COGNITIVE DISTORTION IN DEPRESSION:
A Comparative Experimental Analog Test of the Beck and Reformulated Seligman Models

Jerrold L. Suraskv*
Jefferson M. Fish**

RESUMO

O modelo de esquema cognitivo de Aaron Beck e o modelo reformulado de desalento de Martin Seligman de depressão, são comparados no presente trabalho. A atribuição de sucesso e fracasso de 48 estudantes universitários depressivos e 48 ss não depressivos e sua correlação com a auto-estima e depressão em uma amostra de 262 sujeitos foram estudadas.

Os resultados indicaram que os sujeitos depressivos atribuiam mais freqüentemente do que os outros ss seu fracasso a fatores internos e seu sucesso a fatores externos, conforme previsto por ambos os modelos. Os dados não deram apoio à previsão feita pelo modelo de Seligman quanto às variáveis estabilidade x instabilidade, global x específico e pessoal x universal que foram estudadas. Os ss depressivos eram consideravelmente mais pessimistas do que os não depressivos quanto à confiança em ter sucesso. A correlação entre auto-estima e depressão foi 58. Esta relação foi reduzida para 56 quando o fator interiorização foi eliminado.

COGNITIVE DISTORTION IN DEPRESSION:
A comparative Experimental Analog Test of the Beck and Reformuled Seligman Models

Depression is classified by the current edition of the **Diagnostic and Statiscal Manual of Mental Disorders** (American Psychiatric Association, 1980) as an affective disorder, the essential feature of which is a disturbance of mood. Litlle singnificance is attributed to cognitive factors. Alternatively, the theorical models of Aaron Beck and Martin Seligman propose that the symptoms of depression result from cognitive, depressonenic distortions.

The purpose of the present study has been to experimentally test and compare Beck's cognitive schema model" and Seligmans's "reformulated learned helplessness model". Its broader aim is to contribute to our understanding of depression – a clinical syndrome that has been described for centuries, but never adequately explained.

* Creedmoor Psychiatric Center
** St. Jonhn's University

Rizley (1978) designed a series of experiments, using a college undergraduate sample, which addressed themselves to a comparison of the Beck and Seligman models of depression. However, since that time, Seligman and his colleagues (Abramson, Seligman & Teasdale, 1978) have reformulated the learned helplessness model. In this reformulation, the model's predictions regarding depressives' causal ascriptions for success and failures have changed. Thus, Rizley's 1978 study is outdated. Since Rizley's (1978) results were inconsistent with Seligman's original theory, a study that takes into account the new predictions as described in the reformulated model is needed. Further, since the reformulated model comes much closer to Beck's (1970) model than the original one (Seligman, 1975) on the dimension of locus of causality, an issue that polarizes the two models — that of self-esteem — must be considered.

The present study has built upon Rizley's (1978) first experiment by adding a manipulation designed to assess the personal-universal helplessness distinction, and by adding the classifying variables of self-esteem and locus of control. With these changes, it becomes possible to test Seligman's reformulated model and compare the two theories.

According to Beck's cognitive schema model, during early childhood people become prone to depression by acquiring negative attitudes regarding themselves, their environment, and their future. They acquire a negative cognitive set, referred to by Beck (1970) as "the cognitive triad." This concept is the essence of Beck's model. As a result of this negative cognitive set, people become hypersensitive to stress involving deprivation, frustration, rejection, loss, and perceived threats to self-esteem. When later faced with such stress, the negative schemas become activated, leading to depressive ideas, and, in turn, depressive feelings. As the schemas become more active, they are evoked by stimuli which are less congruent with them. In this way, reality becomes distorted to fit the schema (Beck, 1970).

Depressives rigidly perceive themselves as inadquate, undesirable and worthless. They tend to attribute adverse experiences to some deficiency within themselves, then criticze themselves for the alleged defect. They blame themselves for failure, and they have difficulty taking credit for their achievements. Low self-esteem predominates (Beck, 1970).

The second component of the cognitive triad, a negative view of the environment, is manifested in the tendency for depressives to view the world as too demanding and full of obstacles. The world is experienced as a depriving, frustrating place (Beck, 1970).

A negative view of the future completes the cognitive triad. When depressives look to the future, they readily anticipate failure, or

expect in some way to fall short of their goals. They are markedly pessimistic, with nihilistic expectations, and a sense of hopelessness (Beck, 1970).

Thus, depressives consistently and repeatedly interpret their experiences, themselves, and the future in a negative way. Once these cognitive schemas are activated, all perception is filtered through the negative cognitive set. Since, according to the theory, "the affective response is determined by the way an individual structures his experience" (Beck, 1970, p. 287), the various symptoms of depression are seen as consequences of the negative beliefs that constitute the cognitive triad. The affective symptoms of feeling sad and lonely, the motivational symptoms of escapist and suicidal wishes, increased dependency and indecisiveness, as well as the physical symptom of psychomotor retardation are all seen as deriving from a negative view of oneself, one's environment, and one's future (Beck, 1970):

> Beck conceives of depression as a circular feedback process. In phenomenological terms, the depressive's negative ideation leads to sadness; he labels the sadness as a sign that his life is painful and hopeless. These negative interpretations of the affect further reinforce his negative attitudes. Hence, a vicious cycle is produced. (Beck, 1974a, p. 63).

According to Seligman's learned helplessness model, the fundamental depressogenic cognition of a depressed person is one of helplessness-depression results from learning that outcomes are uncontrollable (Seligman, 1975; Seligman, Klein & Miller, 1975). Depressives feel that their efforts to cope with life events are useless because they have come to believe that outcomes are independent of their responses (Seligman, Klein & Miller, 1975). Thus, since depressives were seen as considering causality to be due to external factors beyond their control, the model predicted that they would minimize their causal responsibility and for control over all possible outcomes (Rizley, 1978).

However, this original model could not adequately account for depressed people's low opinion of themselves. Abramson and Sackheim (1977) pointed to the widely accepted clinical observation that depressives frequently blame themselves for negative outcomes. They asked how it is possible for people to blame themselves for outcomes which, according to the model, they believe they can do nothing about.

In an effort to resolve this paradox, Abramson, Seligman and Teasdale (1978) reformulated the learned helplessness model of depression. They argued that when people find that they are helpless, they

ask why they are helpless. The causal attribution that they make then determines the nature of their depression.

The authors made the distinction between personal and universal helplessness. The revised theory now proposes that when individuals perceive outcomes to be relatively unique to themselves in comparison with relevant others (personal helplessness), they consider these outcomes to be the result of internal factors. Alternatively, when people perceive outcomes to be relatively common in comparison with relevant others (universal helplessness), they consider these outcomes to be the result of external factors. Situations where individuals believe they cannot solve problems that others can are instances of personal helplessness. Situations where individuals "believe that neither they nor relevant others can solve the problem are instances of universal helplessness" (Abramson, Seligman & Teasdale, 1978, p. 54).

The reformulation, then, regards "external locus of control" and "helplessness" as independent of each other. Exposure to uncontrollable events (i.e., helplessness) is still seen as the primary etiological agent in producing depression, but one can now be internally or externally helpless. The theory predicts that universally helpless people attribute their failure to internal factors, whereas, personally helpless people attribute their failure to external factors. It is only in the personally helpless-perceived internal locus of control condition that the depression will be accompanied by low self-esteem. The theory, therefore, maintains that low self-esteem is manifested in some depressions, but not all (Abramson, Seligman & Teasdale, 1978).

The original learned helplessness model (Seligman, 1975) was also vague about considerations of the chronicity and generality of depression. After all, the time course for depression varies widely from individual to individual, and depressions are sometimes generalized across situations, at other times quite specific.

In order to deal with this inadequacy, the reformulated model (Abramson, Seligman & Teasdale, 1978) derived a major new set of predictions about this issue. The authors made the distinction between stable versus unstable factors and global versus specific factors.

