated-depressed with MAACL-R depression, $r(1, 259) = -.58$.

Finally, Pearson Product-Moment Correlations between pre- and posttest scores on the five MAACL-R subscales ranged from .72 to .83. Analyses of variance on these pre- and posttest scores revealed no significant differences.
Discussion

This study provides some support for the semantic network theory of mood. While analysis of variance suggests interactions between mood and memory, there were no significant differences between groups for type of stimuli or for total amount recalled. Even analyzing extremes of mood failed to support the theory. Differences were in the expected direction, however. On the other hand, correlational analysis revealed that as mood increases, so does memory for positively-valenced phrases. This effect, although mild, was significant. Moreover, correlations of memory for happy phrases with subscales from both the POMS and MAACL-R were identical. In addition, although POMS and MAACL-R subscales correlated highly with each other, they did not do so perfectly. Thus, the convergence of the correlations of mood subscales with memory scores lends greater credence to the findings.

One might wonder why the hypothesized effect was found for happy but not sad subjects. A possibility is that the significant finding is simply a result of the large sample size. Perhaps people do not learn mood-congruent material better; perhaps mood-contrasting material is more striking. Alternatively, as the data support this tenet even less than the first, it is conceivable that emotional valence has little effect on memory for college students whose moods
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fall within a "normal," nonclinical range. If so, then one must concur with the conclusions of Hasher and her colleagues that clinical and nonclinical groups differ qualitatively on cognitive tasks.

Nevertheless, there remains another likely possibility. The distribution of scores on the depression subscale of the MAACL-R is skewed away from depression. In addition, the histogram for the elated-depressed subscale of the POMS, which was originally used to create the groups, is also skewed toward the positive. While there were enough subjects for all groups, few scored at the depressed extreme, whereas many were at the elated extreme. Two implications may be drawn. One is that there were enough happy subjects to show an interaction between their mood and memory; if there had been more subjects with a greater degree of dysphoria, it is likely that an equivalent result would have emerged. This speculation, which is supported by the correlations between positive affect and memory for happy phrases, would certainly suggest that mild fluctuations in mood resemble clinical elation and depression in that material congruent with mood is better remembered than contrasting stimuli. Naturally, mild mood fluctuations would have only slight effects on memory; one could not expect highly significant results if one adopted the continuum theory of mood.
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A second implication of the sample is that college students, and presumably others, are generally more happy than they are sad. This statement is self-evident, as college students, by definition, must be reasonably happy in order to continue to function adequately as college students. It would not be adaptive to be chronically sad. Nor would it be adaptive for memory in the general population to suffer, which it does not to any great extent. While mild mood-congruent cognitive effects may exist, there is no evidence of global memory impairment. Again, in a sample of college students, this result would not be likely to be significant.

Isen (1985) suggests that, with mild happiness and sadness, different rather than parallel cognitive and emotional processes occur, producing a bias toward the encoding and retrieval of positive material. She states that there is a tendency to maintain positive states and repair negative moods as a coping strategy. However, there is a large body of evidence mentioned earlier to support the theory of spreading activation for both types of mood. Future research, perhaps with college students during midterm or finals week generating adequate dysphoria, might help settle this question.

The other important finding is that all subjects remembered jokes significantly more than the other material.
Indeed, the results are beyond those hypothesized. As Derks, Lewis, and White (1981) have indirectly demonstrated, it is the quality of humor that affects its appreciation, rather than the quantity. Therefore, the jokes used in this study were perhaps too funny to escape anyone's attention, despite differing moods. It is conceivable that the inclusion of humorous material may have obscured a relationship between dysphoric mood and the encoding of negative material, if such a relationship does exist within this range of affect. As previous research has shown, humor does have an appreciable, if inconsistent, effect on memory. However, it may not necessarily alter mood state. Simply reading a list of jokes may not elevate mood, and mood in the subjects did not change significantly over the course of the experiment. The attention-getting aspect of this type of humor may still have important implications for learning situations.
References


