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# Relationships between Affective Reactions to Winning and Losing and Causal Attributional Style

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# RELATIONSHIPS BETWEEN AFFECTIVE REACTIONS TO WINNING AND LOSING AND CAUSAL ATTRIBUTIONAL STYLE

by

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# INTRODUCTION

Recent research (e.g., Abramson, Seligman, & Teasdale, 1978; Klein, Fencil-Morse, & Seligman, 1976; Kuiper, 1978; Rizley, 1978) concerning cognitive and behavioral theories of depression has suggested that a person's causal attributions may influence his or her affective reactions following the experience of good or bad outcomes. Research on "self-serving biases" in causal attribution demonstrates that normals tend to externalize blame for failure and internalize blame for success (e.g., Sobel, 1974). Additional research (Seligman, Abramson, Semmel, & von Baeyer, 1979) on the causal attributions chosen by depressives suggests that depressives tend to adopt causal attributions for failure which can be characterized as internal, stable and global, and that they attribute success to factors which are external, unstable and specific.

The present study sought to review the research in these areas in order to develop a more unified picture of the relationship between "attributional style" and affective reactions to good or bad outcomes. In general, it was predicted that persons with a "depressive attributional style" show depressive transient mood changes following a bad outcome.

These predictions were tested in an experiment in which subjects' attributional style was assessed. They were then asked to play a competitive board game in order to win a prize. Each

subject's attributional style and his or her experienced outcome in the game constituted levels of independent variables in a factorial design. The dependent variable was the extent of mood change in the expected direction following a win or loss in the experimental game.

## REVIEW OF RELATED MATERIALS

The hypotheses investigated in this study were suggested largely by the reformulated learned-helplessness model of depression proposed by Abramson, Seligman and Teasdale (1978). Learned-helplessness phenomena had been investigated in a series of animal experiments (e.g., Overmier & Seligman, 1967; Seligman & Maier, 1967) in which naive dogs learned to escape a shock by jumping to a non-shock area in a shuttle box. Dogs that had received inescapable and unavoidable shock prior to shuttle trials demonstrated considerable deficits in acquiring the shock-avoidance response. Experiments such as Hiroto (1974) and Hiroto, and Seligman (1975) suggested that helplessness constructs might be applied to human depression. In essence, the original learned-helplessness hypothesis had suggested that "learning that outcomes are uncontrollable results in three deficits: motivational, cognitive and emotional." (Abramson et al. 1978, p. 50) These three areas of deficit were seen to parallel the kinds of behavioral and affective deficits often observed in human depression.

As the highly behavioristic contructs of the original model were investigated in experiments with humans, many theoretical inadequacies were discovered. A detailed analysis of these inadequacies is beyond the scope of the present study. However, Abramson et al. (1978) proposed the introduction of an attributional process in order to resolve some of the theoretical controversies.

The animal analogue model of learned-helplessness had proposed that simple exposure to uncontrollable outcomes would be sufficient to produce helplessness deficits. Abramson et al. (1978) proposed that a human being who perceives a lack of contingency between responses and outcomes experiences helplessness. The person then attempts to find a reasonable (or not so reasonable) cause for his helplessness. The chosen cause can be characterized along three dimensions: Stable-unstable, global-specific and internal-external. The relative stability of the attributed cause influences the chronicity of the expectation of future helplessness. The relative globality of the attributed cause influences the extent to which helplessness will be experienced in other situations. The relative internality of the chosen cause determines the extent to which self-esteem is lowered by the experience of helplessness. In other words, people who consistently choose internal, global and stable causes for bad outcomes should demonstrate depressive deficits in self-esteem, motivation, cognition and affect in the face of further bad outcomes.

People who experience successful outcomes also make causal attributions. These causes can also be characterized along the three dimensions described. However, in the case of good outcomes, attributions to internal, stable and global causes may be associated with the enhancement of self-esteem, motivation, cognition and affect.

Several studies suggest that normal subjects tend to adopt more internal attributions for successful outcomes and more external

attributions for failure. Streufert and Streufert (1969) had subjects play a simulated decision making game where false feedback was given concerning success or failure. During seven periods of the game, success or failure perception was increased by increasing the number of false success or failure messages given to each team. Percentage data was gathered for causal attributions to several factors, including "decisions made by your team" (an internal attribution), "decisions made by the other team" (external attribution), "various change factors" (external attribution), etc. (p. 140). Results showed that more internal attributions were made by successful subjects than by failing subjects. Also, more external attributions were made by failing subjects than by successful ones.

Luginbuhl, Crowe, and Kahan (1975) gave false success or failure feedback to subjects engaged in a perceptual identification task. Subjects were asked to attribute their performance to effort, ability, luck or task difficulty. Results indicated that success was attributed to internal factors (effort or ability), while failure was attributed about equally to internal or external factors.

Stevens and Jones (1976) controlled the feedback given to subjects engaged in sensory discrimination tasks. Those subjects receiving success feedback attributed their success more often to internal factors of ability and effort. Failure was attributed more often to luck, an external factor.

Sobel (1974) manipulated success and failure feedback given to subjects engaged in an achievement task. Success feedback produced

attributions to internal factors, while failure feedback produced more external attributions.

Miller (1976) obtained similar results. Subjects were given false feedback on a social perceptiveness task. Successful subjects assumed more personal responsibility for their performance than did failing subjects. It should also be noted that this differential effect was enhanced in subjects who were told that the experimental task was quite a valid and important measure of social perceptiveness.

The results of the studies reviewed above seem to be consistent with what Miller and Ross (1976) call the "self-serving biases" hypothesis. This hypothesis suggests that individuals can bolster their self-esteem and defend the ego by choosing internal causal attributions for success. If it is hypothesized that people who become depressed following bad outcomes tend to blame themselves (internal attribution), it follows that internal attributions for success should be related to elation. It is argued that, even under conditions of false success feedback, the adoption of internal attributions which enhance self-esteem should be related to an improvement in cognition, motivation and affect.

This argument applies so far only to the internal-external dimension of causal attributions. The question of how subjects will attribute successful outcomes along the stability and globality dimensions is still open. Most of the research cited so far is equivocal on the question of the stability of success attributions.

Luginbuhl et al. (1975) found success attributed more to a so-called unstable factor (effort) than to a so-called stable factor (ability). An examination of the results presented in Miller (1976) shows that, overall, subjects gave about equal weight for successful outcomes to stable (ability, task difficulty) and unstable (effort, luck) factors. Stevens and Jones (1976) indicate that success was attributed more to ability (ostensibly a stable factor) and to effort (ostensibly an unstable factor) than they did to luck (unstable) or to task difficulty (stable).

Assessment of the globality of success attributions is similarly complicated. Previous research has not assessed whether subject's attributions for success can be considered specific to the experimental task or considered to apply to a wide variety of situations. It is also not possible to accurately determine the globality of a chosen cause from the matrix of ability, effort, luck and task difficulty choices usually presented to assess attributions.

It has been suggested that the "self-serving biases" hypothesis might account for a normal subject's tendency to attribute success to internal factors. It is argued that attributing success to stable causes is also self-serving. The stability dimension is basically concerned with the expectation that a given cause will operate again in the future. It appears that it would be more self-serving to attribute success to factors which will be reliably present in the future than to factors which are more transient. A similar argument

may be made for global attributions. Attributing success to global factors implies that these factors might also serve the person well in other situations. A global attribution is potentially more self-serving than the assumption that a particular factor is only present in one specific set of circumstances.