"Stable factors are thought of as long-lived or recurrent, whereas unstable factors are short-lived or intermittent" (Abramson, Seligman & Teasdale, 1978, p. 56). Stable factors purportedly lead to chronicity in depression "because they imply to the individual that he will lack the controlling response in the future as well as now" (Abramson, Seligman & Teasdale, 1978, p. 58). "Global factors affect a wide variety of outcomes, but specific factors do not" (Abramson, Seligman & Teasdale, 1978, p. 57). Global factors purportedly lead to generality in

depression because they "imply to the individual that when he confronts new situations the outcome will again be independent of his responses" (Abramson, Seligman & Teasdale, 1978, p. 57).

Thus, the reformulated model suggests that the chronicity and generality of deficits in depression dependes upon the respective stability and globality of the causal ascription that depressives make for their depression. It is assumed that the more global and stable one's causal ascription, the more pervasive and chronic the depression will be.

Therefore, the generality of the depressive deficits is contingent upon the globality of one's causal ascription for helplessness, and the chronicity of the depressive deficits is contingent upon the stability of one's causal ascription for helplessness. The lowering of self-esteem is contingent upon the internality of one's causal ascription for helpleness, which, in turn, is contingent upon the experience of a personaly helpless condition. Further, depressed people are now seen to irrationally distort their attributions for failure in the direction of global, stable and internal factors, and their attributions for success in the direction of specific, unstable and external factors (Abramson, Seligmans & Teasdale, 1978). This distortion is referred to as the depressive's attributional style.

In summary, according to Beck, depressed people tend to attribute their failure to internal factors, and their success to external factors. Further, depressives tend to be pessimistic about their chances for future success, and exhibit low self-esteem. Along with the cognitive triad, low self-esteem can be viewed as the hallmark of Beck's model.

Seligman's reformulated learned helplessness model assumes that depression results from helplessness, i.e., learning that outcomes are uncontrollable. Further, "When a person finds that he is helpless, he asks why he is helpless. The causal attribution that he makes then determines the generality and chronicity of his helplessness deficits, as well as his later self-esteem" (Abramson, Seligman & Teasdale, 1978, p. 50).

In assessing why they are helpless, depressives purportedly make a comparison between themselves and relevant others on the uniqueness of their experience. Personally helpless people attribute their helplessness to internal factors and exhibit low self-esteem. Universally helpless people attribute their helplessness to external factors and do not suffer from low self-esteem. According to the reformulated learned helplessness model, depressed people tend to attribute their failure to internal, stable and global factors, and their success to external, unstable and specific factors.

METHOD

Subjects

Two hundred sixty-two undergraduate volunteers from psychology classes in two institutions of higher learning on the East Coast were tested in groups of 25 to 50. This sample consisted of 205 females and 57 males, with an age range from 18 to 45 years, a mean age of 20.23 years, and a median age of 19 years.

Although there were no differential predictions regarding gender, the number of males and females per cell was held constant for all 12 cells (two males and six females) to control for sex differences. It is generally conceded that depression is more frequent for females than males in the general population (Schwab, Brown, Holzer & Sokolof, 1968; Silverman, 1968).

The treatment of all subjects in this experiment was in accordance with the **Ethical Principles in the Conduct of Research with Human Participants** (American Psychological Association, 1973). Participation was totally voluntary, and, though the subjects were students, there was no alternative assignment for those who chose not to participate.

Classifying Instruments

The Beck Depression Inventory. The Beck Depression Inventory (BDI; Beck, 1970) was used to divide the subject pool into depressed and nondepressed groups.

Although the BDI was originally designed and validated on a psychiatric population, it was subsequently validated on a university population (Bumberry, Oliver & McClure, 1978).

Subjects who scored in the upper and lower quartiles on the BDI represented the depressed and nondepressed groups, respectively. This procedure is more desirable than the "mean split" typically used by Seligman and his colleages (e.g., Miller & Seligman, 1973; 1975; Miller, Seligman & Kurlander, 1975) and the "upper quartile-median or below split" used by Rizley (1978), as it more likely compared subjects who actually scored in the clinically depressed range with subjects who have very little depressive symptomatology.

The subjects' scores on the BDI ranged from 0 to 40, with a mean of 9.08, a standard deviation of 6.79, and a median of 7.00. The upper and lower quartile cut-off scores were 13 and 5, respectively. This compares favorably to Rizley's (1978) study, where the cut-off scores of 12 and 7 were utilized. In order to equate cell sizes and the number of

males and females per cell, 64 subjects were randomly eliminated from the analyses. Five other subjects were removed because postexperimental inquiry revealed relevant guesses about the hypotheses or experimental task. In the end, the data of 24 males and 72 females were used in the experiment.

The Janis-Field Feelings of Inadequacy Scale. The Janis-Field Feelings of Inadequacy Scale (Eagly, 1969) was used to classify subjects on the variable of self-esteem. The items in the scale generally measure self-esteem in social areas such as assertiveness. Because of its use by Janis and others in early persuasibility research (e.g., Hovland & Janis, 1959) this scale has been widely used (Crandall, 1973). The revised version by Eagly (1969) constains 20 items, answered on five-point Likert scales and balanced for response bias. Scores can range from 20 (very low self-esteem) to 100 (very high self-esteem).

All 262 subjects were used to test correlational hypotheses involving the Janis-Field Feelings of Inadequacy Scale, in order not to artificially restrict the range of scores. The range of self-esteem scores in this sample was from 31 to 99, with a mean of 69.24 and a standard deviation of 12.53.

Rotter's Internal-External Locus of Control Scale. Rotter's Internal-External Locus of Control Scale (Rotter, 1966) was used to classify subjects on the locus of control variable.

All subjects were used to test correlational hypotheses involving the Rotter Internal-External Locus of Control Scale in order not to artificially restrict the range of scores. However, since two subjects did not complete the scale, 260 subjects remained for these analyses. The range of scores for the entire sample was from 1 to 20, with a mean of 11.81 and a standard deviation of 3.99.

Design

The present study assessed and compared the predictions of the Beck and reformulated Seligman models by measuring causal ascription for success and failure on a novel, achievement-related task. According to Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1971):

> Individuals utilize four elements of ascription both to postdict (interpret) and to predict the outcome (O) of an achievement-related event. The four causal elements are ability (A), effort (E), task difficulty (T), and luck (L):

$$O = f(A, E, T, L).$$

> That is, in attempting to explain the prior outcome (success or failure) of an achievement-related event, the individual assesses his own or the performer's ability level, the amount of effort that was expended, the difficulty of the task, and the magnitude and direction of the experienced luck. It is assumed that values are assigned to these elements and the task outcome differentially ascribed to the four causal sources. (Weiner, et. al., 1971, p. 2).

These four elements of ascription have served as the dependent measures in the current experient. Note that two of them (ability and effort) describe essentially internal qualities, while the remaining two components (task difficulty and luck) describe external factors. Two of the elements (ability and task difficulty) are relatively stable and enduring, while effort and luck are unstable and variable (Weiner, et al., 1971). Finally, skill and luck are the more global, generalizable components; task difficulty and effort are more specific to the situation and imply a more limited applicability (Abramson, Seligman & Teasdale, 1978). Therefore, each of the four dependent measures corresponds to a direct and concealed aspect of the dimensions considered to be important by the Beck and Seligman models of depression.

In order to elicit these causal ascriptions, an experimental "number-guessing task" described both by Weiner and Kukla (1970) and by Rizley (1978) has been utilized. Its distinctive feature is that it can be legitimately interpreted as **either** a chance or skill task. "Since one's performance could reasonably be attributed to effort, luck, ability, or task difficulty, any bias in the perception of causal and controlling relations associated with depression should have been revealed directly in the retrospective causal ascription for performance" (Rizley, 1978, p. 34). In this way, depressives' attributional style has been assessed.

