

## Attributional Styles and Life Events in the Classroom: Vulnerability and Invulnerability to Depressive Mood Reactions

Gerald I. Metalsky and Lyn Y. Abramson  
University of Wisconsin—Madison

Martin E. P. Seligman and Amy Semmel  
University of Pennsylvania

Christopher Peterson  
Virginia Polytechnic Institute and State University

A core prediction of the reformulated model of learned helplessness and depression (Abramson, Seligman, & Teasdale, 1978) is that when confronted with the same negative life event, people who display a generalized tendency to attribute negative outcomes to internal, stable, or global factors should be more likely to experience a depressive mood reaction than people who typically attribute negative outcomes to external, unstable, or specific factors. We tested this prediction with a prospective design in a naturalistic setting by determining whether the content of college students' attributional styles at one point in time predicted the severity of their depressive mood response to receiving a low grade on a midterm exam at a subsequent point in time. Consistent with the prediction, students with an internal or global attributional style for negative outcomes at Time 1 experienced a depressive mood response when confronted with a subsequent low midterm grade, whereas students with an external or specific attributional style for negative outcomes were invulnerable to this depressive mood response. In contrast to the results for the internality and globality dimensions, students' scores along the stability attribution dimension were not correlated with the severity of their depressive mood response to the low midterm grade. In the absence of a negative life event (i.e., receipt of a high midterm grade), students' generalized tendencies to make internal or global attributions for negative outcomes at Time 1 were not significantly correlated with their subsequent changes in depressive mood although there was a nonsignificant positive correlation between severity of depressive mood response and the tendency to make global attributions for negative outcomes at Time 1.

In a reformulated model of learned helplessness and depression, Abramson, Selig-

man, and Teasdale (1978) speculated that individual differences exist in attributional styles and hypothesized that certain attributional styles are vulnerability factors for depressive reactions. In our view, this aspect of Abramson et al.'s reformulation is best characterized as a *diathesis-stress* model in which the style to attribute negative outcomes to internal, stable, or global factors is a "diathesis" for depressive reactions, and negative life events are a "stress" for depressive reactions. That is, when confronted with the same negative life event, people who display a generalized tendency to attribute negative outcomes to internal, stable, or global factors should be more likely to experi-

The investigation reported in this article was supported by U.S. Public Health Service Biomedical Research Grant 5 507 RR 07067-13 and a research support grant from the University of Wisconsin to Lyn Y. Abramson.

The present investigation was conducted as a part of a masters thesis submitted by G. I. Metalsky to the State University of New York at Stony Brook, Department of Psychology. Thanks go to John M. Neale, who served as the second reader, and to Arthur Stone and Carl von Baeyer for their help in conducting the data analyses.

Requests for reprints should be sent to Lyn Y. Abramson, Department of Psychology, University of Wisconsin, W. J. Brogden Psychology Building, 1202 West Johnson Street, Madison, Wisconsin 53706.

ence a depressive reaction than people who typically attribute negative outcomes to external, unstable, or specific factors. Moreover, the logic of the reformulation suggests that in the presence of positive life events or in the absence of negative life events, people exhibiting the hypothesized depressogenic attributional styles should be no more likely to develop depressive reactions than people not displaying these attributional styles.

It is important to emphasize that Abramson et al.'s (1978) diathesis-stress model is a statement of a contributory, but not a necessary, condition for the development of a depressive reaction. People may become depressed for reasons other than those specified by the model (e.g., norepinephrine depletion). However, according to the model, when the specified attributional diathesis is coupled with a negative life stressor, the likelihood of depressive reactions should increase. Finally, it is important to recognize that Abramson et al.'s attribution model of depression is a personality theory as well as a clinical theory. Its predictions apply to the development of transient depressive affect in response to negative daily life events as well as to the development of the clinical syndrome of depression in response to major or cumulative life stressors.