These arguments concerning the dimensions of causal attributions for success imply the existence of a self-serving attributional style in normal humans. This attributional style can be characterized as the tendency to attribute success to factors which are internal, stable and global. Conversely, it seems logical that this self-serving bias should influence normal's attributions for bad outcomes. Specifically, it appears more self-serving to blame failure on factors which are external, unstable and specific. Miller and Ross (1976) claim that "only minimal evidence was found to suggest that individuals engage in self-protective attributions under conditions of failure." (p. 213) However, before generating definite hypotheses concerning failure attributions, the literature concerning depressive attributional style must also be considered. The bulk of this literature has appeared since the work of Miller and Ross (1976), and may shed further light on the question.

Klein, Fencil-Morse, and Seligman (1976) separated subjects into depressed and nondepressed groups on the basis of Beck Depression Inventory (BDI) scores. Subjects were then exposed to solvable or unsolvable discrimination problems or to no problems (control).

Subjects receiving unsolvable problems were also induced to attribute their failure to internal or external causes. Following this helplessness induction procedure, subjects were asked to solve anagrams scrambled according to a common pattern. Performance deficits on this anagram task were observed in depressed controls and in nondepressed subjects who received unsolvable problems. These authors also demonstrated that performance deficits exhibited by depressives could be alleviated by inducing subjects to attribute their prior failure externally (to task difficulty). However, when induced to attribute prior failure to lack of ability (internal), depressives still showed subsequent performance deficits. For nondepressed subjects, induction of attributions produced no significant differences between induced internals and externals in anagram performance.

Rizley (1978) elicited causal attributions for success or failure following a novel task from depressed and nondepressed subjects. Subjects were placed in respective groups based on their scores on the Beck Depression Inventory (BDI). Subjects scoring above 12 were placed in the depressed group, while subjects scoring below 7 were placed in the nondepressed group. Rizley (1978) found that depressed subjects rated internal factors (effort and ability) as more important causes than did nondepressed subjects.

Kuiper (1978) separated female college students into depressed and nondepressed groups on the basis of extreme scores on the Costello-Comfrey Depression Scale. He then manipulated reinforcement levels

for subjects as they participated in a bogus word association task. These levels were manipulated so that subjects would clearly perceive their performance as failure (20% "correct"). A subsequent check revealed that this manipulation was effective. An attribution measure was then administered to assess subject's judgments concerning the contribution of ability, effort, task difficulty or luck to their experienced outcomes. The assumption was made that attributions to ability represented internal and stable causes. Attributions to effort represented internal, unstable causes, while attributions to task difficulty represented external and stable causes. Lastly, attributions to luck represented external and unstable causes. Kuiper found that depressives who failed tended to make internal attributions, while failing nondepressives made external attributions. However, the prediction that depressives would make more stable attributions for failure was not upheld.

In the article presenting the reformulation of learned helplessness, Abramson et al. (1978), suggested that there might be an identifiable depressive attributional style. "Those people who typically tend to attribute failure to global, stable and internal factors should be most prone to general and chronic helplessness depressions with low self-esteem." (p. 68) In a test of this general hypothesis, Seligman, Abramson, Semmel, & von Baeyer (1979) asked subjects to complete the BDI Short Form and the Depression subscale of the Multiple Affect Adjective Check List, (MAACL). Subjects also completed a measure of attributional style called the

"Attributional Style Questionnaire" (ASQ). This assessment device presented twelve hypothetical life situations, six with good outcomes and six with bad outcomes. Subjects were asked to name a major cause for each outcome and to rate the relative internality, globality and stability for the chosen cause. The authors then computed correlations between BDI scores, MAACL scores and scores on the ASQ. Results indicated significant positive correlations between both BDI scores, MAACL scores and ratings of the internality, stability and globality of causes chosen for bad outcomes. Significant negative correlations were found between BDI scores and ratings of the internality and stability of chosen causes for good outcomes. Also, MAACL scores did not correlate significantly with ASQ ratings for chosen causes of good outcomes.

Seligman et al. (1979) also calculated composite attributional scores by summing ratings of internality, stability and globality for good outcomes and then for bad outcomes. These composite scores for bad outcomes correlated significantly with BDI scores (+.48) and with MAACL scores (+.24). The composite scores for good outcomes correlated significantly (-.22) with BDI scores and nonsignificantly (-.11) with MAACL scores. In addition, these authors deemed it clinically interesting to compare subjects scoring at the extremes of the BDI Short Form. Subjects in the upper quartile ($BDI \geq 6$) were significantly more internal, stable and global in their causal attributions for bad outcomes than were subjects in the lower quartile ($BDI \leq 1$). Also, upper quartile subjects were more unstable ($p < .017$) and somewhat more external ($p < .19$) than lower quartile subjects in their attributions for good outcomes.

The results of the Seligman et al. (1979) study suggest the presence of an identifiable depressive attributional style. This style is characterized by internal, stable and global attributions for bad outcomes and external, unstable and specific attributions for good outcomes. Their results also imply the existence of nondepressive attributional style characterized by relatively more external, unstable and specific attributions for bad outcomes, and by relatively more internal, stable and global attributions for good outcomes. However, it must be noted that Seligman et al. (1979) have only demonstrated a correlation between attributional style and depression. Such research does not rule out the possibility that depression may cause people to adopt a depressive attributional style or that normal or elated mood may cause attributions characterized as nondepressive. Despite the limitations of correlational evidence, these authors do claim that a depressive attributional style predisposes an individual to depression.

The present study seeks to improve on the correlational design by testing the assertion that a depressive attributional style, followed by a specific negative outcome, will result in a depressive mood change. Conversely, in line with the self-serving biases hypothesis, nondepressive attributional style, followed by a positive outcome, whould result in "elative" mood changes.

The experimental task chosen for this study is a competitive board game in which subjects play against each other in pairs in order to win a desirable prize. Although losing or winning such a game

does not compare in magnitude with the sort of life events that are usually associated with depression (serious separation or loss), it is felt that winning or losing a desirable prize may produce a measurable transient mood change. Although deficits in or enhancement of cognition, motivation and self-esteem might also appear in reaction to losing or winning, it is felt that transient mood changes may be the most common, reliable and easily measured immediate effects of success or failure. Mood change was therefore assessed with a pre-post game administration of the MAACL, as well as a post-game-only administration of an adaption of the MAACL.

In specific terms, this study employed a 2x2 factorial design, with outcome (winning or losing) and attributional style (depressive or nondepressive) as independent factors and mood change scores as the dependent variable. It is predicted that there is a significant interaction effect between outcome and attributional style. Specifically, it is hypothesized that losers with a depressive attributional style show significantly greater depressive mood change than losers with a nondepressive attributional style. It is also hypothesized that winners with a nondepressive attributional style show significantly greater elative mood changes than winners with a depressive attributional style.