The personal-universal distinction has been examined by providing subjects with false feedback regarding prior performance on the same task by their peers. One-third of the subjects received information stating that approximately 90% of college students pass this type of task; one-third of the subjects received information stating that approximately 10% of college students pass this type of task; and one-third of the subjects received no information in this regard. The use of this manipulation was designed to facilitate the self-other performance comparison described in the reformulated learned helplessness model.

The inclusion of self-esteem and locus of control questionnaires has served various functions. First, it permits an examination of the differentially hypothesized extent to which low self-esteem is associated with depression. Second, it permits an examination of the specific connection between type of ascription

(internal-external), type of helplessness (personal-universal), and low self-esteem postulated by the reformulated learned helplessness model. Third, it provides an important check on the possibility that the personal-universal helplessness distinction is valid, but irrelevant to low self-esteem and depression. Finally, it provides a check on the causal ascriptions of internality and externality – the critical dimension that differentiates the predictions of the two theories in the experimental task.

Table 1 summarizes the predicted causal ascriptions of the two theories. It indicates eight cases where they make similar predictions, four cases where they make opposite predictions (highlighted in italics) and twenty-four cases where Seligman's reformulated learned helplessness theory makes predictions while Beck's theory makes none.

TABLE 1

Summary of Two Theories' Predicted Causal Ascriptions for Depression x Outcome x Personal-Universal Conditions [a,b]

Beck's Cognitive Schema Model

	Depressed			Nondepressed	
Personal	Universal	Control	Personal	Universal	Control
Pass					
External	External	External	Internal	**Internal**	Internal
Fail					
Internal	**Internal**	Internal	**External**	External	External

Seligman's Reformulated Learned Helplessness Model

	Depressed			Nondepressed	
Personal	Universal	Control	Personal	Universal	Control
Pass					
Internal	External	External	Internal	**External**	Internal
Unstabel	Unstable	Unstable	Stable	Stable	Stable
Specific	Specific	Specific	Global	Global	Global
Fail					
Internal	**External**	Internal	**Internal**	External	External
Stable	Stable	Stable	Unstable	Unstable	Unstable
Global	Global	Global	Specific	Specific	Especific

[a] Internal = effort + ability; External = luck + task difficulty; Stable = task difficulty + ability; Unstable = luck + effort; Global = luck + ability; Specific = effort + task difficulty.

[b] Note that in the crucial conditions, where the predictions for the two theories differ, the causal ascriptions are italicized. Further not that, in these critical conditions, the components of the causal ascriptions (effort + ability versus task difficulty + luck) consist of non-overlapping ratings, allowing for a direct test of the contradictory predictions.

Procedure

Upon completion of the informed consent blank, each subject received a booklet containing the experimental materials. The subjects then completed the Beck Depression Inventory and the Janis-Field Feelings of Inadequacy Scale. Afterwards, they received printed instructions to place a check mark on a line divided in seven equal parts to rate their confidence in succeeding on a task that they were about to be given. The line ranged from "I am not at all confident of succeeding" to "I am very confident of succeeding."

When all subjects had reached this point, the examiner read aloud the following instructions to the experimental task, which were adapted from Rizley (1978) and Weiner and Kukla (1970):

> You will be performing an experimental test. I have in front of me a list of 25 numbers, either zeros or ones, in an order which is unknown to you. Your task is to predict whether the next number on my list is either a zero or a one. You will write down your predictions on the blanks by each number on the answer sheet, and then I will tell you what the number actually was. You will mark whether your answer was correct or not by circling the word "right" if your answer was correct, and by circling the word "wrong" if your answer was incorrect. You will then be asked to make your next prediction, and so on, until all 25 predictions have been completed. There is no simple sequence to the numbers that you could easily recognize and get all the answers correct from then on, such as 010101 or 01001001, etc. However, the list of numbers is also not random. Instead, there are certain general trends and tendencies in the list—maybe a greater frequency of one kind of pattern over another. To the extent that you can become sensitive to those tendencies, you can make your score come out consistently above chance. Of course, your score will also be influenced by luck, how difficult the general patterns in the list are to detect, your skill and ability, and how hard you try on the test. Your will be told later how well you did on the test, and whether you passed or failed. Any questions ? Please begin. You have 15 seconds to write down your first prediction – either a zero or a one.

"The list of zeros and ones was randomly determined so that one's score was determined solely by chance. However, the instructions suggested that performance could legitimately be attributed to the operation of luck, ability, effort, task difficulty, or some combination of these four factors" (Rizley, 1978, p. 36).

After completion of the experimental task, subjects were directed to turn the page, where the test materials requested them to count the number of correct answers they had obtained. The materials went on to say that those scoring 13 or above had succeeded (passed) the task, and that those who had scored 12 or below had failed.

On one-third of the test booklets the next sentence informed the subjects that "Previous research has indicated that approximately 90% of undergraduate college students pass this type of task." Another one-third of the test booklets contained the alternative information, "Previous research has indicated that approximately 10% of undergraduate college students pass this type of task." These false norms were designed to directly correspond to Abramson, Seligman and Teasdale's (1978) distinction between personal and universal helplessness. Note that those subjects who failed and were given the feedback of a 90% passing rate constituted the "personal failure" group, while those who failed and were given the feedback of a 10% passing rate constituted the "universal failure" group. Similarly, those subjects who passed and were given the feedback of a 10% passing rate constituted the "personal success" group, whereas those subjects who passed and were given the feedback of a 90% passing rate constituted the "universal success" group. The remaining one-third of the test booklets had no such instructions, thus serving as a control for the personal-universal variable.

All subjects were then directed to one of two questionnaires, one inquiring about causal determinants of success and the other about the causal determinants of failure. The instructions to these questionnaires were adapted from Rizley (1978) and Feather and Simon (1971), and requested ratings on seven point scales (similar to the one described above) of the degree to which success or failure on the task was viewed as resulting from luck, ability, effort or task difficulty.

Subjects were then asked to write their thoughts about the experiment and its purpose, reasons for their beliefs, and reactions to the numbers prediction task.

Following this post-experimental questionnaire, subjects completed the Rotter Internal-External Locus of Control Scale. Finally, after all classes within each college had been tested, the experimenter returned and thoroughly debriefed the subjects as to the nature and purposes of the experiment. The total length of the experiment was approximately 55 minutes.

RESULTS

Among the 96 subjects in the experimental groups, the BDI scores for the 48 nondepressed subjects were between 0 and 5, with a

mean of 2.98 and a standard deviation of 1.68. The 48 depressed subjects scored in the clinically depressed range on the BDI (Beck, 1970; Bumberry, et. al., 1978), with a range of 13 to 40, a mean of 18.69, and a standard deviation of 6.23.

Depression x Outcome x Personal-Universal Conditions

Completely randomized factorial analyses of variance were performed on ratings of task difficulty, effort, luck and ability, as well as on their theoretically relevant combinations of internality (effort and ability), externality (luck and task difficulty), stability (task difficulty and ability), instability (luck and effort), globality (luck and ability) and specificity (task difficulty and effort). Level of depression (depressed or nondepressed), type of outcome (pass or fail), and type of feedback (personal, universal, or no feedback) are the between factors that served as the independent variables in these analyses.

A three-way analysis of variance revealed a significant interaction effect of depression x outcome on the dependent variable of task difficulty, $F (1, 84) = 6.46$, $p < .05$. The main effects for depression and outcome were not significant, and the personal-universal factor was also not significant, either as a main effect or as part of an interaction.

An analysis of variance of simple effects revealed a significant difference between depressed and nondepressed subjects who passed the task, $F (1, 84) = 7.87$, $p < .05$. However, the difference between depressed and nondepressed subjects who failed the task was not statistically significant.

Depressed subjects who passed the task ($M = 4.38$) rated the ease of the task as a significantly more important reason for their success than did nondepressed subjects who passed ($M = 3.04$).

