Journal of Educational Psychology
1981, Vol. 73, No. 3, 393-403

0022-0663/81/7303-0393$00.75

Attributions, Affect, and Expectations: A Test of Weiner's Three-Dimensional Model

Donelson R. Forsyth and James H. McMillan
Virginia Commonwealth University

In a test of predictions derived from Weiner's reformulated three-dimensional model of attributions, college students who had performed well or poorly on an examination reported the locus, stability, and controllability of the causes of their performance, their affective reactions, and their expectations. As is consistent with Weiner's model, more positive affective reactions were reported by students who (a) felt they controlled the causes of their performance, (b) attributed success to internal factors or failure to external factors, and (c) attributed their outcomes to factors that were stable, controllable, and internal. Expectations, however, were related more to perceived locus of cause and controllability than to stability. The implications of attributions and perceived control in educational settings are discussed in relation to learned helplessness, expectations, and reactions to failure.

Weiner's approach to classroom motivation and experience (Weiner, 1972, 1979, 1980) emphasizes the importance of causal attributions in explaining the consequences of academic failure and success. According to this perspective, achievement striving, affective reactions, and expectations concerning future outcomes are determined, in part, by students' attributional conclusions concerning their classroom experiences. Following performance on an academic task, students react affectively in a generally positive or negative manner, formulate causal attributions to explain their performance, and then experience further affect and expectancy changes dependent on the nature of these attributions. Although a substantial amount of laboratory research suggests such linkages exist (Weiner, 1979), relatively few studies have examined Weiner's three-dimensional model in the context of actual academic tasks. The present study examined Weiner's proposed model of educational attributions by assessing the relationship between the attributions, affect, and expectations of college students following a course examination.

Thanks are extended to Bernard Weiner, Irene Frieze, and several anonymous reviewers for their comments on an earlier draft of this article.

Requests for reprints should be sent to Donelson R. Forsyth, Department of Psychology, Virginia Commonwealth University, 810 West Franklin Street, Richmond, Virginia 23284.

Dimensions of Attributions

In describing the nature of attributions that are relevant to educational settings, Weiner (1979) has advanced a three-dimensional typology of attributions. The first of the three dimensions, *locus of causality*, was first introduced by Heider (1958), who suggested that the attributions people offer as explanations for behaviors and events emphasize factors that originate within the person or arise from environmental sources. As examples of possible causal factors, Heider mentioned ability, effort, task difficulty, and luck and pointed out that the first two causes are internal factors, whereas the second two causes are external factors. Weiner, Russell, and Lerman (1978, 1979) later found that the locus of causality dimension is closely related to affective reactions that follow test feedback. Individuals who attribute their success to external factors report feelings of gratitude, surprise, and thankfulness, whereas those who emphasize internal factors report pride, confidence, and satisfaction. Failing students, on the other hand, experience guilt, regret, and aimlessness when they blame themselves, and anger, surprise, and hostility when they externalize their failure.

Just as luck is an external factor and ability is an internal one, luck also fluctuates more than ability, suggesting that a second

dimension—*stability of causes*—should be considered when describing attributions (e.g., Frieze & Weiner, 1971; Weiner, 1972; Weiner et al., 1971). Although Heider did not emphasize the stability dimension as much as the locus of cause dimension, subsequent studies of changes in expectations after success and failure indicated that the expectancy shifts which follow feedback are closely linked to stability (e.g., Feather & Simon, 1971; McMahan, 1973; Weiner et al., 1971). For example, in one study (Weiner, Nierenberg, & Goldstein, 1976) subjects who believed they had done well on a task were asked to report their expectations concerning future performances as well as estimate the cause of their success. Although positive increases in expectations were not related to the locus of the cause, expectancy increments were associated with the perceived stability of the causal factor. When subjects attributed their success to such factors as ability or the nature of the task, their expectations for success increased, whereas subjects who attributed their success to luck or effort reported less positive expectancies.