# METHOD

## SUBJECTS

A total of 86 undergraduate students enrolled in an introductory psychology course at Loyola University of Chicago volunteered to take part in the experiment. These students received course credit for participating in the experiment. Approximately 10 days before the experiment, subjects completed a battery of questionnaires during their class time. This battery included the Attributional Style Questionnaire (ASQ), described below. If a subject had not completed the ASQ during class time, he or she was asked to complete the ASQ following all other experimental procedures. A total of 8 subjects took the ASQ at the time of the experiment, including 4 winners and 4 losers of the experimental game.

Of the total of 86 subjects who volunteered, 6 did not complete all the required procedures and their data was discarded. In addition, only 75 subjects had complete data for Overall and Affiliation attributional style, while only 77 subjects had complete data for Achievement attributional style. A summary of descriptive statistical information concerning ASQ responses is presented in Table 1. A composite Attributional Style Score was computed for each subject by summing ratings of internality, stability and globality for causes of bad outcomes on the ASQ and dividing by summed ratings along the three dimensions for causes of good outcomes. Subjects scoring above

Table 1

Summary Statistics for

Attributional Style Scores

| | Winners | | | Losers | | |
|---|---|---|---|---|---|---|
| | N | M | S.D. | N | M | S.D. |
| Overall Style | | | | | | |
| Depressive | 18 | 1.04 | .105 | 20 | .99 | .048 |
| Nondepressive | 21 | .79 | .090 | 16 | .75 | .129 |
| Achievement Style | | | | | | |
| Depressive | 24 | 1.10 | .219 | 17 | 1.04 | .087 |
| Nondepressive | 15 | .75 | .121 | 21 | .77 | .117 |
| Affiliation Style | | | | | | |
| Depressive | 20 | 1.02 | .079 | 19 | .99 | .074 |
| Nondepressive | 19 | .71 | .125 | 17 | .73 | .143 |

the median Attributional Style Score were assigned to the Depressive Attributional Style group and those scoring below the median were assigned to the Nondepressive Attributional Style group.

INSTRUMENTATION - THE ASQ

The Attributional Style Questionnaire (ASQ) was used to assess attributional style. This device was introduced in Seligman et al. (1979). It consists of 12 hypothetical situations evenly divided into 6 situations with good outcomes and 6 situations with bad outcomes. Also, the 12 situations are divided into 6 situations primarily concerned with achievement and 6 concerned with affiliation. This arrangement yields 4 subscales of 3 items each: achievement situations with good outcomes, achievement situations with bad outcomes, affiliation situations with good outcomes and affiliation situations with bad outcomes.

For each situation, the subject is asked to write down a major cause for the outcome described. The subject is then asked to rate each cause on three separate 7-point scales assessing, respectively, the internality, stability and globality of the cause. In addition, subjects rate each situation on how important the given situation would be if it happened to them. Endpoints of each 7-point scale are identified for each measure. Copies of the ASQ, including instructions given to subjects, are included in Appendix A.

Psychometric data concerning the ASQ form used are discussed in Note 1 of Seligman et al. (1979). Reliability coefficient alphas for the various subscales are reported as follows: bad outcome internality =.44, good outcome internality =.39, bad outcome stability =.63, good

outcome stability =.58. While these reliabilities might be considered low, Seligman, et al., report robust results for differences in attributional style between depressed and nondepressed college students. In addition, these authors report significant ($p < .001$) correlations with the Beck Depression Inventory as follows: bad outcome internality: $r = .41$, bad outcome globality: $r = .35$, bad outcome stability: $r = .34$. Also reported are good outcome internality: $r = -.22$ ($p < .01$), good outcome stability: $r = -.28$ ($p < .002$) and good outcome globality: $r = -.04$ (non-significant).

EXPERIMENTAL MATERIALS AND PROCEDURE

The Multiple Affect Adjective Check List (MAACL) (Zuckerman & Lubin, 1965) was adapted for use in assessing changes in transient mood. The MAACL consists of 132 adjectives describing a mood state. Subjects were asked to "Circle the words that describe the way you are right now." This measure was selected because it is a well-validated instrument for assessing depressed mood. The MAACL is also reported to be highly reliable (Zuckerman & Lubin, 1965). Because the present experiment involved changes in mood from pre- to post-game periods, two forms of the MAACL were used. The order of the 132 items was randomized for both pre- and post-game forms. Copies of both forms and subject instructions may be found in Appendix B.

An alternate and hopefully more sensitive measure of slight and transient mood changes was also used. The 24 adjectives from the MAACL which were determined (Zuckerman & Lubin, 1965) to discriminate best between depressed and nondepressed subjects were randomized and

presented in a list. Subjects were given the following instructions: "Read the following words one at a time. Compared to how you felt before the game, how much more or less do you feel this way now?" Subjects then circled numbers for each adjective on a 5-point scale labeled: "1 = Much less so, 2 = less so, 3 = the same, 4 = more so, 5 = much more so." This scale yields a composite score representing the degree of positive or negative mood change. This measure will be referred to as the "Mood Change Measure" or "MCM". The MCM, as opposed to the MAACL, does not rely on renunciation of a previously endorsed item or on endorsement of a previously unendorsed item to measure slight mood changes, and is therefore not as vulnerable as the pre-post MAACL procedure to a subject's possible bias toward response consistency. A sample copy of the MCM is presented in Appendix B.

The experiment took place during eight consecutive hour-long sessions on the same day. Each session contained from 6 to 14 subjects. When all subjects had entered the room they were counted. If there was an odd number of subjects, the experimenter asked one subject to volunteer to attend a later session.

Subjects were asked to fill out the pre-game MAACL form. Then subjects were asked to choose a partner that they did not know very well. According to subject's verbal reports, pairing with a relative stranger was possible on all occasions.

Subjects were then presented with the materials necessary to play the game "Battleship". Since this experimental game is a unique adaptation of a popular board game, a brief description is necessary. This particular game was adapted for use because it was apparent that both skill and luck were important determinants of outcome. Skill plays a part in the "crafty" placements of one's own "battleships" and "mines" and in the systematic search for and accurate recording of the opponent's battleship and mine locations. Luck plays a part in making the initial discovery of any opponent's battleships. Each player was asked to place 3 "battleships" and 5 "mines" on a paper playing grid of 64 numbered squares arranged in an 8 square by 8 square array. "Battleships" consisted of a linear horizontal, vertical or diagonal arrangement of three adjacent squares. "Mines" consisted of one numbered square for each mine. Players were asked to conceal their placements from their opponent, and to keep them concealed during the game. A system of colored stick-on dots was used to make these placements.

The game began when one player called out a number of a square corresponding to his or her guess as to the location of the opponent's battleship. The opponent responded with the word "hit" if a part of his or her battleship had been guessed, the word "miss" if a blank square had been guessed or the word "mine" if a square occupied by a mine had been guessed. Guessing a "mined" square resulted in the loss of the guessing player's next turn. The two opponents alternated guesses. The object of the game was to "destroy" the opponent's

battleships by guessing the location of all three parts of all three battleships before the opponent had done the same.

The rules and procedures of this game were explained to subjects. They were also told that "Skillful players are often tricky or crafty in the placement of their ships and mines." It was announced that winners would receive a prize of one Eisenhower "Silver" dollar.

After completing the game, winners were awarded their prizes and all subjects were asked to complete the post-game MAACL form and the MCM. Subjects were assured of receiving their class credit, debriefed and then dismissed.