An analysis of simple effects, for passing and failing subjects as a function of depression on ratings of task difficulty, revealed a significant difference between passing and failing subjects in the depressed group, $F (1, 84) = 6.92$, $p < .05$. Among the depressed subjects, those who passed ($M = 4.38$) rated task difficulty as a significantly more important determinant of their performance than did those subjects who failed ($M = 3.13$).

A three-way analysis of variance revealed a significant main effect for outcome, $F (1, 84) = 10.51$, $p < .01$, a significant interaction effect of depression x outcome, $F (1, 84) = 10.51$, $p < .01$, and a significant interaction effect of depression x outcome x personal, universal and control conditions, $F (2, 84) = 3.16$, $p < .05$, on the dependent variable of effort. The main effects for depression and type of feedback

were not significant. The means for outcome indicate that subjects who passed (M = 4.96) rated effort as a significantly more important determinant of their performance than did those subjects who failed (M = 3.83). However, the meaning of this finding is altered by the presence of significant interactions. Further, the meaning of the significant two-way interaction is altered by the presence of the significant three-way interaction.

An analysis of simple effects for depressed and nondepressed subjects as a function of outcome and type of feedback on ratings of effort revealed no significant differences between depressed and nondepressed subjects who passed or failed under personal or universal conditions. There was a significant difference, however, between depressed and nondepressed subjects who passed under the control condition, $F(1, 84) = 5.54$, $p < .05$, and between depressed and nondepressed subjects who failed under the control condition, $F(1, 84) = 8.65$, $p < .01$.

Depressed subjects who passed under the control condition (M = 4.00) rated their effort as a significantly less important reason for their success than did nondepressed subjects who passed in the control condition (M = 6.00). This trend was reversed among failing subjects under the same feedback condition. Depressed subjects who failed under the control condition (M = 5.25) rated their lack of effort as a significantly more important reason for their failure than did nondepressed subjects who failed under the control condition (M = 2.75). The direction of the differences between depressed and nondepressed subjects in the personal and universal conditions tended to mirror those just cited for the control condition.

An analysis of simple effects for passing and failing subjects as a function of depression and type of feedback on ratings of effort revealed no significant differences between passing and failing subjects in the depressed group, regardless of the type of feedback they received. Significant differences were found, however, between passing and failing subjects in the nondepressed group under all three feedback conditions. There was a significant difference between nondepressed passing and failing subjects under the personal condition, $F(1, 84) = 4.24$, $p < .05$, under the universal condition, $F(1, 84) = 4.24$, $p < .05$, and under the control condition, $F(1, 84) = 14.62$, $p < .01$. Among the nondepressed subjects, those who passed rated effort as a significantly more important determinant of their performance than did those subjects who failed. This trend held up for the personal condition (M for passing = 5.00; M for failing = 3.25), the universal condition (M for passing = 4.88; M for failing = 3.13), and under the control condition (M for passing = 6.00; M for failing = 2.75). Thus, regardless of the type of feedback received (personal, universal, or no feedback),

nondepressed, passing subjects rated effort as a significantly more important determinant of their performance than did nondepressed, failing subjects.

An analysis of simple effects for subjects who received personal, universal and no feedback, as a function of depression and outcome on ratings of effort revealed no significant differences between personal, universal and control conditions, regardless of degree of depression and type of outcome.

A three-way analysis of variance revealed only a significant interaction effect of depression x outcome on the dependent variable of luck, $F(1, 84) = 7.58$, $p < .01$. The main effects for depression and outcome were not significant, and the personal-universal factor was also not significant, either as a main effect or as part of an interaction.

An analysis of simple effects for depressed and nondepressed subjects as a function of outcome on ratings of luck revealed a significant difference between depressed and nondepressed subjects who failed the task, $F(1, 84) = 4.51$, $p < .05$. However, the difference between depressed and nondepressed subjects who passed the task was not statistically significant. Depressed subjects who failed the task ($M = 4.46$) rated bad luck as a significantly less important reason for their failure than did nondepressed subjects who failed ($M = 5.46$).

An analysis of simple effects for passing and failing subjects as function of depression on ratings of luck revealed a significant difference between passing and failing subjects in the depressed group, $F(1, 84) = 4.51$, $p < .05$. Among the depressed subjects, those who passed ($M = 5.46$) rated luck as a significantly more important determinant of their performance than did those subjects who failed ($M = 4.46$).

A three-way analysis of variance revealed a significant main effect for outcome, $F(1, 84) = 52.95$, $p < .01$, and a significant interaction effect of depression x outcome, $F(1, 84) = 6.53$, $p < .05$, on ratings of ability. The main effect for depression was not significant, and the personal-universal factor was also not significant, either as a main effect or as part of an interaction. Subjects who passed ($M = 4.50$) rated ability as a significantly more important determinant of their performance than did those subjects who failed ($M = 2.19$). This trend held up under all conditions, regardless of degree of depression and type of feedback received.

An analysis of simple effects for depressed and nondepressed subjects as a function of outcome on ratings of ability revealed a significant difference between depressed and nondepressed subjects who passed the task, $F(1, 84) = 4.16$, $p < .05$. Depressed subjects who passed the task ($M = 4.04$) rated their ability as a significantly less important

reason for their success than did nondepressed subjects who passed (M = 4.96).

An analysis of simple effects for passing and failing subjects as a function of depression on ratings of ability revealed significant differences. Among the depressed subjects, those who passed (M = 4.04) rated ability as a significantly more important determinant of their performance than did those subjects who failed (M = 2.54). This pattern was repeated in the nondepressed group. Nondepressed subjects who passed (M = 4.96) also rated ability as a significantly more important determinant of their performance than did nondepressed subjects who failed (M = 1.83). Depressed subjects did, however, rate ability as a less important reason for their success than did nondepressed subjects.

A three-way analysis of variance revealed a significant main effect for outcome, $F\ (1, 84) = 56.72$, $p < .01$, and a significant interaction effect of depression x outcome, $F\ (1, 84) = 16.97$, $p < .01$, on the dependent variable of internality (effort and ability). The main effect for depression was not significant, and the personal-universal factor was also not significant, either as a main effect or as part of an interaction. Subjects who passed (M = 9.46) rated internal factors as significantly more important determinants of their performance than did those subjects who failed (M = 6.02). This trend held up under all conditions, regardless of degree of depression and type of feedback received. However, the meaning of this finding is altered by the presence of the signficant depression x outcome interaction.

An analysis of simple effects for depressed and nondepressed subjects as a function of outcome on internal ratings revealed significant differences between depressed and nondepressed subjects under both passing, $F\ (1, 84) = 5.66$, $p < .05$, and failing conditions, $F\ (1, 84) = 11.87$, $p < .01$. Depressed subjects who passed the task (M 8.67) rated internal factors as significantly less important determinants of their success than did nondepressed subjects who passed (M = 10.25). This pattern was reversed among failing subjects. Depressed subjects who failed the task (M = 7.17) rated internal factors as significantly more important determinants of their failure than did nondepressed subjects who failed (M = 4.88).

An analysis of simple effects for passing and failing subjects as a function of depression on internal ratings revealed significant differences between passing and failing subjects in both the depressed, $F\ (1, 84) = 5.08$, $p < .05$, and the non depressed groups, $F\ (1, 84) = 65.29$, $p < .01$. Among the depressed subjects, those who passed (M = 8.67) rated internal factors as significantly more important determinants of their performance than did those subjects who failed (M = 7.17). This pattern was repeated in the nondepressed group. Nondepressed subjects who

passed (M = 10.25) also rated internal factors as significantly more important determinants of their performance than did nondepressed subjects who failed (M = 4.88). This pattern is the same as was found on the ratings of ability, an internal variable. Depressed subjects did, however, rate internal factors as less important determinants of their success, and more important determinants of their failure, than did nondepressed subjects.