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### Table 1

**Mean Numbers of Phrases Recalled by Mood State**

<table>
<thead>
<tr>
<th>Phrase Type</th>
<th>Group</th>
<th>Funny</th>
<th>Happy</th>
<th>Sad</th>
<th>Neutral</th>
<th>Total</th>
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<tr>
<td></td>
<td>Happy</td>
<td>6.19</td>
<td>3.23</td>
<td>2.26</td>
<td>2.39</td>
<td>14.07</td>
</tr>
<tr>
<td></td>
<td>Sad</td>
<td>6.30</td>
<td>2.75</td>
<td>2.43</td>
<td>1.97</td>
<td>13.44</td>
</tr>
<tr>
<td></td>
<td>Neutral</td>
<td>6.36</td>
<td>2.54</td>
<td>2.20</td>
<td>2.31</td>
<td>13.42</td>
</tr>
</tbody>
</table>
Appendix A

Profile of Mood States - Bipolar Form

Name __________________________
Date __________________________

Below are words that describe feelings and moods people have. Please read EVERY word carefully. Then rate each word according to how it best describes how you are feeling TODAY. A "0" means that you do NOT feel much like this, a "1" that you feel slightly unlike this, a "2" that you feel slightly like this, and a "3" that you feel much like this. Work rapidly.

0-----------------1-------------------2---------------------3
much unlike slightly unlike slightly like much like

1. ___ Composed 25. ___ Peaceful 49. ___ Calm
2. ___ Angry 26. ___ Furious 50. ___ Mad
3. ___ Cheerful 27. ___ Lighthearted 51. ___ Jolly
4. ___ Weak 28. ___ Unsure 52. ___ Uncertain
5. ___ Tense 29. ___ Jittery 53. ___ Anxious
6. ___ Confused 30. ___ Bewildered 54. ___ Muddled
7. ___ Lively 31. ___ Energetic 55. ___ Ready-to-go
8. ___ Sad 32. ___ Lonely 56. ___ Discouraged
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9. ___Friendly  33. ___Sympathetic  57. ___Good-natured
10. ___Tired  34. ___Exhausted  58. ___Weary
11. ___Strong  35. ___Powerful  59. ___Confident
12. ___Clearheaded  36. ___Attentive  60. ___Businesslike
13. ___Untroubled  37. ___Serene  61. ___Relaxed
14. ___Grouchy  38. ___Bad Tempered  62. ___Annoyed
15. ___Playful  39. ___Joyful  63. ___Elated
16. ___Timid  40. ___Self-doubting  64. ___Inadequate
17. ___Nervous  41. ___Shaky  65. ___Uneasy
18. ___Mixed-up  42. ___Perplexed  66. ___Dazed
19. ___Vigorous  43. ___Active  67. ___Full of pep
20. ___Dejected  44. ___Downhearted  68. ___Gloomy
21. ___Kindly  45. ___Agreeable  69. ___Affectionate
22. ___Fatigued  46. ___Sluggish  70. ___Drowsy
23. ___Bold  47. ___Forceful  71. ___Self-assured
24. ___Efficient  48. ___Able to  72. ___Mentally alert

concentrate
Appendix B

Multiple Affect Adjective Checklist - Revised, State Form

Name __________________________
Date __________________________

On this sheet you will find words which describe different kinds of moods and feelings. Check the space beside the words which describe how you feel now - today. Some of the words may sound alike, but please check all the words that describe your feelings. Work rapidly.