# RESULTS

## OVERALL ATTRIBUTIONAL STYLE

Two separate 2x2 factorial analyses of variance were performed to analyze differences in scores on the two dependent variables. In the first analysis of variance, independent variables were Outcome (win or lose) and Attributional Style (depressive or nondepressive) and the dependent variable was the pre-game to post-game MAACL change score. Analysis of variance results for this analysis are presented in Table 3. Results indicate no significant main effect for Outcome or Attributional Style and no significant interaction effects between Outcome and Attributional Style. (Analyses are with unequal N's, N=75)

Results of the second analysis of variance, with Mood Change Measure scores as the dependent variable, are presented in Table 4. Results indicate a significant main effect for Outcome ($F = 44.40$, $p < .001$), with Winners being more elated than Losers. No significant main effect for Attributional Style was found. Also, no significant interaction effects between Outcome and Attributional Style were found. These results for Overall attributional style analyses do not confirm the experimental hypotheses concerning the nature and direction of differences in mood changes depending on differences in overall attributional style.

Table 2

Data Summary Table for

Dependent Measures by Attributional

Style and Outcome

| Measure: | MAACL Change Scores | | MCM Change Scores | |
|---|---|---|---|---|
| Outcome: | Winners | Losers | Winners | Losers |
| Attributional Style | | | | |
| Overall | | | | |
| Depressive | | | | |
| M | 11.50 | 13.55 | 89.44 | 71.50 |
| S.D. | 4.40 | 7.25 | 14.02 | 7.75 |
| Nondepressive | | | | |
| M | 11.86 | 14.94 | 92.57 | 67.81 |
| S.D. | 4.94 | 7.17 | 16.42 | 15.42 |
| Achievement | | | | |
| Depressive | | | | |
| M | 10.88 | 11.71 | 90.96 | 70.77 |
| S.D. | 4.82 | 3.57 | 14.30 | 7.32 |
| Nondepressive | | | | |
| M | 13.00 | 16.19 | 91.40 | 69.67 |
| S.D. | 4.16 | 8.36 | 17.16 | 14.18 |
| Affiliation | | | | |
| Depressive | | | | |
| M | 11.50 | 13.68 | 85.55 | 70.21 |
| S.D. | 3.75 | 8.12 | 12.47 | 11.32 |
| Nondepressive | | | | |
| M | 11.90 | 14.71 | 97.00 | 69.47 |
| S.D. | 5.53 | 6.07 | 15.98 | 12.53 |

Table 3

Analysis of Variance Summary Table for Overall Attributional Style by Outcome with MAACL Change Scores Dependent

| Source | df | MS | F | P |
|---|---|---|---|---|
| Main Effects | | | | |
| Outcome | 1 | 121.06 | 3.32 | 0.07 |
| Attributional Style | 1 | 13.43 | 0.37 | 0.55 |
| Interaction | | | | |
| Outcome X Attributional Style | 1 | 4.92 | 0.14 | 0.71 |
| Residual | 71 | 36.44 | | |

Table 4

Analysis of Variance Summary Table for Overall Attributional Style by Outcome with MCM Scores Dependent

| Source | df | MS | F | P |
|---|---|---|---|---|
| Main Effects | | | | |
| Outcome | 1 | 8401.98 | 0.002 | 0.97 |
| Attributional Style | 1 | 0.33 | 44.40 | 0.00 |
| Interaction | | | | |
| Outcome X Attributional Style | 1 | 215.31 | 1.14 | 0.29 |
| Residual | 71 | 189.25 | | |

ACHIEVEMENT AND AFFILIATION ATTRIBUTIONAL STYLE

Since the ASQ lends itself to a breakdown into attributions for achievement or affiliation outcomes, and since there are obviously both achievement and affiliation components in the game interaction used in the present experiment, two new independent variables were calculated. Attributional style for achievement outcomes was calculated by summing internality, stability and globality ratings for bad achievement outcomes and dividing by summed ratings of the three dimensions of attributions for good achievement outcomes. Attributional style for affiliation outcomes were calculated in the same fashion using the ratings for bad and good affiliation outcomes. Statistical summaries for these new scores are contained in Table 1. Subjects falling above the median scores were assigned to depressive achievement or affiliation attributional style groups. Subjects falling below median scores were designated as having nondepressive achievement or affiliation attributional styles.

Four separate 2x2 factorial analyses of variance with unequal N's were then performed, with Achievement (N=77) or affiliation (N=75) attributional style and Outcome as independent factors and MAACL or MCM scores as dependent variables. Since the main focus of this study is on interaction effects, resultant analysis of variance summary data of such interactions are presented in Table 5. As can be seen, no significant interactions were found with MAACL change scores dependent, and no significant interactions were found for Achievement attributional style by Outcome with MCM scores dependent. These results do not support the hypothesis of differential mood change depending on differences in achievement attributional style.

Table 5

Analysis of Variance Summary

Table of Interactions of Attributional

Style and Outcome for MAACL Change

Scores and MCM Scores Dependent

| MAACL Change Scores | df | MS | F | P |
|---|---|---|---|---|
| Overall Attributional Style | 1,71 | 4.92 | 0.14 | 0.71 |
| Achievement Attributional Style | 1,73 | 0.72 | 0.004 | 0.95 |
| Affiliation Attributional Style | 1,71 | 1.84 | 0.05 | 0.82 |
| **MCM Scores** | | | | |
| Overall Attributional Style | 1,71 | 215.31 | 1.14 | 0.29 |
| Achievement Attributional Style | 1,73 | 11.04 | 0.06 | 0.81 |
| Affiliation Attributional Style | 1,71 | 694.09 | 3.98 | 0.05 |

One analysis of variance yielded results of significance. With Affiliation attributional style and Outcome as independent variables and MCM scores as the dependent variable, results indicate a significant main effect for Outcome ($F\ (1,71) = 48.20$, $p < .001$) and a trend effect approaching significance ($F\ (1,71) = 3.38$, $p < .07$) for Affiliation attributional style. In addition, a significant interaction effect between Affiliation attributional style and Outcome was found ($F\ (1,71) = 3.98$, $p < .05$). The resultant analysis of variance table is presented in Table 6.

In order to probe this significant interaction, means of MCM scores were calculated for each cell group (Depressive winners, nondepressive winners, depressive losers, nondepressive losers.) These means are presented in Table 7.

It should be noted that a score of 72 on the MCM represents no mood change. Scores below 72 represent a depressive mood change, while scores above 72 represent an "elative" mood change. A Newman-Keuls test of differences between means (Winer, 1971) was performed on the cell means for Affiliation attributional style. Results of these tests are presented in Table 8. These results indicate that nondepressive winners differ significantly from depressive winners. ($R_2(O) = 11.45$, $R_2(E) = 11.43$, $p < .01$)[1]; nondepressive winners differ

[1]Newman-Keuls data are represented in terms of the observed difference between means across an ordered range of n means ($R_N(O) = X$) and in terms of the expected null hypothesis value of such differences ($R_N(E) = X$).