A three-way analysis of variance revealed only a significant interaction effect of depression x outcome, $F(1, 84) = 14.91$, $p < .01$, on the dependent variable of externality (luck and task difficulty). The main effects for depression and outcome were not significant, and the personal-universal factor was also not significant, either as a main effect or as part of an interaction. An analysis of simple effects for depressed and nondepressed subjects as a function of outcome on external ratings revealed significant differences between depressed and nondepressed subjects under both passing, $F(1, 84) = 11.16$, $p < .01$, and failing conditions, $F(1, 84) = 4.50$, $p < .05$. Depressed subjects who passed the task (M = 9.83) rated external factors as significantly more important determinants of their success than did nondepressed subjects who passed (M = 7.67). This pattern was reversed among failing subjects. Depressed subjects who failed the task (M = 7.58) rated external factors as significantly less important determinants of their failure than did nondepressed subjects who failed (M = 8.96).

An analysis of simple effects for passing and failing subjects as a function of depression on external ratings revealed significant differences between passing and failing subjects in both the depressed, $F(1, 84) = 12.04$, $p < .01$, and nondepressed groups, $F(1, 84) = 3.97$, $p < .05$. Among the depressed subjects, those who passed (M = 9.83) rated external factors as significantly more important determinants of their performance than did those subjects who failed (M = 7.58). This pattern was reversed in the nondepressed group. Nondepressed subjects who passed (M = 7.67) rated external factors as significantly less important determinants of their performance than did nondepressed subjects who failed (M = 8.96). This depressed subjects rated external factors as more important determinants of their success, and less important determinants of their failure, than did nondepressed subjects.

The results on the internal-external dimensions are supportive of Beck's model, in that significant differences were found between the depressed and nondepressed groups in the direction predicted by the model. That is, depressed subjects were found to attribute their failure to internal factors, and their success to external factors, to a greater extent than nondepressed subjects. The reformulated learned helplessness model also predicted that depressed subjects would attribute their failure to

internal factors, and their success to external factors to a greater extent than would nondepressed subjects. For this hypothesis, the two theories overlapped.

However, Seligman's reformulated model further predicted that the personal and universal feedback would affect subjects' internal and external attributions for their performance on the task. While these results support the hypothesis that depressives tend to make internal attributions for bad outcomes and external attributions for good outcomes, they do not support the predictions concerning the personal-universal distinction. Leading subjects to believe that their performances were relatively unique (the personal condition) did not tend to elicit internal attributions, and leading subjects to believe that their performances were relatively common (the universal condition) did not tend to elicit external attributions, to a greater extent than for a control group who had received no information in this regard. Overall, the personal-universal factor was of little significance in affecting subjects' attributions for success and failure on the internal-external dimension.

A three-way analysis of variance revealed a significant main effect for outcome, $F\ (1, 84) = 44.74$, $p < .01$ and a significant interaction effect of outcome x type of feedback, $F\ (2, 84) = 4.72$, $p < .05$, on the dependent variable of stability (task difficulty and ability). The main effects for depression and the personal-universal factor were not significant. Subjects who passed ($M = 8.96$) rated stable factors as significantly more important determinants of their performance than did those subjects who failed ($M = 5.65$). However, the meaning of this findings is altered by the presence of the significant outcome x type of feedback interaction.

As analysis of simple effects for passing and failing subjects as a function of type of feedback on stable ratings revealed significant differences between passing and failing subjects under universal, $F\ (1, 84) = 19.76$, $p < 01$, and under control conditions, $F\ (1, 84) = 32.30$, $p < .01$. However, the difference between passing and failing subjects under the personal condition was not statiscally significant. Subjects who passed under the universal condition ($M = 9.50$) rated stable factors as significantly more important determinants of their performance than did subjects who failed in the universal condition ($M = 5.69$). Subjects who passed in the control condition ($M = 9.50$) also rated stable factors as significantly more important determinants of their performance than did subjects who failed in the control condition ($M = 4.63$).

A three-way analysis of variance revealed only a significant main effect for outcome, $F\ (1, 84) = 8.20$, $p < .01$, on the dependent variable of instability (luck and effort). The main effects for depression and the personal-universal factor were not significant, and there were no

significant interactions. Subjects who passed (**M** = 10.00) rated unstable factors as significantly **more** important determinants of their performance than did subjects who failed (**M** = 8.79).

These results on stability and instability do not support the predictions of the reformulated learned helplessness model. The hypothesized interaction of depression x outcome was not significant in the analyses on stable and unstable factors. Subjects who passed the task tended to attribute their performance to both stable and unstable factors to a greater extent than did subjects who failed, regardless of all other conditions. It should be noted that Beck's model makes no prediction on this dimension.

A three-way analysis of variance revealed only a significant main effect for outcome, **F** (1, 84) = 35.78, $p < .01$, on the dependent variable of globality (luck and ability). The main effects for depression and the personal-universal factor were not significant, and there were no significant interactions. Subjects who passed (**M** = 9.54) rated global factors as significantly **more** important determinants of their performance than did those subjects who failed (**M** = 7.15); and this pattern held up for all conditions, regardless of degree of depression and type of feedback received.

A three-way analysis of variance revealed significant main effects for depression, **F** (1, 84) = 4.05, $p < .05$, and outcome, **F** (1, 84) = 12.88, $p < .01$, on the dependent variable of specificity (task, difficulty and effort). The main effect for the personal-universal factor was not significant, and there were no significant interactions. Depressed subjects (**M** = 8.40) rated specific factors as significantly **more** important determinants of their performance than did nondepressed subjects (**M** = 7.44). Subjects who passed (**M** = 8.77) rated specific factors as significantly **more** important determinants of their performance than did those subjects who failed (**M** = 7.06).

The results on globality and specificity do not support the predictions of the reformulated learned helplessness model. The hypothesized interaction effect of depression x outcome was not significant in the analyses on global and specific factors. Overall, subjects who passed the task tended to attribute their performance to both global and specific factors to a greater extent than did subjects who failed, regardless of all other conditions. In addition, depressed subjects tended to attribute their performance on the task to specific factors to a greater extent than did nondepressed subjects. It should be noted that Beck's model makes no prediction on this dimension.

Other Findings

Locus of control. The correlation between Rotter's Internal-External Locus of Control Scale and the Beck Depression

Inventory was found to be + .22, which is statistically significant ($p < .01$), but accounts for less than five percent of the variance. Therefore, this low correlation tends to provide some support for both models, which view locus of control as being a function of the evaluative nature of a given event. It appears that people's tendencies to be more internal or external vary, depending upon the outcome (positive or negative), and that Rotter's Internal-External Locus of Control Scale loses information by assuming the existence of a generalized propensity to be internal or external. The fact that the Rotter I-E Scale only correlated + .03 with actual external attributions, and only – .06 with actual internal attributions supports this conclusion.

Self-esteem. The correlation between the Janis-Field Feelings of Inadequacy Scale and the Beck Depression Inventroy was found to be – .58, which is statistically significant (p .01) and accounts for a third of the variance. The magnitude of this correlation tends to support Beck's low self-esteem model of depression more than it does Seligman's reformulated learned helplessness model. When internality is partialled out, the correlation remains – .56 ($p < .01$), and supports Beck's model in indicating a stable relationship between depression and low self-esteem. It is not supportive of the reformulated learned helplessness model, which hypothesizes that only internally depressed people suffer from low self-esteem.

Performance expectancy. A one-way analysis of variances revealed a significant effect for depression on the dependent variable of confidence in succeeding on the task (prior to finding out what it was), $F(1,94) = 51.68$, $p < .01$. Depressed subjects ($M = 4.19$) were significantly **more pessimistic**, than nondepressed subjects ($M = 5.85$) concerning their degree of confidence in succeeding on the novel, achievement-related task. These results are supportive of Beck's model, but are not predicted by Seligman's reformulated learned helplessness model.