The foregoing discussion suggests that a complete test of Abramson et al.'s (1978) diathesis-stress model requires a prospective assessment of attributional styles, life events, and depressive reactions to these life events. To date, only one study has approached such an evaluation. Improving upon the methodology used in previous cross-sectional studies of attributional style and depression (Blaney, Behar, & Head, 1980; Seligman, Abramson, Semmel, & von Baeyer, 1979), Golin, Sweeney, and Shaeffer (1981) used a cross-lagged panel correlational procedure and found results suggesting that stable and global attributional styles for negative outcomes are a cause rather than a consequence of enduring depressive symptoms. However, like the earlier cross-sectional studies, the Golin et al. study did not include assessment of depressive reactions to negative life events and therefore did not test Abramson et al.'s diathesis-stress model.

In the present study we provided a more definitive test of Abramson et al.'s hypothesis about attributional styles and susceptibility to transient depressive affect. We used a prospective, quasi-experimental design (Campbell & Stanley, 1963) in a naturalistic setting (the classroom). In line with the reformulated model, we predicted that students showing a generalized tendency to attribute negative outcomes to internal, stable, or global factors would be more likely to develop a depressed mood upon learning that they received a low grade on a class midterm examination than would students tending to attribute negative outcomes to external, unstable, or specific factors but who also received the low grade on the midterm exam. However, we predicted that upon receipt of a high midterm grade, students exhibiting the hypothesized depressogenic attributional styles should be no more likely to develop a depressive mood reaction than students not displaying these attributional styles.

## Method

### *Subjects*

Two hundred twenty-seven undergraduates in an introductory psychology course at the State University of New York at Stony Brook participated in the study.

### *Materials*

The Attributional Style Questionnaire (ASQ; Seligman, Abramson, Semmel, & von Baeyer, 1979) was used to measure subjects' tendencies to attribute negative and positive outcomes to internal (vs. external), stable (vs. unstable), and global (vs. specific) factors. High scores on the three attributional style subscales for negative outcomes reflect high ratings of internality, stability, and globality. The ASQ is capable of predicting enduring depressive symptoms at one point in time (Blaney et al., 1980; Seligman et al., 1979) and at a 1-month lag (Golin et al., 1981) when life events are not considered (see Peterson et al., in press, for a discussion of the psychometric properties of the ASQ).

The Multiple Affect Adjective Check List, Today Form (MAACL; Zuckerman & Lubin, 1965) was selected for assessing subjects' transient levels of depressive mood. The MAACL is self-administered, relatively short, relatively well validated (Zuckerman & Lubin, 1965), and has been shown to be sensitive to changes in affect that occur in response to ongoing negative events in laboratory studies of learned helplessness and depression (e.g., Gatchel, Paulus, & Maples, 1975; Miller & Seligman, 1975).

Table 1  
*Correlations of Attributional Style Subscales  
 for Negative Outcomes with Standardized  
 Residual Changes in Multiple Affect  
 Adjective Checklist Depression*

Attributional subscale	Standardized Residual Change			
	High grade students ( <i>n</i> = 28)		Low grade students ( <i>n</i> = 53)	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Internality	.12	<i>ns</i>	.34	.01
Stability	.36	.06	.04	<i>ns</i>
Globality	.22	<i>ns</i>	.32	.05

Although the Beck Depression Inventory (BDI; Beck, 1967) has been used in previous studies of attributional style and depression that did not include assessment of affective responses to negative life events (e.g., Blaney et al., 1980; Golin et al., 1981; Seligman et al., 1979), this inventory was not appropriate for use in our study because it measures more enduring symptoms of the syndrome of depression rather than the instantaneous levels of depressive affect that we needed to assess in order to test our hypothesis. Indeed, from a methodological standpoint, we could not use the BDI validly in our study because many of the questions on this inventory require subjects to report on changes in psychological functioning that occur over relatively long periods of time rather than immediately, as required by our experimental design (e.g., I have lost more than 15 pounds; I wake up early every day and can't get more than 5 hours sleep; I don't enjoy things the way I used to).

A questionnaire constructed for this study was used to measure the students' aspirations for their performance on the class midterm because we felt that it would be more appropriate to define a high or low midterm grade according to the students' standards rather than by an experimenter-defined standard. Students were asked to report separately the grades with which they would be happy and unhappy. For each item, subjects circled 1 of 13 possible grades (F, D-, D, D+, C-, etc.). Responses were transformed to a 13-point scale (F = 1, A+ = 13).