Research conducted within the framework of self-worth theory (Covington & Beery, 1976; Covington & Omelich, 1979) lends further support to the link between self-worth and internal–external/stable–unstable attributions. According to this perspective, failure is more likely to lead to shame, depressed expectations, and lowered self-worth when it is ability linked rather than effort linked. For example, in one study conducted in a classroom setting, Covington and Omelich found that shame was correlated with both effort and ability attributions after a failing performance. When the students could ascribe their failure to low effort, they were insulated from the esteem-damaging consequences of the failure and hence reported less shame. If, however, they felt their failure had been caused by low ability, they reported greater levels of personal shame. These researchers concluded that reactions to personal performance may be influenced by attributions concerning causes and add that these causal judgments may be more self-protective than strictly rational.

The Third Dimension: Controllability

Weiner's original model of attribution considers locus and stability to be the two major dimensions underlying attributions, but the logical distinction between such causes as mood and effort soon necessitated a revision; although mood and effort are both internal/unstable causes, mood is considerably less controllable than effort. In order to incorporate this difference in his analysis of attributions, Weiner has recently proposed that controllability is the third dimension of attributions (Weiner, 1979, 1980).

Although Weiner based his decision to include the controllability dimension on purely logical grounds, research in a wide variety of areas suggests that controllability dramatically influences reactions to outcomes. A host of concepts emphasize the importance of personal control (deCharms, 1968; Forsyth, 1980; White, 1959), and relevant research indicates that loss of control is associated with depression (Seligman, 1975), motivational deficits (Weiner, 1979), deterioration of physical health (Rodin & Langer, 1977), inadequate coping following a severe accident (Bulman & Wortman, 1977), and stress-related illnesses (Glass, 1977). Indeed, both Wortman (1976; Wortman & Dintzer, 1978) and Seligman (1975; Abramson, Seligman, & Teasdale, 1978) emphasize controllability in their theories of learned helplessness.

Postulating a third dimension, however, necessitates the reinterpretation of earlier findings. Although previous research attested to the importance of locus of causality and stability, these dimensions may have been confounded with control. To provide several examples: Dweck (1975) found that helpless children trained to attribute math performance to effort subsequently improved their performance, but was this effect obtained because effort is unstable or because effort is controllable? Similarly, Covington & Omelich (1979) report that effort attributions after failure are linked with decreases in shame, but does this relationship stem from the instability of effort or the controllability of effort? Lastly, Weiner, Russell, and Lerman (1978) found that fol-

lowing failure, ability attributions elicited feelings of incompetence, whereas effort attributions elicited feelings of shame, but is this difference due to the fact that ability is a stable cause and effort is an unstable cause or the controllability of effort and the uncontrollability of ability? Clearly all three dimensions must be investigated simultaneously and unambiguously if the relationship between attributions, expectations, and affect is to be adequately understood.

The Current Investigation

In the present study students in a college course who had just learned they had done well or done poorly on a major examination were asked to evaluate the cause of the outcome, describe their affective reactions, and estimate their expectations about future test performances. The manner in which the variables of interest were assessed and the subsequent analyses performed on these variables were guided by (a) the need to accurately and unambiguously measure all three dimensions that Weiner incorporates in his attributional model and (b) predictions of interactions between the three attributional dimensions and outcome.

Measurement method. Attributions were assessed by focusing on causal dimensions, rather than unitary causes, to circumvent several problems inherent in the unitary cause assessment procedure. As previous researchers have noted (e.g., Elig & Frieze, 1979; Abramson, Seligman, & Teasdale, 1978), procedures that assess attributional processes by asking respondents to rate the causal importance of specific causes (e.g., luck, ability) possess two limitations. First, subjects' responses are limited to those causes the researcher anticipates and includes on the assessment questionnaire. The bulk of the research utilizes the four-cause list—ability, effort, task difficulty, and luck—but other causes (e.g., mood, study habits, the moon, astrological birthsign) that respondents feel are important factors may be left unassessed. Second, the link between a specific cause and the conceptual attributional dimension is sometimes unclear. Although most of the theoretical emphasis is on dimensions of attributions rather than specific causes (Weiner, 1979), using specific cause ratings to make inferences about dimensions is problematic, since causes can fall at varying intervals along the dimensional continua, depending on the situation and the respondents' attributional perspectives. Effort, for example, is perceived to be a stable factor when it refers to the typical level of motivation of the individual but at other times can be transient when it refers to energy expended in seeking success on a particular task (Covington, Spratt, & Omelich, 1980; Elig & Frieze, 1975; Ostrove, 1978). Thus, when a respondent reports an attribution to effort, the researcher cannot be sure that a stable or unstable causal factor is being emphasized.