DISCUSSION

The results of the present study provide strong support for Beck's cognitive schema model, but are not very supportive of Seligman's reformulated learned helplessness model. In fact, the only evidence for Seligman's model was found under conditions where the predictions of the two models were the same.

The most important finding of the study was that depressed and nondepressed college students were successfully differentiated on their post-performance causal ascriptions for success and failure. The depressed subjects attributed their failure to internal factors (effort and ability), and their success to external factors (luck and task difficulty), to a

significantly greater extent than did the nondepressed subjects. This result was predicted both by Beck's cognitive schema model and Seligman's reformulated learned helplessness model.

Seligman and his colleagues (Abramson, Seligman & Teasdale, 1978) had predicted that depressed and non-depressed groups would also differ on the stable-unstable and global-specific dimensions of causal ascription. Depressed subjects were expected to attribute their failure to stable and global factors, and their success to unstable and specific factors, to a greater extent than did the nondepressed subjects. However, this was not found to be the case.

The reformulated learned helplessness model had further predicted that leading subjects to believe that their performances were relatively unique (the personal condition) would elicit more internal attributions, and leading subjects to believe that their performances were relatively common (the universal condition) would elicit more external attributions, than would be found in a control group of subjects receiving no information in this regard. The hypotheses, derived from the personal-universal helplessness distinction, also received no support in the present study.

In light of these negative findings for the stable-unstable, global-specific, and personal-universal dimensions, the positive result on the internal-external dimension more clearly supports a negative self-concept model of depression.

A growing body of experimental research confirms the tendency for depressed college students to attribute their failure to internal factors to a greater extent than do nondepressed subjects. Three previous studies (Klein, Fencil-Morse & Seligman, 1976; Kupier, 1978; Rizley, 1978), for example, have found the identical trend. None of these studies, howeyer, was able to demonstrate that depressed subjects also rated external factors as more important reasons for success than did nondepressed subjects. In addition, Kupier (1978) and Rizley (1978) assessed the stable-unstable dimension of causal ascription and, like the present study, found no significant differences between depressed and nondepressed subjects on this dimension. The present study, therefore, not only replicates, but also extends the findings of previous research.

The only result of the present study on the internal-external dimension which is not entirely explained by Beck's model is that, among depressed subjects, those who passed rated internal factors as significantly more important determinants of their performance than did those subjects who failed. This trend is in the opposite direction to Beck's prediction.

However this finding becomes comprehensible when one notes the strength of the outcome factor in the analyses on ability, effort and internality. Subjects who passed the task tended to make more internal

attributions for their performance than did those subjects who failed, regardless of degree of depression. Thus, while all comparisons between depressed and nondepressed subjects were consistent with Beck's model, the comparisons among depressed subjects were confounded by this competing trend.

The comparisons between passing and failing subjects point to a clear and consistent pattern among nondepressed subjects. They attributed their failure to external factors, and their success to internal factors, to a significantly greater extent than did the depressed subjects. Since the depressed subjects. Since the attributional style for "normals" is opposite to that of depressives, this suggests that attributional processes may be involved in depression, and that depression may have cognitive source.

The results for the nondepressed subjects in the present study corroborate earlier findings (Arkin, Cooper & Kolditz, 1980; Bradley, 1978; Brehm, 1976; Fitch, 1970; Hastorf, Schreuder & Polefka, 1970; Luginbuhl, Crowe & Kahan, 1975; Sobel, 1974; Wortman, Constanzo & Witt, 1973; Zuckerman, 1979). The replication of this pattern is of theoretical interest as it lends support to what has often been referred to as the self-serving motivational bias in the attribution of causality.

As Hastorf, et. al. (1970) explained, "We are prone to alter our perception of causality so as to protect or enhance our self-esteem. We attribute success to our own dispositions and failure to external forces" (p. 73). More recently, Zuckerman (1979), in a comprehensive literature review of this area, concluded, "People attempt to enhance or protect their self-esteem by taking credit for success and denying responsibility for failure" (p. 245). It is assumed that internal attributions for success are self-enhancing, while external attributions for failure are self-protective. The findings of the present study are consistent with both components of the self-serving bias hypothesis.

This self-serving motivational bias in "normals" can be viewed as a base line to which the depressives' attributional style can be compared. This is consistent with the current trend in psychology to attempt to understand psychopathology by way of understanding what happens in "normals" (e.g., Kelly, 1964; Maslow, 1971).

According to Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1971), the emotional impact of a given event is dependent upon causal ascriptions on the internal-external dimension. When individuals attribute outcomes to internal factors, they experience maximal positive affect (e.g., pride) or maximal negative affect (e.g., shame). Ascribing the causes of an event to external factors, on the other hand, tends to minimize the emotional impact of the event. Empirical

evidence for this assumption comes from a wide body of research literature (Eswara, 1972; Feather, 1967; Lanzetta & Hannah, 1969; Nisbett & Schachter, 1966; Rest, Nierenberg, Weiner & Heckhausen, 1973; Ross, Rodin & Zimbardo, 1969; Schachter & Singer, 1962; Storms & Nisbett, 1970; Weiner & Kukla, 1970; Zander, Fuller & Armstrong, 1972). Such studies have tended to strongly support the hypothesis that internal ascriptions augment emotional responsiveness, while external attributions modulate or dampen affective reactions. The self-serving motivational bias, the, serves to increase positive and decrease negative affect by way of internal attributions for success and external attributions for failure.

The pattern exhibited by the depressed subjects, the depressives' attributional style, operates in the opposite fashion. After failure, depressed subjects' internal ascriptions maximize negative affect. After sucess, depressives' external ascriptions inhibit the experience of positive affect. Thus, depressives perceive the causes of success and failure in a way that can only serve to sustain their depression.

The results of the present study, then, suggest that a person's attributional style may play an important role in the maintenance and/or development of depression. The self-serving motivational bias may function as a regulator of self-esteem and, in this way, may represent an effective means of preventing depressive affect. The depressives either lack this coping mechanism, or utilize an ineffective, maladaptive attributional "strategy".

Additional findings of the study bear directly on this issue. Is the cognitive distortion in depression an omission of an effective prophylactic attitude or, rather, a more active "masochistic" process ? It can be seen from the analyses on effort and ability that non-depressed subjects varied to a greater extent than did the depressed subjects as a function of outcome on ratings of internal factors. Although the findings on task difficulty and luck are more ambiguous, in general, depressives were more consistent than nondepressives in their attributions across positive and negative outcomes. This finding occurred in both Kupier's (1978) and Rizley's (1978) experiments. The pattern suggests that, whereas "normals" are extremely situationally-dependent in their attributional style, depressives remain more rigid, and less attentive to environmental cues. The fact that, as a general rule, depressives are less situationally-dependent that nondepressives implies that it may simply be the absence of the self-serving motivational bias in depression that makes the depressives' attributional style depressogenic.

The consistency of depressives across success and failure as opposed to the greater self-serving bias of "normals" is consistent with other evidence. For example, a moderately elevated K score on the

Minnesota Multiphasic Personality Inventory (MMPI) is seen as evidence of good adjustment and ego strength, though the scale was originally devised as a measure of "defensiveness" (Dahlstrom, Welsh & Dahlstrom, 1972, 1975; Heilbrun, 1961). Together with findings of the present study, this suggests that a certain degree of naive self-deception or "defensiveness" may be a frequent component of mental health.

Alternatively, it may be that depressives are simply more sensitive or less self-deluding than "normals". Depression might develop when individuals attempt to do something about the inevitable negative feelings that "normals" don't bother to pay attention to. From this adaptational vantage point, depression is a reaction designed to increase the social support one receives from others (Klerman, 1974), and is maintained by its consequences (Coyne, 1976). Any factor rendering a person in need of such support could then contribute to depression, which is consistent with the wide diversity of depressive phenomena. Further, from this perspective, it would seem that separation and loss among humans would be particularly effective in producing depression, apart from Beck's, Seligman's, or even psychoanalytic explanations of why this is so (Blaney, 1977).