### Procedure

All questionnaires were completed during class time. At Time 1 (February 18, 1980), prior to taking their midterm exam, students' attributional styles and aspirations for their midterm grade were assessed. Students' levels of transient depressive mood were assessed prior to the receipt of the midterm grade (Time 2; February 29, 1980) and again just following the receipt of the midterm grade (Time 3; March 5, 1980).

### Results

Subjects were considered to be "low grade students" if their actual midterm grade ( $M = 5.62$ ; between a C and C-) was less than or equal to the grade with which they previously had indicated they would be unhappy ( $M = 8.05$ ; approximately a B-).<sup>1</sup> "High grade students" received a midterm grade ( $M = 11.42$ ; between an A and A-) that was greater than or equal to the grade with which they previously had indicated they would be happy ( $M = 11.08$ ; approximately an A-).

To test our prediction, we computed standardized residual gain scores from Time 2 to Time 3 on the MAACL depression index for low grade and high grade students. Residual gain scores reflect the deviation of final scores from the regression line of final scores on initial scores. Manning and DuBois (1962) recommended the use of residual gain scores over crude gain indices (i.e., simple change) particularly in situations like the present one in which change is predicted from characteristics of the subject. In these situations, residual gain scores are more reliable and less likely to yield spurious effects (Manning & DuBois, 1962).

As can be seen in Table 1, correlational analysis supported the experimental hypothesis for the internality and globality subscales but not for the stability subscale. The internality and globality attributional style subscales for negative outcomes correlated significantly with standardized residual changes in MAACL depression for low grade students,  $r(51) = .34, p < .01$ , for internality, and  $r(51) = .32, p < .05$ , for globality, but not for high grade students (see Table 1). It is important to note that the correlation between the globality attributional style subscale and standardized residual changes in depressed mood for high grade students was positive but would not have attained statistical significance even if the sample size for high grade students had been as large as it was for low grade students.

To more fully understand the nature of the significant correlations and the direction

<sup>1</sup> All statistical tests are two-tailed.

and magnitude of depressive mood responses, we computed simple change indices for low grade students. Low grade students exhibiting an extreme bias towards making internal attributions for negative outcomes (internality  $\geq 4.83$ , upper quartile) became more depressed in mood ( $M = 4.47$ ) upon receipt of a low midterm grade. In contrast, low grade students exhibiting an extreme bias towards making external attributions for negative outcomes (internality  $\leq 3.83$ , lower quartile) were invulnerable to this depressive mood response ( $M = -1.50$ ) upon receipt of the same low midterm grade. Similarly, low grade students extremely biased towards making global attributions for negative outcomes (globality  $\geq 5.00$ , upper quartile) became more depressed in mood ( $M = 4.20$ ), whereas students displaying an extreme bias towards making specific attributions for negative outcomes (globality  $\leq 3.50$ , lower quartile) were invulnerable to this depressive mood response ( $M = -.08$ ) upon receipt of the same low midterm grade.

#### *Midterm Grade, Aspirations, and Level of Enduring Depression*

Correlational analysis suggested that low grade students who were more internal or global in their attributional styles for negative outcomes did not become more depressed in mood because they received lower midterm grades or because they held higher aspirations than low grade students who were more external or specific in their attributional styles for negative outcomes. For low grade students, the internality and globality attributional style subscales for negative outcomes did not correlate with the actual midterm grade these students received,  $r(51) = .08$ ,  $p > .10$ , for internality, and  $r(51) = -.001$ ,  $p > .10$ , for globality or with the grade with which these students reported they would be unhappy,  $r(51) = -.10$ ,  $p > .10$ , for internality, and  $r(51) = .03$ ,  $p > .10$ , for globality. Because previous investigators (e.g., Blaney et al., 1980; Seligman et al., 1979) have reported that students' levels of more enduring depressive symptoms as measured by the BDI correlated with their scores on the ASQ,<sup>2</sup> it is

important to note that low grade students' scores on the BDI at Time 1 in our study did not correlate significantly with their standardized residual changes in MAACL depression,  $r(49) = .13$ ,  $p > .10$ , when they received their low midterm grades.