Table 6

Analysis of Variance Summary Table for Affiliation Attributional Style by Outcome with MCM Scores Dependent

| Source | df | MS | F | P |
|---|---|---|---|---|
| Main Effects | | | | |
| Outcome | 1 | 8398.34 | 48.20 | 0.001 |
| Affiliation Attributional Style | 1 | 588.24 | 3.38 | 0.07 |
| Interaction | | | | |
| Outcome X Affiliation Attributional Style | 1 | 694.09 | 3.98 | 0.05 |
| Residual | 71 | 174.23 | | |

Table 7

Means and Standard Deviations

of MCM Scores* by Levels of

Affiliation Attributional Style

and Outcome

| | | Outcome | |
|---|---|---|---|
| | | Winners | Losers |
| Affiliation Attributional Style | Depressive | M=85.55<br>s.d.=12.47 | M=70.21<br>s.d.=11.32 |
| | Nondepressive | M=97.00<br>s.d.=15.98 | M=69.47<br>s.d.=12.53 |

* Note: A MCM Score of 72 represents no mood change. Scores above 72 represent elative mood changes. Scores below 72 represent depressive mood changes.

Table 8

Results of Newman-Keuls

Analysis of Differences Between

Ordered Cell Means of MCM Scores

for Affiliation Attributional Style

by Outcome

| | Nondepressive Winners | Depressive Winners | Depressive Losers | Nondepressive Losers |
|---|---|---|---|---|
| Nondepressive Winners | | $R_2(0)=11.45$ $p < .01$ | $R_3(0)=26.79$ $p < .01$ | $R_4(0)=27.53$ $p < .01$ |
| Depressive Winners | | | $R_2(0)=15.34$ $p < .01$ | $R_3(0)=16.08$ $p < .01$ |
| Depressive Losers | | | | $R_2(0)= 0.74$ (N.S.) |
| Nondepressive Losers | | | | |

significantly from depressive losers ($R_3(O) = 26.79$, $R_3(E) = 13.02$, $p < .01$); nondepressive winners differ significantly from nondepressive losers ($R_4(O) = 27.53$, $R_4(E) = 14.00$, $p < .01$); depressive winners differ significantly from depressive losers ($R_2(O) = 15.34$, $R_2(E) = 11.43$, $p < .01$); depressive winners differ significantly from nondepressive losers ($R_3(O) = 16.08$, $R_3(E) = 13.02$, $p < .01$); depressive losers do not differ significantly from nondepressive losers ($R_2(O) = 0.74$, $R_2(E) = 11.43$, $p < .01$).

In general, these results indicate significant differences between both winning and both losing groups. (Hence the main effect for Outcome.) These results indicate that winners are much more likely to become elated than are losers to become depressed. The prediction that depressive losers would become more depressed than nondepressive losers was not confirmed. However, consistent with the experimental hypotheses, winners with a nondepressive Affiliation attributional style became more elated than winners with a depressive Affiliation attributional style.

In summary, it can be stated that the predicted differences in mood change as a function of interactions between outcome and attributional style were not found for Overall or Achievement attributional style. Predicted differences between winners with depressive or nondepressive Affiliation attributional styles were found. In general, the experimental hypotheses were not confirmed, except among winners with different Affiliation attributional styles.

# DISCUSSION

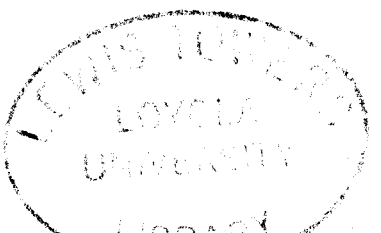
The results of this study do not demonstrate the predicted differences in mood change as a function of the interaction of overall attributional style and experienced outcome. Subjects with a nondepressive attributional style who won the game did not become significantly more elated than winning subjects with depressive attributional styles. Also, losers with depressive attributional styles did not become significantly more depressed than losers with nondepressive styles. However, winners did differ from losers in the extent of mood change following the game as measured by the MCM. Winners became generally more elated, while losers showed only slight depressive mood changes. This failure to produce depressive changes in losers may be partially responsible for the lack of a significant interaction between overall attributional style and outcome.

It is felt that factors in the experimental situation and factors within the subject population may have combined to prevent losers from becoming depressed. It is apparent that the experimental game was more powerful in producing elative changes than it was in producing depressive changes. Factors surrounding the experimental game may have made it relatively easy for losers to deny the ego-importance of the outcome of the game. In the first place, losers of the game don't really lose anything, relative to what they had before participating in the experiment. Losers do, however, gain

an extra credit in their psychology classes for participating. After all, this inducement is likely to be a major reason for their volunteering in the first place. A losing subject may leave the experiment feeling that he or she did gain something important. The impact of losing the opportunity to gain a dollar may have been relatively minor compared to the positive outcome of the whole situation. Perhaps if losers had been required to pay their winning opponent a dollar out of their own pocket, the depressive impact would have been greater.

It should also be mentioned that the present study adopted a significantly different strategy than studies already reviewed. Most of the previous research produced significant results through giving false feedback to already depressed subjects (e.g., Klein et al., 1976; Rizley, 1979; Kuiper, 1978) and then assessing attributions. In addition, in many of these studies, the experimental outcome of tasks such as anagram performance or social perceptiveness may be potentially more depressing than losing one competitive game. Receiving negative feedback on tasks reflecting such attributes as sociability or intelligence from an ostensible expert (a psychologist-experimenter) may have depressed subjects enough to influence their responses on attributional measures. In such cases, it may be that depressed mood caused the resulting depressive attributional style.

Miller (1976) points out that the more valid and important the experimental task is presented as being, the more failing subjects will engage in self-protecting attributions for their failure. These



distortions may take place in order to prevent transient depressive mood changes in reaction to failure at an ego-involving task. If the task is perceived as relatively unimportant, failing subjects may not distort their attributions as much, possibly because there is relatively little need to protect against depressive changes. Miller (1976, p. 905) states: "Even success on an unvalidated unimportant task may provide an opportunity for self-gratification and self-enhancement. On the other hand, failure on an unvalidated, unimportant task does not appear to be nearly as threatening to the individual as failure on a much more important task." Miller implies, then, that if the outcome of the experimental task is perceived by subjects to be relatively unimportant, mood changes should be more apparent in winning than in losing subjects. This pattern is quite consistent with the results of the present experiment.

The original hypothesis of the present study predicts that a depressive attributional style will predispose losing subjects to depressive mood changes. In other words, a person's tendency to attribute failure to more internal, stable and global factors should operate during all failure experiences, and result in depressed mood. The underlying assumption here is that attributional style represents some sort of relatively stable "cognitive trait" which results in predictable mood changes following a particular outome. If the ASQ provides a valid measurement of this cognitive trait, then ASQ differences should result in differential mood changes. For the ASQ to have this sort of predictive validity in the present experimental

situation, subjects should have been confronted with an experimental task that was as ego-involving as the hypothetical situations presented in the ASQ. This comparability was not assessed directly in the present study, but in light of the previous discussion of Miller's (1976) ideas, it is suspected that the experimental task did not promote the same level of ego-involvement as the more involving situations presented in the ASQ. This is to say that the influence of ASQ measured attributional style might have been more demonstrable if the experimental task had been more ego-involving.