To circumvent the methodological difficulties with unitary cause scales, the current investigation assessed attributional dimensions using a technique developed by Seligman, Abramson, Semmel, and von Baeyer (1979). In this technique, individuals rate the influence of causes in terms of the conceptual dimensions themselves. For example, rather than assuming that an attribution to ability reflects an emphasis on internal rather than external factors, these researchers ask participants to indicate the extent to which an outcome was caused by "something about you or something about other people or circumstances" (Seligman et al., 1979, p. 243). Initial findings indicate that the dimensional bipolar scales are accurate measures of conceptually meaningful dimensions and yield results that are comparable to those of other assessment techniques (Seligman et al., 1979; Weiner, 1980). Furthermore, multidimensional scaling and factor analytic studies of the actual dimensions underlying unitary causal judgments show that bipolar dimensional ratings are highly correlated with the cognitive dimensions that actually underlie respondents' unitary cause judgments (Meyer, 1980; Passer, Kelley, & Michela, 1978).

Predictions. Given the persistent findings in many areas attesting to the dramatic impact of perceived control, it was hypothesized that people who attributed their outcome to controllable factors would experience more positive affective reactions

than individuals who feel they cannot control the causes of their performance. In addition, although successful students should feel better—in terms of affect—than failing students (e.g., Bailey, Helm, & Gladstone, 1975; McMillan & Sprat, Note 1), the locus of attributed cause should moderate the magnitude of this effect. After success, internal attributions should be associated with more positive affective reactions, whereas negative affective reactions should be related to internal attributions for failure.

Predictions concerning expectancy shifts are less clear-cut. Although such shifts are typically associated with the stability dimension, the more recently suggested controllability factor may again be the more influential factor. The student who fails a test and believes the cause lies in some external, unstable factor—such as the teacher's bad mood—may continue to expect failure because mood, though unstable, is difficult to control. Yet, if students think they can somehow control their teacher's mood, then expectations may become more positive; in other words, the stability of attributed cause is less important when compared to the controllability of the attributed cause. Therefore, all three variables—controllability, performance, and locus of causality—will, in an interactive fashion, be related to expectations. After failure, individuals who attribute their outcomes to external, uncontrollable factors should be the most negative in their expectations. Those who succeed and believe internal, controllable factors were the cause of their success should, in contrast, be the most positive in their expectations of future success.

Method

Subjects

The 233 college students who participated in the study ranged in age from 17 to 32 (M = 19.3) years. Of this total, 53 were black, 144 were female, and 158 were first-year students.

Procedure

The subjects were all enrolled in one of three large sections of introductory psychology. All these sections had been administered a major course examination in the class session immediately preceding the data collection date and therefore anticipated receiving their scores. During the first few minutes of class, the course instructor presented the distribution of grades curve to the class and then returned the graded multiple choice examinations. Of the students who participated in the research, 25% received As, 24% Bs, 40% Cs, 9% Ds, and 2% Fs. Any student who did not attend class this day did not participate in the study.

Table 1
Descriptive Statistics for Attribution Variables and Test Performance

Variable	*M*	*Mdn*	*SD*	*n*
Controllability	5.8	6	2.33	230
Locus of causality	3.9	4	2.24	232
Stability	5.0	5	2.11	230
Test performance	5.8	5	2.13	232

Note. Higher scores indicate greater controllability, external causality, stability, and success on the test.

After students received and understood their examination grades they were asked to complete a "Standard Test Rating Form" that would supposedly provide their instructor with information regarding their reactions to and appraisals of the test. This questionnaire assessed the major variables of interest and included 9-point Likert-type measures of test performance, expectations, attributions, and affect.

Test performance. Students were asked two questions concerning their test scores. First, they indicated the letter grade they received on the test. Second, they responded to the question "How well did you do on the test?" using a scale that ranged from "very well" to "very poorly."