#### Discussion

The major finding of this prospective study is that the more internal or global students' attributional styles for negative outcomes were at Time 1, the more severe their depressive mood reactions to the subsequent occurrence of a negative life event (i.e., receipt of a low midterm grade). It is noteworthy that students who were extremely external or specific in their attributional styles for negative outcomes at Time 1 actually were invulnerable to depressive mood reactions upon receipt of the low midterm grade. Because we used a prospective design, these results may have practical implications for identifying individuals at "high risk" for depressive mood reactions to negative life events. In the absence of a negative life event (i.e., receipt of a high midterm grade), students' generalized tendencies to make internal or global attributions for negative outcomes as measured at Time 1 were not significantly correlated with their subsequent changes in depressive mood although there was a nonsignificant positive correlation between severity of depressive mood response and the tendency to make global attributions for negative outcomes at Time 1. Although this pattern of results was consistent with Abramson et al.'s (1978) diathesis-stress model, the results for the stability dimension of attributional style were not.<sup>3</sup> An impor-

<sup>2</sup> In the present study at Time 1 we replicated these ASQ-BDI correlations for the negative outcome attributional dimensions of stability,  $r(225) = .24$ ,  $p < .001$ , and globality,  $r(225) = .19$ ,  $p < .01$ , but not for internality,  $r(225) = .08$ ,  $p > .10$ .

<sup>3</sup> Because the present results are the first to suggest that attributional styles actually predict depressive mood reactions to negative life events outside of the laboratory, it is important to consider the question of replication. Prior to conducting the present study, we completed an initial full-scale feasibility study with a comparable sample size and obtained results very similar to the present findings for the internality and stability attributional style subscales for negative outcomes

tant question for future research is whether or not Abramson et al.'s predictions also apply to the development of the clinical syndrome of depression when people are confronted with major or cumulative life stressors.

At this point it is useful to compare the results obtained in the various studies of attributional style and depression conducted to date. Although the majority of published studies (e.g., Blaney et al., 1980; Golin et al., 1981; Gong-Guy & Hammen, 1980; Seligman et al., 1979; but see Hammen & Cochran, 1981 for an exception) have indicated that one or more of the dimensions of attributional style discussed by Abramson et al. (i.e., internality, stability, and globality) are significantly associated with the severity of depressive symptoms, some discrepancies in results exist across studies. For

example, Seligman et al. used a cross-sectional method and found significant correlations between all three attributional dimensions and severity of depressive symptoms, whereas Blaney et al. used the same cross-sectional method but found that only the dimensions of stability and globality were significantly correlated with severity of depressive symptoms. In their cross-lagged panel design, Golin et al. found results consistent with the hypothesis that the tendency to make stable or global, but not internal, attributions for negative outcomes causes depressive symptoms. In contrast, the results of the present prospective study suggested that people who show a tendency to make internal or global, but not stable, attributions for negative outcomes are most susceptible to depressive mood reactions when confronted with a negative life event.

We suggest that one factor probably contributing to these discrepancies across studies is investigators' failure to examine the joint influence of attributional style and situational factors in predicting depression. In contrast to the present study, the majority of published studies have focused solely on attributional style in predicting depression. Investigators' exclusive focus on attributional style independent of situational parameters is puzzling particularly given that Abramson et al.'s diathesis-stress model predicts that people displaying the hypothesized depressogenic attributional styles should be no more likely to develop depressive reactions in the absence of negative life events than people not exhibiting these styles. Along these lines, Hammen (Note 1) has argued that a major flaw in research on attribution and depression is insufficient attention to contextual parameters. Future research in this area must specify how people's attributional styles interact with features of the situation and perceptions of these features in determining affective responses (see Metalsky & Abramson, 1981).