One must also question the assumption that attributional style represents a truly stable cognitive trait. In the present study, attributional style was assessed by the ASQ about two weeks before the experimental game. It is necessary to assume in this case that attributional style remained stable during this interval. Wortman and Dintzer, (1979) question whether causal attributions endorsed by subjects do actually remain stable. These authors maintain that causal attributions are actually tentative hypotheses developed following an outcome. These tentative hypotheses are then evaluated by testing them with information gained in other situations or by observing the behavior of others. In this light, the ASQ attributional style of subjects in the present study may have only represented a temporary stance, characterized by hypothetical attributions for hypothetical events. This point implies that attributional style may be a more fluid and dynamic feature of cognitive life than was originally assumed. Specifically, the attributional style of subjects

in the present study may have changed, to an unknown degree, during the assessment-outcome interval.

It is known, however, from the Seligman et al. (1979) study of depression and attributional style, that at one point in time, moderately depressed subjects attributed bad outcomes to more internal, stable and global factors than did nondepressed subjects. Depressed subjects also attributed good outcomes to more external, specific and unstable factors than did nondepressed subjects. However, the correlational design of this study does not allow the assumption that a depressive attributional style actually causes depression. It is entirely possible that moderate depression causes alterations in attributional style. If some subjects in the present study had been moderately depressed when completing the ASQ, it is possible that they had "recovered" enough by the time of the experimental game to adjust toward a more nondepressive style. If this were the case for a significant number of losing subjects, the depressive impact of losing a single game would be dampened considerably.

Another factor which may have contributed to the lack of real depressive mood changes in losers is the lack of a "real" depressive attributional style among losing subjects. An examination of the losers' overall attributional style scores is illustrative of this point. The mean overall score for the losers is 0.88, with a maximum score of only 1.05. For winners, the mean overall score was 0.91, with a maximum of 1.38.

Subjects were designated as having depressive attributional styles if their scores exceeded the median overall score of 0.91. It must be recalled that attributional style scores were computed as the ratio of composite ratings for bad outcomes to composite ratings for good outcomes. Computed in this way, a score of 1.00 represents equal ratings for good and bad outcomes. It is arguable that real depressive attributional style within any one subject should be reflected by a much greater disparity between ratings of bad and good outcomes. Seen in this way, many subjects designated as having depressive attributional styles (scores over 0.91) do not seem to exhibit particularly insidious depressive attributional styles.

If this same sort of computational analysis is performed on the data reported by Seligman et al., (1979), the results are quite interesting. These authors report mean ratings from the ASQ for upper quartile BDI subjects (BDI $\geq$ 6) and lower quartile subjects (BDI $\leq$ 1). Attributional style scores computed on these means in the same way utilized in the present study show a mean attributional style score of 0.98 for depressed subjects and a mean score of 0.78 for nondepressed subjects. It is clear from these figures that depressed subjects in Seligman et al., (1979) differ in attributional style from nondepressed subjects. In light of the previous discussion, however, it is not clear that any of these subjects exhibited particularly insidious real depressive attributional styles, since mean scores still did not exceed 1.00. The point is that it may be unrealistic to use

attributional style scores to predict depressive mood changes when these scores do not represent real depressive attributional style.

A way out of this quandary may be sought by speculating as to what is really reflected in a subject's attributional style score. Perhaps such a score represents the relative presence of a self-serving attributional style, rather than the presence of a depressive or nondepressive attributional style. After all, scores below 1.00 still reflect a dominance of internal, stable and global attributions for good outcomes over bad outcomes. This sort of dominance has been characterized elsewhere (Miller & Ross, 1975; Miller, 1976; Johnson, Petzel, Hartney, & Morgan, Note 1) as a self-enhancing distortion or a self-serving bias. Seen in this light, attributional style scores below 1.00 represent the degree to which a self-serving bias is present in subjects. In the Seligman et al., (1979) study, then mild depression is associated with a less self-serving style (Scores average to 0.98) while nondepressives show a more self-serving style (Scores average to 0.78).

As Johnson, et al. (Note 1) argue:

> ". . . the breakdown of ego-enhancing defenses or self-serving biases may characterize an initial phase in the development of depression. . .Subsequent phases, or more serious degrees of depression, may be characterized by the addition of the cognitive distortions involving the internalization of failures." (pp. 12-13)

In the present study, the degree of breakdown in self-serving attributional style shown by losing subjects may not have been strong enough to be reflected in mood change scores following the game. What emerges is a picture of a typical member of the loser's group whose

attributional style remains self-serving enough to defend against the potentially depressing impact of losing the game. Even those losers who were designated as having "depressive" attributional styles may still have had a strong enough defensive, self-serving bias to enable them to minimize the impact of losing.

If it is claimed that self-serving biases are well represented in the subjects taking part in the present study, then it is not surprising that winners became elated following the game. This is consistent with Miller's (1976) assertion that success may provide an opportunity for self-enhancement, even on unimportant tasks. This is also consistent with Johnson et al. (Note 1), who found that nondepressives (self-enhancers) tend to magnify the important of their successes. The fact that winners with depressive styles (or less self-serving styles) do not differ significantly from winners with nondepressive styles in the extent of elative changes may also be a function of their dominant self-serving styles. The attributional styles of those winners with designated depressive styles may still have been self-serving enough to permit taking advantage of the affective enhancement of winning.

However, it should be noted that significant differences between winners with designated depressive or nondepressive styles were demonstrated when affiliation attributional style scores were extracted from overall attributional style scores. These results reflect two possible meaningful trends. First, the experimental game was probably more meaningful to subjects as an affiliation task than

as an achievement task. Experimental instructions to choose a stranger as an opponent, as well as the face-to-face communication necessary to play the game may have increased the affiliation nature of the task. In this sense, winning the game represents a degree of interpersonal success.

Secondly, it is clear that those winners with self-serving affiliation attributional styles became more elated than those winners with a less self-serving attributional style. While the relative absence of a self-serving style may not be salient enough to cause depressive changes following a loss, this relative absence seems to lessen the elative impact of winning. In more specific terms, the person who tends to adopt internal, stable and global attributions for successful affiliation outcomes is more likely to become elated following interpersonal success. On the other hand, the person who adopts more external, specific and unstable attributions for successful affiliation outcomes is less able to take affective advantage of interpersonal success. This interpretation offers some support for Costello's (1972) assertion that depression may be the result of the loss of reinforcer effectiveness. The winners in this study who showed dampened elation may be people for whom affiliation success has begun to have less reinforcing qualities. The relative lack of a self-serving attributional style may reflect a deficit in the perception of social self-efficacy, resulting in poorer capacity to take maximum advantage of social success.

What emerges from a consideration of the results of this study is a much broader perspective on the effects of attributional style. It appears that in normal subjects, attributional style is a more meaningful construct when it is also considered in terms of self-serving biases than when it is considered solely in terms of depressive distortions. It seems that, as a whole, normal subjects do adopt self-serving cognitive styles which serve to protect them from potentially depressing day-to-day events. Subjects in this study seemed to have adequate enough self-serving styles to have avoided the impact of losing the game. However, the relative presence or absence of self-serving biases in these subjects does have an effect in affiliation situations. A "depressive" attributional style which is not strong enough to cause depressive mood changes may still lack enough self-serving impact to cause dampened elation following a successful outcome. Although results of this study do not support the contention that attributional style can cause depressive mood changes, an analysis of attributional style may be able to identify those people who cannot take maximum advantage of the good things that happen to them. Those people who show a relative lack of self-serving attributional style may become more vulnerable to depression as reinforcing events continue to lose their self-enhancing potential. Results also suggest that the lack of self-serving biases may have its strongest negative effect in interpersonal situations.