Attributions. Three items were included to assess causal beliefs: (a) *controllability*—"To what extent do you think your score on the test was caused by things you can't control versus can control"; (b) *locus of causality*—"To what extent do you think your score on the test was caused by personal factors (things about you) versus environmental factors (the test, room, luck, etc.)"; and (c) *stability*—"To what extent do you think your score on the test was caused by things that are stable (don't change) versus unstable (change)?" Descriptive statistics for the performance and attribution variables are presented in Table 1.

Affect. Affective reactions were measured by using the 16 items listed in Table 3. The items, which asked subjects to estimate the magnitude of their feelings on unnumbered 9-point scales with gradations identified by four verbal labels (e.g., very unrelaxed, somewhat unrelaxed, somewhat relaxed, and very relaxed), were those Weiner et al. (1978) had found were either salient to success or failure or relevant to attributional dimensions.

Expectations. The item "How well do you expect to do on future tests in this class?" was followed by a 9-point scale ranging from "very well" to "very poorly."

Results

Although this research deals with non-

manipulated classification variables, analysis of variance (ANOVA) was chosen to examine the link between the classification variables (performance, controllability, stability, and locus), affective reactions, and expectations. This approach requires classification of subjects (usually by median split) as low versus high on the basis of their responses to those items that are used as the classification variables in the ANOVA. The major liability of this approach is the loss of information caused by the dichotomization procedure. However, this limitation is offset by the advantages of ANOVA in testing for significant interactions. Several interactive effects of the performance and attribution variables were predicted based on previous theory and research, and only ANOVA offers a clear and easily interpretable test for such effects. (Interactions can be tested via regression analysis, but their interpretation can be complex when more than two independent variables are involved.) Similar ANOVA methods of analysis were used by Bernstein, Stephan, and Davis (1979) when testing for an interaction in their study of attributions in educational settings.

On the basis of these considerations, respondents were assigned to one of two examination performance categories by designating those who scored at or below the median on the item "How well did you do on the test?" as failure students and subjects above the median as success students. The means for these two groups on the test performance item were 4.0 and 7.5, respectively, $F(1, 231) = 516.00$, $p < .05$).[1] In a similar fashion, dichotomous categories were created for attributions, again using median splits. Hence respondents' attributions were identified as either controllable or uncontrollable (Ms = 7.9 and 3.9), internal or external (Ms = 2.1 and 5.8), and unstable or stable (Ms = 2.6 and 6.3).

Once dichotomized, the performance and attributions measures were used as the classification variables in 2 (test performance: success vs. failure) × 2 (controllability: controllable vs. uncontrollable) × 2 (locus of causality: internal vs. external) × 2 (stability: unstable vs. stable) multivariate and univariate ANOVAs. Naturally, the classification variables used in these analyses were not true independent variables; they had not been experimentally manipulated, nor were the cell sizes of the 2 × 2 × 2 × 2 factorial design equal. Therefore, least-squares regression procedures were used to test for all main effects and interactions. This approach adjusts each effect for all other effects of equal or lower order in the full model and thereby ensures that any confounding of the classification variables produced by the nonorthogonality of the design is statistically controlled (see Appelbaum & Cramer, 1974, 1976; Cramer & Appelbaum, 1980, for a more detailed discussion).[2] As a final statistical note, because multiple measures of affect were collected, univariate ANOVAs were preceded by multivariate analyses of variance that used Pillai's trace as the approximation to F (Pillai, 1965). In all cases, only effects that were statistically significant at the $p < .05$ level in the multivariate ANOVA will be discussed univariately.

Affect

As the multivariate results summarized in Table 2 indicate, main effects of controllability, locus of causality, and test performance reached multivariate significance on the 16 affect measures. These significant findings justify the examination of these same effects at the univariate level, and Table 3 presents the means and F ratios for the most powerful effect: test performance. As in past research, ratings of performance were highly related to affective reactions. On all of the items, the mean for failure students was significantly smaller than the success students' mean. However, attributions also influenced affect—although the effect was not as strong as the performance effects. Also shown in Table 3 are the univariate F ratios and means for the main effect of controllability, which reached significance ($p < .05$) on 11 of the 16 items. As predicted, students who believed a poten-

[1] Virtually identical results were obtained when analysis used the reported letter grade as the measure of test performance. The correlation between performance and reported letter grade was .91.