---

but not for the globality subscale. For low grade students in the feasibility study, correlations between attributional style for negative outcomes and standardized residual changes in MAACL depression were  $r(48) = .27$ ,  $p < .05$ , for internality;  $r(48) = .14$ ,  $p > .10$ , for stability; and  $r(48) = -.07$ ,  $p > .10$ , for globality. Also, similar to the findings in the present study, low grade students who were extreme internalizers became more depressed in mood ( $M = 5.45$ ), whereas extreme externalizers were relatively invulnerable to increases in depressed mood ( $M = 1.19$ ) upon receipt of the same low midterm grade. We believe that the discrepancy for the globality dimension may be due to a difference in the nature of the midterm exam given in the two studies. The midterm exam given in the feasibility study was atypical in that it not only required students to recall material from their text and lectures but also required them to integrate this material in a sophisticated and original way. The unusual nature of the exam in the feasibility study may have led students with a global attributional style for negative outcomes to conclude that their low grades on this exam were due to a specific factor (i.e., the atypical test). That is, the available situational information about the exam itself may have mitigated the impact of the global attributional style (see Metalsky & Abramson, 1981). On the basis of this reasoning, we conducted the present study in a way that was identical to the feasibility study in all aspects except one. The midterm exam given in the present study was constructed explicitly to be more typical of midterm exams so that available situational information would not overwhelm students' generalized attributional style. The fact that students with more global attributional styles for negative outcomes made more global attributions for their low midterm grades in the present study,  $r(51) = .46$ ,  $p < .005$ , but not in the feasibility study,  $r(48) = .07$ ,  $p > .10$ , is consistent with this general line of reasoning.

#### Reference Note

1. Hammen, C. L. *Issues in cognitive research on depression: Attributional models*. Paper presented at the meeting of the American Psychological Association, Los Angeles, 1981.

## References

- Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 1978, 87, 49-74.
- Beck, A. T. *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row, 1967.
- Blaney, P. H., Behar, V., & Head, R. Two measures of depressive cognitions: Their association with depression and with each other. *Journal of Abnormal Psychology*, 1980, 89, 678-682.
- Campbell, D. T., & Stanley, J. C. Experimental and quasi-experimental design for research on teaching. In N. L. Gage (Ed.), *Handbook of research on teaching*. Chicago: Rand McNally, 1963.
- Gatchel, R. J., Paulus, P. B., & Maples, C. W. Learned helplessness and self-reported affect. *Journal of Abnormal Psychology*, 1975, 84, 732-734.
- Golin, S., Sweeney, P. D., & Shaeffer, D. E. The causality of causal attributions in depression. A cross-lagged panel correlational analysis. *Journal of Abnormal Psychology*, 1981, 90, 14-22.
- Gong-Guy, E., & Hammen, C. Causal perceptions of stressful events in depressed and nondepressed outpatients. *Journal of Abnormal Psychology*, 1980, 89, 662-669.
- Hammen, C. L., & Cochran, S. D. Cognitive correlates of life stress and depression in college students. *Journal of Abnormal Psychology*, 1981, 90, 23-27.
- Manning, W. H., & DuBois, P. H. Correlational methods in research on human learning. *Perceptual and Motor Skills*, 1962, 15, 287-321.
- Metalsky, G. I., & Abramson, L. Y. Attributional styles: Toward a framework for conceptualization and assessment. In P. C. Kendall & S. D. Hollon (Eds.), *Cognitive-behavioral interventions: Assessment methods*. New York: Academic Press, 1981.
- Miller, W. R., & Seligman, M. E. P. Depression and learned helplessness in man. *Journal of Abnormal Psychology*, 1975, 84, 228-238.
- Peterson, C., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. The Attributional Style Questionnaire. *Cognitive Therapy and Research*, in press.
- Seligman, M. E. P., Abramson, L. Y., Semmel, A., & von Baeyer, C. Depressive attributional style. *Journal of Abnormal Psychology*, 1979, 88, 242-247.
- Zuckerman, M., & Lubin, B. *Manual for the Multiple Affect Adjective Check List*. San Diego, Calif.: Educational and Industrial Testing Service, 1965.

Received September 25, 1981 ■