Additional findings of the present study serve to corroborate Beck's cognitive schema approach. For example, a substantial correlation between depression and self-esteem was found ($r = -.58$), replicating earlier findings by Beck (1970, 1974a), Battle (1978) and Moyal (1977). The reformulated learned helplessness model had suggested that, since only depressed people who make internal attributions for their helplessness suffer from low self-esteem, any correlation between self-esteem and depression would be substantially reduced by partialling out internality. However, the correlation between self-esteem and depression, with internality partialled out, remained significant and strong ($r = -.56$). This finding suggests that the relationship between depression and low self-esteem is not contingent upon one's cognitive style on the internal-external dimension. Rather, depression and low self-esteem tend to co-vary, regardless of locus of control, as Beck predicted. These results firm up the impression that low self-esteem, perhaps the fundamental component of Beck's model (Blaney, 1977), is central to depression.

An additional finding of the present study was that depressed subjects were significantly more pessimistic than nondepressed subjects on their degree-of-confidence for succeeding on the task. This result is also quite consistent with Beck's model, and replicates earlier findings (Beck, 1970; Loeb, Beck & Diggory, 1971; Loeb, Beck, Diggory & Tuthill, 1967; Loeb, Feshback, Beck & Wolf, 1964).

The results of the present study are clearly problematic for a straightforward interpretation of the reformulated learned helplessness model of depression. After years of optimism that depression could be explained by learned helplessness, gaps in the theory and negative experimental results gradually became apparent. In an effort to correct what they viewed as an oversimplified model, Abramson, Seligman and Teasdale (1978) took on the task of revising it. However, by converting it to an attributional model, with predictions opposed to those of the original model, one could easily question whether the reformulated model still deserves the name "learned helplessness."

Ay Costello (1978) cogently pointed out:

> Seligman's investigations of helplessness seem to have suffered because of his attempt to argue for the centrality of the helplessness experience in the etiology of depression. As a result, his experimental designs, experimental findings, and his discussions — for all their surface simplicity — are found on examination to be more complex and confusing than depression itself. (p. 31)

Seligman was probably correct in postulating a relationship between helplessness and depression. Depressed people may very well feel helpless. However, it is likely that he is confusing etiology with phenomenology, and that feelings of helplessness are a byproduct, not a cause, of depression. We would suggest that, if findings such as those of the present study hold up in future investigations, the reformulated learned helplessness model of depression be either re-reformulated or abandoned altogether.

Beck's model received a great deal of experimental support in the present study. It emphasizes the importance of cognitive factors in what has traditionally been viewed as an affective disorder. Yet, the extent to which the model has sufficiently explained depression is open to question. Given that the negative cognitive set produces depression, the question remains, what produces the negative cognitive set ? All that has been shown is that a negative cognitive set and low self-esteem exist in people who are already depressed. In this sense, the model remains descriptive, not explanatory. For example, additional research is needed to clarify whether the depressives' attributional style is a cause of depression, a result of depression, or both.

While the subjects designated as depressed scored in the clinically depressed range on the Beck Depression Inventory, further research with clinically depressed patients in psychiatric hospitals and clinics is, of course, highly desirable.

An additional caution is advised in that social and cultural factors may contribute to depressive phenomena. As Rizley (1978) cogently pointed out:

> Cognitive changes associated with depression most certainly reflect cultural and religious factors (e.g., Fernando, 1975); for example, the attribution of evaluatively negative events to internal factors may reflect a pattern of internalization and guilt associated with the Christian concept of original sin and self-blame (Teja, Narang & Aggarwal, 1971). The very limited external validity of these results must clearly be borne in mind. (p. 47)

Finally, it should also be pointed out that it has not as yet been demonstrated that the depressives' attributional style is specific to depression. What are the attributional styles (if any) of schizophrenics, or of anxiety neurotics, for example ? It may be that the lack of the self-serving motivational bias is an indicator of general maladjustment, and is not confined to depression per se.

ABSTRACT

Aaron Beck's "cognitive schema model" and Martin Seligman's "reformulated learned helplessness model" of depression were compared. Post-performance causal ascriptions for success and failure of 48 depressed and 48 nondepressed college students on an experimental number-prediction task, and the relationship between self-esteem and depression in the total sample of 262 subjects, were assessed. Results, indicated that depressed subjects attributed their failure to internal factors and their success to external factors to a significantly greater extent than did nondepressed subjects, as predicted by both models. Learned helplessness predictions regarding stable vs. unstable, global vs. specific and personal vs. universal conditions were not supported. Depressed subjects were found to be significantly more pessimistic than nondepressed subjects in their confidence for succeeding on the task. The correlation between self-esteem and depression was – .58 and was only reduced to – .56 by partialling out internality.

REFERENCES

ABRAMSON, L. Y., & SACKHEIM, H. A. (1977). A paradox in depression: Uncontrollability and self-blame. **Psychological Bulletin, 84,** 838-851.

ABRAMSON, I. Y., SELIGMAN, M. E. P., & TEASDALE, J. D. (1978). Learned helplessness in humans: Critique and reformulation. **Journal of Abnormal Psychology, 87,** 49 – 74.

AMERICAN PSYCHIATRIC ASSOCIATION. (1980) **Diagnostic and statistical manual of mental disorders** (3rd ed.). Washington: American Psychiatric Association.

AMERICAN PSYCHOLOGICAL ASSOCIATION. (1973). **Ethical principles in the conduct of research with human participants.** Washington: American Psychological Association.

ARKIN, R., COOPER, H., & KOLDITZ, T. (1980). A statistical review of the literature concerning the self-serving attribution bias in interpersonal influence situations. **Journal of Personality, 48,** 435 – 448.

BATTLE, J. (1978). Relationship between self-esteem and depression. **Psychological Reports, 42,** 745 – 746.

BECK, A. T. (1970). **Depression: Causes and treatment.** Philadelphia: University of Pennsylvania Press, (originally published as **Depression: Clinical, experimental, and theoretical aspects**). New York:

BECK, A. T. (1974). Depressive neurosis. In S. Arieti & E. B. Brody (Eds.), **American handbook of psychiatry** (2nd ed.). New York: Basic Books.

BLANEY, P. H. (1977). Contemporary theories of depression: Critique and comparison. **Journal of Abnormal Psychology, 86,** 103 – 223.

BRADLEY, G. W. (1978). Self-serving biases in the attribution process: A re-examination of the fact or fiction question. **Journal of Personality and Social Psychology, 36,** 56 – 71.

BREHM, S. S. (1976). **The Application of social psychology to clinical practice.** Washington: Hemisphere.

BUMBERRY, W., Oliver, J. M., & McClure, J. M. (1978). Validation of the Beck Depression Inventory in a university population using psychiatric estimate as the criterion. **Journal of Consulting and Clinical Psychology, 46,** 150 – 155.

COSTELLO, C. G. (1978). A critical review of Seligman's laboratory experiments on learned helplessness and depression in humans. **Journal of Abnormal Psychology, 87,** 21 – 31.

COYNE, J. C. (1976). Toward an interactional description of depression. **Psychiatry, 1976, 39,** 28 – 40.

CRANDALL, R. (1973). The measurement of self-esteem and related constructs. In J. P. Robinson & P. R. Shaver (Eds.), **Measures of social psychological attitudes.** Ann Arbor: Institute for Social Research.

DAHLSTROM, W. G., WELSH, G. S., & DAHLSTROM, L. E. (1972). **An MMPI handbook (Rev. ed.), Volumne I: Clinical interpretation.** Minneapolis: University of Minnesota Press.