This discussion raises a number of questions which might be considered in future research. It is still possible that persons

with especially insidious depressive attributional styles can be sampled from the normal population. A better test of the hypothesis that such a style predisposes people to depressive mood changes could be made by assessing their affective reactions to important, real-life outcomes. Ethical strictures against psychologically harming subjects might prevent the experimental introduction of highly negative outcomes, but some naturally occurring outcome (such as failing a test) might be studied.

Also, the presence of a real depressive attributional style in clinically depressed subjects could be assessed to test the assertion that cognitive distortions characterize the more serious phases of depression. Such research may be initially correlational, but some attempt must be made to assess causal direction. It is still entirely possible that depression causes distorted attributions. However, it is also possible that the gradual loss of self-serving cognitive style causes more frequent episodes of flattened or negative mood which further distort cognitions which in turn deepen depression and so on. More sophisticated cross-lag panel or longitudinal designs for cognitive depression research may help clarify the question of causal sequence.

In addition, the assumption that attributional style remains a stable trait over time needs to be tested. The ASQ appears to be a fairly complete device, but further psychometric work needs to be done to determine its overall reliability and construct validity. Perhaps factor analytic or multiple regression techniques could be

used to determine the empirical contribution made to depression by the internality, stability and globality dimensions of attribution considered separately.

Finally, in light of the discussion of task importance and ego-involvement, ASQ measures of attributional style might be made more powerful through the use of mathematical weighting of causal ratings. Blaney, Behar, and Head (1980) report the use of such a technique where ratings of bad outcomes are multiplied by ratings of their respective importance ratings. Although Blaney et al. (1980) report that such a manipulation does not increase the ASQ's degree of association with depression levels, it may increase the ASQ's predictive value.

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# APPENDIX A

# ATTRIBUTIONAL STYLE QUESTIONNAIRE

## DIRECTIONS

Please try to vividly imagine yourself in the situations that follow. If such a situation happened to you, what would you feel would have caused it? While events may have many causes, we want you to pick only one -- the major cause if this event happened to you. Please write this cause in the blank provided after each event. Next we want you to answer some questions about the cause and a final question about the situation. To summarize, we want you to:

1) Read each situation and vividly imagine it happening to you.

2) Decide what you feel would be the major cause of this situation if it happened to you.

3) Write one cause in the blank provided.

4) Answer three questions about the cause.

5) Answer one question about the situation.

6) Go on to the next situation.

YOU MEET A FRIEND WHO COMPLIMENTS YOU ON YOUR APPEARANCE

1) Write down the one major cause_____

2) Is the cause of your friend's compliment due to something about you or something about the other person or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to the other person or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

3) In the future when you are with your friends, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

4) Is the cause something that just affects interacting with friends or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

5) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU HAVE BEEN LOOKING FOR A JOB UNSUCCESSFULLY FOR SOME TIME

6) Write down one major cause_____

7) Is the cause of your unsuccessful job search due to something about you or something about other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

8) In the future when looking for a job, will this cause again influence what happens? (Circle one number)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

9) Is the cause something that just influences looking for a job or does it also influence other areas of your life? (Circle one number)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

10) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU INVEST MONEY IN THE STOCK MARKET AND MAKE A PROFIT

11) Write down the <u>one</u> major cause_____

12) Is the cause of your making a profit in the stock market due to something about you or something about other people or circumstances? (Circle one number)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

13) In the future when investing in the stock market, will this cause again influence what happens? (Circle one number)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

14) Is the cause something that just affects investing in stocks or does it also influence other areas of your life? (Circle one number)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

15) How important would this situation be if it happened to you? (Circle one number)

| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |
|---|---|---|---|---|---|---|---|---|

A FRIEND COMES TO YOU WITH A PROBLEM AND YOU DON'T TRY TO HELP THEM

16) Write down the <u>one</u> major cause_____

17) Is the cause of your not helping your friend due to something about you or something about other people or circumstances? (Circle one number)

| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |
|---|---|---|---|---|---|---|---|---|

18) In the future when a friend comes to you with a problem, will this cause again influence what happens? (Circle one number)

| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |
|---|---|---|---|---|---|---|---|---|

19) Is the cause something that just affects what happens when a friend comes to you with a problem or does it also influence other areas of your life? (Circle one number)

| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |
|---|---|---|---|---|---|---|---|---|

20) How important would this situation be if it happened to you? (Circle one number)

| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |
|---|---|---|---|---|---|---|---|---|

YOU GIVE AN IMPORTANT TALK IN FRONT OF A GROUP
AND THE AUDIENCE REACT NEGATIVELY

21) Write down the <u>one</u> major cause_____

22) Is the cause of the audience reacting negatively due to something about you or something about other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

23) In the future when giving talks, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

24) Is this cause something that just influences giving talks or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

25) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU DO AN IMPORTANT PROJECT WITH A GROUP
AND FIND THAT THE PROJECT TURNS OUT WELL

26) Write down the <u>one</u> major cause_____

27) Is the cause of the group working well together due to something about you or something about the other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

28) In the future when working on a group project, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

29) Is this cause something that just affects group projects or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

30) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU MEET A FRIEND WHO ACTS HOSTILELY TO YOU

31) Write down the <u>one</u> major cause_____

32) Is the cause of your friend acting hostile due to something about you or something about other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

33) In the future when interacting with friends, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

34) Is the cause something that just influences interacting with friends or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in life |

35) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU CAN'T GET ALL THE WORK DONE THAT OTHERS EXPECT OF YOU

36) Write down the one major cause_____

37) Is the cause of your not getting the work done due to something about you or something about the other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

38) In the future when doing the work that others expect, will this again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

39) Is the cause something that just affects doing work that others expect you to do or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

40) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU AND YOUR SPOUSE (BOYFRIEND/GIRLFRIEND) WERE HAVING PROBLEMS GETTING ALONG BUT YOU WERE ABLE TO RESOLVE THE DIFFICULTIES

41) Write down the one major cause_____

42) Is the cause of the problems being resolved due to something about you or something about other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

43) In the future when trying to resolve problems, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

44) Is this cause something that just affects getting along with your spouse (boyfriend/girlfriend) or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

45) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

YOU APPLY FOR A POSITION THAT YOU WANT VERY BADLY (e.g., IMPORTANT JOB, GRADUATE SCHOOL ADMISSION, etc.) AND YOU GET IT

46) Write down <u>one</u> major cause_____

47) Is the cause of your getting the position due to something about you or something about other people or circumstances? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |

48) In the future when applying for a position, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

49) Is the cause something that just influences applying for a position or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

50) How important would this situation be if it happened to you? (Circle one number)

| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |
|---|---|---|---|---|---|---|---|---|

YOU GO OUT ON A DATE AND IT GOES BADLY

51) Write down the <u>one</u> major cause_____

52) Is the cause of the date going badly due to something about you or something about other people or circumstances? (Circle one number)

| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |
|---|---|---|---|---|---|---|---|---|

53) In the future when dating, will this cause again influence what happens? (Circle one number)

| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |
|---|---|---|---|---|---|---|---|---|

54) Is the cause something that just influences dating or does it also influence other areas of your life? (Circle one number)

| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |
|---|---|---|---|---|---|---|---|---|

55) How important would this situation be if it happened to you? (Circle one number)

| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |
|---|---|---|---|---|---|---|---|---|

YOU AND THE MEMBERS OF YOUR HOUSEHOLD HAVE BEEN GETTING ALONG WELL

56) Write down the <u>one</u> major cause_____

57) Is the cause of your household getting along well due to something about you or something about the other people or circumstances? (Circle one number)

| Totally due to other people or circumstances | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Totally due to me |
|---|---|---|---|---|---|---|---|---|

58) In the future in your household, will this cause again influence what happens? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Will never again influence what happens | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Will always influence what happens |

59) Is the cause something that just affects how your household gets along or does it also influence other areas of your life? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Influences just this particular situation | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Influences all situations in my life |

60) How important would this situation be if it happened to you? (Circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Not at all important | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Extremely important |

# APPENDIX B

# MAACL PRE-GAME FORM

DIRECTIONS: Circle the words that describe the way you are right now. Some of the words may sound alike, but we want you to check all the words that describe your feelings.