[2] The correlations between the 9-point scale measure of the three attributional dimensions were controllability and locus of causality, $r = -.409$; controllability and stability, $r = .255$; locus of causality and stability, $r = -.131$. Higher scores indicated greater controllability, externality, and stability.

Table 2
Summary Table for Multivariate Analyses

Source	Pillai's trace	*F*	*p* value
Locus of causality (L)	.14792	2.09	<.01
Stability (S)	.06870	.89	=.58
Controllability (C)	.12985	1.80	<.05
Test performance (T)	.61073	18.93	<.001
L × S	.07999	1.05	=.41
L × C	.05423	.69	=.8
L × T	.15195	2.16	<.01
S × C	.11013	1.49	=.11
S × T	.11245	1.53	=.09
C × T	.07592	.99	=.4
L × S × C	.12515	1.73	<.05
L × C × T	.06521	.84	=.6
L × S × T	.06659	.86	=.6
S × C × T	.06211	.80	=.69
L × S × C × T	.05495	.70	=.8

Note. The degrees of freedom for all tests were 16, 193.

tially controllable factor caused their outcomes responded more positively than subjects who believed uncontrollable causes were operating. Interestingly, although control was related to the affect measures that focused on general satisfaction (e.g., relaxed, happy, delighted, elated, and satisfied), control was not related to self-evaluations of competency and pride.

The main effect for locus of causality, although significant by multivariate analysis, reached univariate significance on only two items: frustrated/fulfilled and upset/composed; Fs(1, 208) = 4.15 and 4.18, respectively (ps < .05). Respondents who attributed their outcome more to internal factors than external factors felt more fulfilled (M = 5.7) and composed (M = 6.3) than those who attributed their outcomes to external factors (Ms = 4.6 and 5.1, respectively).

Table 4 contains the means and F ratios for the Performance × Locus of Causality interactions that were univariately significant. As inspection of this table reveals, the five interactions all follow a similar pattern. Individuals who believed their good performance was the product of internal causes rather than external causes reported significantly more positive affect. In addition, on the two measures of personal ability—competence and adequacy—those who inter-

Table 3
Test Performance, Perceived Controllability, and Affective Reactions to Test Feedback

	Test performance					Controllability				
	Success[a]		Failure[b]			Controllable[c]		Uncontrollable[d]		
Item	*M*	*SD*	*M*	*SD*	*F* ratio	*M*	*SD*	*M*	*SD*	*F* ratio
Unpleasantly surprised/ pleasantly surprised	7.0	1.5	4.0	1.8	154.05*	6.3	2.0	4.9	2.2	4.88*
Unrelaxed/relaxed	6.9	2.0	4.4	1.8	68.02*	6.5	2.2	4.9	2.1	8.96*
Unhappy/happy	7.3	1.7	3.8	1.8	159.03*	6.5	2.3	4.7	2.2	9.42*
Incompetent/competent	7.3	1.4	4.8	1.7	116.10*	6.5	1.9	5.6	2.0	2.09
Tense/calm	6.9	1.9	4.9	2.0	39.04*	6.6	2.1	5.4	2.1	2.61
Dissatisfied/satisfied	7.3	1.6	3.6	1.7	197.70*	6.4	2.4	4.6	2.3	7.87*
Disgusted/delighted	7.0	1.6	4.0	1.5	159.15*	6.3	2.2	4.7	2.0	11.52*
Shame/pride	6.8	1.4	4.2	1.3	168.26*	6.0	1.9	5.1	1.7	.09
Frustrated/fulfilled	6.6	1.7	3.7	1.5	135.59*	6.0	2.1	4.4	2.0	7.01*
Displeased/pleased	7.3	1.5	3.7	1.7	219.78*	6.3	2.3	4.9	2.2	3.75*
Inadequate/adequate	7.2	1.5	4.2	1.6	158.67*	6.5	2.1	5.1	2.0	3.66
Bad/good	7.2	1.5	3.8	1.5	216.91*	6.4	2.2	4.7	2.1	5.37
Discontentment/ contentment	7.2	1.6	4.0	1.6	161.27*	6.4	2.2	5.0	2.0	5.60*
Upset/composed	7.2	1.7	4.2	1.7	137.10*	6.6	2.1	4.9	2.2	8.61*
Unpleasantly astonished/ pleasantly astonished	6.5	1.4	4.2	1.5	114.78*	5.9	1.7	4.9	1.9	2.32
Depressed/elated	6.7	1.4	4.2	1.5	118.49*	6.2	1.8	4.9	1.8	9.71*