DAHLSTROM, W. G., WELSH, G. S., & DAHLSTROM, L. E. (1975). **An MMPI handbook (Rev. ed.), Volume II: Research applications.** Minneapolis: University of Minnesota Press.

EAGLY, A. H. (1969). Sex differences in the relationship between self-esteem and susceptibility to social influence. **Journal of Personality, 37,** 581 – 591.

ESWARA, H. S. (1972). Administration of reward and punishment in relation to ability, effort, and performance. **Journal of Social Psychology, 87,** 139 – 140.

FEATHER, M. T. (1967). Valence of outcome and expectation of success in relation to task difficulty and perceived locus of control. **Journal of Personality and Social Psychology, 7,** 372 – 386.

FEATHER, N. T., & SIMON, J. G. (1971). Causal attributions for success and failure in relation to expectations of success based upon selective or manipulative control. **Journal of Personality, 39,** 527 – 542.

FERNANDO, S. J. M. (1975). A cross-cultural study of some familial and social factors in depressive illness. **British Journal of Psychiatry, 127,** 46 – 53.

FITCH, G. (1970). Effects of self-esteem, perceived performance and choice on causal attributions. **Journal of Personality and Social Psychology, 16,** 311 – 316.

HASTORF, A., SCHREUDER, D., & POLEFKA, J. (1970). **Person perception.** Reading, Massachusetts: Addison-Wesley.

HEILBRUN, A. B., Jr. (1961). The psychological significance of the MMPI K Scale in a normal population. **Journal of Consulting Psychology, 25,** 486 – 491.

HOVLAND, C., & JANIS, I. (Eds.) (1959). **Personality and persuasibility.** New Haven: Yale University Press.

KELLY, G. A. (1964). The language of hypothesis: Man's psychological instrument. **Journal of Individual Psychology, 20,** 137 – 152.

KLEIN, D. C., FENCIL-MORSE, E., & SELIGMAN, M. E. P. (1976). Learned helplessness, depression, and the attribution of failure. **Journal of Personality and Social Psychology, 33,** 508 – 516.

KLERMAN, G. L. (1974). Depression and adaptation. In R. J. Friedman & M. M. Katz (Eds.), **The psychology of depression: Contemporary theory and research** Washington: Winston-Wiley.

KUPIER, M. A. (1978). Depression and causal attributions for success and failure. **Journal of Personality and Social Psychology, 36,** 236 – 246.

LANZETTA, J. T., & HANNAH, T. E. (1969). Reinforcing behavior of "naive" trainers. **Journal of Personality and Social Psychology, 11,** 245 – 252.

LOEB, A., Beck, A. T., & DIGGORY, J. C. (1971). Differential effects of success and failure on depressed and nondepressed patients. **Journal of Nervous and Mental Disease, 152,** 106 – 114.

LOEB, A., BECK, A. T., DIGGORY, J. C., & TUTHILL, R. (1967). Expectancy, level of aspiration, performance, and self-evaluation in depression. **Proceedings of the Annual Convention of the American Psychological Association, 2,** 193 – 194.

LOEB, A., FESHBACK, S., BECK, A., & WOLF, A. (1964). Some effects of reward on the social perception and motivation of psychiatric patients varying in depression. **Journal of Abnormal Psychology, 68,** 609 – 616.

LUGINBUHL, J. E. R., CROWE H. D., & KAHAN, J. P. (1975). Causal attributions for success and failure. **Journal of Personality and Social Psychology, 31,** 86 – 93.

MASLOW, A. H. (1971). **The Farther reaches of human nature.** New York: Viking Press.

MILLER, W. R., & SELIGMAN, M. E. P. (1973). Depression and the perception of reinforcement. **Journal of abnormal Psychology, 82,** 62 – 73.

MILLER, W. R., & SELIGMAN, M. E. P. (1975). Depression and learned helplessness in man. **Journal of Abnormal Psychology, 84,** 228 – 238.

MILLER, W. R., SELIGMAN, M. E. P., & KURLANDER, H. (1975). Learned helplessness, depression and anxiety. **Journal of Nervous and Mental Disease, 161,** 347 – 357.

MOYAL, B. (1977). Locus of control, self-esteem, stimulus appraisal and depressive systems in children. **Journal of Consulting and Clinical Psychology, 45,** 951 – 952.

NISBETT, R. E., & SCHACHTER, S. (1966). Cognitive manipulation of pain. **Journal of Experimental Social Psychology, 2,** 227 – 236.

REST, S., NIERENBERG, R., WEINER, B., & HECKHAUSEN, H. (1973). Further evidence concerning the effects of perceptions of effort and ability on achievement evaluation. **Journal of Personality and Social Psychology, 28,** 187 – 191.

RIZLEY, R. (1978). Depression and distortion in the attribution of causality. **Journal of Abnormal Psychology, 87,** 32 – 48.

ROSS, L., RODIN, J., & ZIMBARDO, P. G. (1969). Toward an attribution therapy: The reduction of fear through induced cognitive-emotional misattribution. **Journal of Personality and Social Psychology, 12,** 279 – 288.

ROTTER, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. **Psychological Monographs, 80,** (1, Whole, Nº 609).

ROTTER, J. B., LIVERANT, S., & CROWNE, D. P. (1961). The growth and extinction of expectancies in chance controlled and skill tasks. **Journal of Psychology, 52,** 161 – 177.

SCHACHTER, S., & SINGER, J. E. (1962). Cognitive, social and physiological determinants of emotional state. **Psychological Review, 69,** 379 – 399.

SCHWAB, J. J., BROWN, J. M., HOLZER, C. E., & SOKOLOF, M. **(1968). Current concepts of depression: The sociocultural. International Journal of Social Psychiatry, 14,** 226 – 234.

SELIGMAN, M.E. P. (1975). **Helplessness.** San Francisco: Freeman.

SELIGMAN, M. E. P., KLEIN, D. C., & MILLER, W. R. (1975). Depression. In H. Leitenberg (Ed.), **Handbook of behavior modification and behavior therapy.** Englewood Cliffs, New Jersey: Prentice-Hall.

SILVERMAN, C. (1968). The epidemiology of depression: A review. **American Journal of Psychiatry, 124,** 883 – 891.

SOBEL, R. S. (1974). Effects of success, failure and locus of control on postperformance attributions of causality. **Journal of General Psychiatry, 91,** 29 – 34.

STORMS, M. D., & NISBETT, R. E. (1970). Insomnia and the attribution process. **Journal of Personality and Social Psychology, 16,** 319 – 328.

TEJA, J. S., NARANG, R. L., & AGGARWAL, A. K. (1971). Depression across cultures. **British Journal of Psychiatry, 119,** 253 – 160.

WEINER, B., FRIEZE, I., KUKLA, A., REED, L., REST, S.A., & ROSENBAUM, R. M. (1971). **Perceiving the causes of success and failure.** New York: General Learning Press.

WEINER, B., & KUKLA, A. (1970). An attributional analysis of achievement motivation. **Journal of Personality and Social Psychology, 15,** 1 – 20.

WORTMAN, C. B., COSTANZO, I., & WITT, T. (1973). Effect of anticipated performance on the attribution of causality to self and others. **Journal of Personality and Social Psychology, 27,** 372 – 281.

ZANDER, A., FULLER, R., & ARMSTRONG, W. (1972). Attributed pride or shame in group and self. **Journal of Personality and Social Psychology, 23,** 346 – 352.

ZUCKERMAN, M. (1979). Attribution of success and failure revisited, or: The motivational bias is alive and well in attribution theory. **Journal of Personality, 47,** 245 – 287.

AUTHOR NOTES

This article is based on the first author's Ph. D. dissertation in clinical psychology at St. John's University, conducted under the direction of the second author. Both authors would like to thank Frank Patalano and John B. Murray for their assistance.

Requests for reprints should be addressed to Jefferson M. Fish, Department of Psychology, St. John's University, Jamaica, N. Y. 11439.