1. powerful
2. lucky
3. stubborn
4. reckless
5. healthy
6. gloomy
7. amiable
8. good-natured
9. sad
10. contrary
11. lonely
12. enraged
13. daring
14. frightened
15. impatient
16. kindly
17. adventurous
18. lost
19. tender
20. cooperative
21. peaceful
22. mild
23. strong
24. warm
25. forlorn
26. bashful
27. hostile
28. obliging
29. vexed
30. young
31. patient
32. terrified
33. calm
34. joyful
35. thoughtful
36. fine
37. awful
38. inspired
39. alive
40. bored
41. clean
42. meek
43. discontented
44. fit
45. suffering
46. furious
47. free
48. aggressive
49. discouraged
50. willful
51. cross
52. cool
53. amused
54. critical
55. grim
56. whole
57. unhappy
58. tormented
59. annoyed
60. sullen
61. hopeless
62. complaining
63. offended
64. steady
65. upset
66. desperate
67. shaky
68. timid
69. understanding
70. glad
71. outraged
72. unsociable
73. interested
74. disagreeable
75. affectionate
76. happy
77. enthusiastic
78. frank
79. cruel
80. cautious
81. agitated
82. merry
83. devoted
84. miserable
85. panicky
86. indignant
87. irritated
88. mad
89. fearful
90. pleasant
91. alone
92. tense
93. secure
94. wilted
95. friendly
96. jealous
97. worrying
98. safe
99. low
100. nervous
101. contented
102. agreeable
103. satisfied
104. displeased
105. stormy
106. shy
107. afraid
108. mean
109. gay
110. angry
111. quiet
112. disgusted
113. blue
114. loving
115. cheerful
116. wild
117. rough
118. active
119. sympathetic
120. sunk
121. tame
122. soothed
123. polite
124. gentle
125. pleased
126. rejected
127. good
128. terrible
129. destroyed
130. energetic
131. incensed
132. bitter

# MAACL POST-GAME FORM

DIRECTIONS: Circle the words that describe the way you are right now. Some of the words may sound alike, but we want you to check all the words which describe your feelings.

1. miserable
2. fit
3. desperate
4. tense
5. indignant
6. timid
7. contented
8. meek
9. mad
10. obliging
11. cooperative
12. quiet
13. sullen
14. clean
15. impatient
16. shaky
17. grim
18. frank
19. calm
20. aggressive
21. cheerful
22. wilted
23. affectionate
24. lonely
25. discouraged
26. loving
27. upset
28. awful
29. joyful
30. inspired
31. disagreeable
32. alone
33. good
34. nervous
35. irritated
36. whole
37. tender
38. polite
39. soothed
40. pleasant
41. amused
42. displeased
43. safe
44. warm
45. friendly
46. thoughtful
47. furious
48. active
49. cross
50. strong
51. bored
52. young
53. alive
54. worrying
55. happy
56. stormy
57. glad
58. secure
59. outraged
60. frightened
61. stubborn
62. cautious
63. tame
64. agreeable
65. interested
66. forlorm
67. unhappy
68. merry
69. gloomy
70. discontented
71. unsociable
72. devoted
73. peaceful
74. suffering
75. kindly
76. panicky
77. destroyed
78. good-natured
79. vexed
80. hostile
81. amiable
82. sympathetic
83. lost
84. annoyed
85. hopeless
86. mean
87. critical
88. satisfied
89. cool
90. daring
91. complaining
92. pleased
93. sunk
94. gentle
95. incensed
96. rough
97. enthusiastic
98. terrified
99. reckless
100. enraged
101. willful
102. mild
103. adventurous
104. lucky
105. tormented
106. fearful
107. furious
108. disgusted
109. agitated
110. fine
111. healthy
112. rejected
113. free
114. blue
115. energetic
116. contrary
117. terrible
118. low
119. sad
120. shy
121. cruel
122. wild
123. gay
124. patient
125. steady
126. powerful
127. afraid
128. jealous
129. understanding
130. angry
131. bitter
132. offended

# MOOD CHANGE MEASURE

DIRECTIONS: Read the following words one at a time. Compared to how you felt before the game, how much more or less do you feel this way now? Circle one number for each word.

| | MUCH LESS SO | LESS SO | THE SAME | MORE SO | MUCH MORE SO |
|---|---|---|---|---|---|
| 1. lonely | 1 | 2 | 3 | 4 | 5 |
| 2. miserable | 1 | 2 | 3 | 4 | 5 |
| 3. merry | 1 | 2 | 3 | 4 | 5 |
| 4. suffering | 1 | 2 | 3 | 4 | 5 |
| 5. fine | 1 | 2 | 3 | 4 | 5 |
| 6. active | 1 | 2 | 3 | 4 | 5 |
| 7. lost | 1 | 2 | 3 | 4 | 5 |
| 8. tormented | 1 | 2 | 3 | 4 | 5 |
| 9. forlorn | 1 | 2 | 3 | 4 | 5 |
| 10. discouraged | 1 | 2 | 3 | 4 | 5 |
| 11. sunk | 1 | 2 | 3 | 4 | 5 |
| 12. gloomy | 1 | 2 | 3 | 4 | 5 |
| 13. wilted | 1 | 2 | 3 | 4 | 5 |
| 14. alone | 1 | 2 | 3 | 4 | 5 |
| 15. alive | 1 | 2 | 3 | 4 | 5 |
| 16. gay | 1 | 2 | 3 | 4 | 5 |
| 17. rejected | 1 | 2 | 3 | 4 | 5 |
| 18. blue | 1 | 2 | 3 | 4 | 5 |
| 19. terrible | 1 | 2 | 3 | 4 | 5 |
| 20. awful | 1 | 2 | 3 | 4 | 5 |
| 21. low | 1 | 2 | 3 | 4 | 5 |
| 22. healthy | 1 | 2 | 3 | 4 | 5 |
| 23. unhappy | 1 | 2 | 3 | 4 | 5 |
| 24. hopeless | 1 | 2 | 3 | 4 | 5 |

# APPROVAL SHEET

This thesis submitted by Joseph C. Yount has been read and approved by the following committee:

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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirement for the degree of Master of Arts.

December 11, 1980
Date

James E. Johnson
Director's Signature