1. ___active  45. ___fit  89. ___peaceful
2. ___adventurous  46. ___forlorn  90. ___pleased
3. ___affectionate  47. ___frank  91. ___pleasant
4. ___afraid  48. ___free  92. ___polite
5. ___agitated  49. ___friendly  93. ___powerful
6. ___agreeable  50. ___frightened  94. ___quiet
7. ___aggressive  51. ___furious  95. ___reckless
8. ___alive  52. ___lively  96. ___rejected
9. ___alone  53. ___gentle  97. ___rough
10. ___amiable  54. ___glad  98. ___sad
11. ___amused  55. ___gloomy  99. ___safe
12. ___angry  56. ___good  100. ___satisfied
13. ___annoyed  57. ___good-natured  101. ___secure
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14. awful 58. grim 102. shaky
15. bashful 59. happy 103. shy
16. bitter 60. healthy 104. soothed
17. blue 61. hopeless 105. steady
18. bored 62. hostile 106. stubborn
19. calm 63. impatient 107. stormy
20. cautious 64. incensed 108. strong
21. cheerful 65. indignant 109. suffering
22. clean 66. inspired 110. sullen
23. complaining 67. interested 111. sunk
24. contented 68. irritated 112. sympathetic
25. contrary 69. jealous 113. tame
26. cool 70. joyful 114. tender
27. cooperative 71. kindly 115. tense
28. critical 72. lonely 116. terrible
29. cross 73. lost 117. terrified
30. cruel 74. loving 118. thoughtful
31. daring 75. low 119. timid
32. desperate 76. lucky 120. tormented
33. destroyed 77. mad 121. understanding
34. devoted 78. mean 122. unhappy
35. disagreeable 79. meek 123. unsociable
36. discontented 80. merry 124. upset
37. discouraged 81. mild 125. vexed
38. disgusted 82. miserable 126. warm
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Appendix C

Positive, Negative, Neutral, and Humorous Statements

1. My parents are pretty proud of me most of the time.
2. I feel tired and depressed; I don't feel like working on the things I know I must get done.
3. Why did the leper flunk the driving test? He left his foot on the gas.
4. It has occurred to me more than once that study is basically useless because you forget almost everything you learn anyway.
5. For the rest of the day, I bet things will go really well.
6. At low tide the hulk of the old ship could be seen.
7. Middle age is when you can't turn the TV set off or your spouse on.
8. The trouble with political jokes is that they often get elected.
9. This is great—I really do feel good. I am elated about things.
10. This might turn out to have been one of my good days.
11. I feel worn out. My health may not be as good as it's supposed to be.
12. The ship was ancient, and would soon be retired from the fleet.
13. A great salesman is someone who could sell bagels to the PLO.
14. A class reunion is where you pay fifteen dollars to be reminded of the time you wet your pants.
15. I'm glad I'm in college. It's the key to success nowadays.
16. I know a PR man whose wife just got a divorce. His relations were more public than he thought.
17. I couldn't remember things well now if I had to.
18. What do nuns and Seven-Up have in common? Never had it, never will.
19. A free sample will be given to each person who enters the store.
20. I can remember times when everybody but me seemed full of energy.
21. In the long run, it's obvious that things have gotten better and better in my life.
22. We have two kinds of nouns denoting physical things: individual and mass nouns.
23. To be is to do (Nietzsche). To do is to be (Heidegger). Do be do be do (Sinatra).
24. If I set my mind to it, I can make things turn out fine.
25. All of the unhappiness of my past life is taking possession of me.
26. In 1965, Elizabeth made the first state visit by a British monarch to Germany in 56 years.

27. Hospital gowns are like medical insurance policies—they only cover you partway.

28. Some streets were still said to be listed under their old names.

29. They say that kids today don't know what hard work means. They certainly do. That's why so many of them are on welfare.

30. I've noticed that no one really seems to understand or care when I complain or feel unhappy.

31. Ninety occupations were listed as eligible for the grads in business.

32. A man said to a hooker, "What would your mother say if she could see you?" "She'd kill me, I'm on her corner."

33. The nudists left their camp today. The sign on the fence says Clothed Til May.

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

35. The way I feel now, the future looks boring and hopeless.

36. When the banyan went down under its own weight, its branches began to take root.
Too often I have found myself staring listlessly into the distance, my mind a blank, when I definitely should have been studying.

The speaker outlined a plan whereby the current deficits could be eliminated.

I've lain awake at night worrying so long that I hated myself.

I feel so happy and playful today. I feel like surprising somebody by telling a silly joke.

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

I want to go to sleep—I feel like just closing my eyes and going to sleep right here.

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

Gentleman to a lady, while pouring her a drink: "Say when." Lady: "Right after this drink."

I've had important decisions to make in the past, and I've sometimes made the wrong ones.

Athletic scholarship is a contradiction in terms.

Saturn is sometimes in conjunction, beyond the sun from the earth, and is not visible.

It takes too much effort to convince people of anything. There's no point in trying.
50. At times I've been so tired and discouraged that I went to sleep rather than face important problems.

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

52. I've had daydreams in which my mistakes kept occurring to me--sometimes I wish I could start over again.

53. Oklahoma City is the largest city in the world in area, with 631.166 square miles.

54. It's encouraging that as I get farther into my major, it's going to take less study to get good grades.

55. He leaned over and whispered in her ear, "I love you terribly." She said, "I know, but we can work on it."

56. Every now and then I feel so tired and gloomy that I'd rather just sit than do anything.

57. What do you say to a one-legged hitchhiker? Hop in.

58. My judgment is keen and precise today.

59. Why doesn't Smokey the Bear have any children? Every time his wife gets hot, he hits her over the head with a shovel.

60. The Chinese language has many dialects, including Cantonese, Mandarin, and Wu.

61. Is sex dirty? Yes...if it's done right.

62. In a buoyant mood like this one, I can work fast and do it right the first time.
63. I do feel somewhat discouraged and drowsy—maybe I'll need a nap when I get home.
64. Japan was elected to the United Nations almost fourteen years after Pearl Harbor.
65. This is one of those days when I can grind out schoolwork with practically no effort at all.
66. It is better to keep your mouth shut and appear stupid than to open it and remove all doubt.
67. The Hope diamond was shipped from South Africa to London through the regular mail service.
68. I'm full of energy and ambition—I feel I could go a long time without sleep.
69. Perhaps college takes more time, effort, and money than it's worth.
70. The desk was old, and scratched into its surface was a profusion of dates, initials, and messages.
71. Things are easier and better for other people than for me. I feel like there's no use in trying again.
72. If your attitude is good, then things are good, and my attitude is good.
73. My parents never really tried to understand me.
74. I can make decisions rapidly and correctly, and I can defend them against criticism easily.
75. The merger did not change the company's policy.
76. What did the leper say to the prostitute? Keep the tip.
77. A man who doesn't know anything is pretty sure to tell it the first chance he gets.
78. A recent study revealed that one-half of all college students were unable to find summer jobs.
79. A sadist is someone who slows down the elevators in a honeymoon hotel.
80. Two men dressed as repairmen will appear shortly after the van pulls up.
81. I feel superb! I think I can work to the best of my ability.
82. There have been days when I felt weak and confused, and everything went miserably wrong.
83. If God had believed in permissiveness, he would have given us the Ten Suggestions.
84. There is a small article in the local newspaper which indicated acceptance of the kidnappers' terms.
85. I feel that many of my friendships will stick with me in the future.
86. I just can't make up my mind; it's so hard to make simple decisions.
87. I know that in the future I won't over-emphasize so-called "problems."
88. Often people make me very upset. I don't like to be around them.

89. I'm optimistic that I can get along very well with most of the people I meet.

90. The wood was discolored as if it had been held in a fire.

91. Why are there no jokes about the Jonestown tragedy? Because the punch line's too long.

92. A light was noticed in the dark outside, and it moved eerily towards the house.

93. I've doubted that I'm a worthwhile person.

94. My favorite song keeps going through my head.

95. The machine dominated county posts for as long as anyone could remember.

96. What does a grape say when you step on it? Nothing. It just gives a little whine.

97. Things were booming once again in the little gold rush town of Angel.

98. I just don't seem to be able to get going as fast as I used to.

99. 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.

100. Painting in a few other non-European countries is treated in a separate volume.
## Appendix D

### Intervening Task

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The author was born on October 16, 1963 in Fayetteville, Arkansas. She received her B.A. from the University of Virginia in French in August, 1985 and entered the Master of Arts program in psychology at the College of William and Mary in August, 1987. Her first year project, entitled "Humor as a Mnemonic Strategy," was presented to the Southeastern Psychological Association in March, 1989. This fall the author will pursue her doctoral degree in clinical psychology at the University of Kentucky.