Note. The greater the mean, the more positive the affective reaction.
[a] n = 114. [b] n = 110. [c] n = 107. [d] n = 117.
*p < .05, df = 1, 208.

Table 4
Locus of Causality, Performance, and Affective Reactions to Test Feedback

	Locus of attributions								
	Internal				External				
	Success (n = 64)		Failure (n = 46)		Success (n = 50)		Failure (n = 64)		
Item	M	SD	M	SD	M	SD	M	SD	F ratio
Unrelaxed/relaxed	7.5_a	1.5	4.2_c	1.8	6.0_b	2.2	4.5_c	1.8	7.39*
Incompetent/competent	7.5_a	1.3	4.2_d	1.7	7.0_b	1.6	5.2_c	1.6	10.37*
Tense/calm	7.4_a	1.6	4.8_c	2.1	6.2_b	2.0	5.0_c	1.9	4.48*
Inadequate/adequate	7.6_a	1.3	3.9_d	1.7	6.7_b	1.6	4.5_c	1.4	9.36*
Bad/good	7.7_a	1.1	3.5_c	1.6	6.5_b	1.8	4.0_c	1.4	9.79*

Note. The greater the mean, the more positive the affective reaction. For any single dependent measure, means without a common subscript differ at the p = .05 level by Duncan's new multiple range test.
*$p < .05$, $df = 1, 208$.

nalized their failure reacted more negatively than those who felt external factors produced their poor performance. The only other significant multivariate effect, the three-way interaction of locus, stability, and controllability, reached univariate significance for only one question: happy/sad, $F(1, 208) = 4.13$, $p < .05$. Examination of the means indicates that the most positive affect was reported by students who attributed their performance to controllable, internal, and stable factors. The mean for this condition, 7.4, differed from the means for all the other conditions ($p < .05$). The remaining means in the controllable condition were: internal/unstable = 5.1; external/stable = 5.9; external/unstable = 5.6. The means in the uncontrollable cells, in the same order as listed above, were 4.6, 4.3, 5.0, and 4.2.

Table 5
Attributions and Expectations

	Controllable causes		Uncontrollable causes	
Performance	Internal locus	External locus	Internal locus	External locus
Success				
Cell M	7.8_a	$7.4_{a,b}$	$7.3_{a,b}$	$7.3_{a,b}$
n	55	17	11	33
Cell SD	1.1	1.0	1.2	1.3
Failure				
Cell M	6.9_b	6.7_b	$7.2_{a,b}$	6.1_c
n	25	14	25	50
Cell SD	1.1	1.5	1.2	1.8

Note. Higher means indicate more positive expectations of future success. Means without a common subscript differ at the p = .05 level by Duncan's new multiple range test.

Expectations

Two significant main effects (locus of causality and performance) were qualified by the higher-order interaction of locus, performance, and controllability, $F(1, 215) = 4.80$, $p < .05$. As Table 5 indicates, individuals who failed expressed the most negative expectations when they felt their performance was caused by external, uncontrollable factors—that is, factors they could do little to change in order to improve their chances for success. On the other hand, individuals who succeeded expressed somewhat more positive expectations when they felt that their score was the product of internal, controllable factors—that is, that they had produced their outcomes themselves and hence they would probably be able to attain a similar level of performance in the future.

Discussion

As anticipated, students who performed poorly reported more negative affective reactions than successful students, supporting

Weiner's concept of outcome-dependent affects. However, other findings verified the existence of an attribution-affect link. As is consistent with Weiner et al.'s findings (1978, 1979), individuals who attributed success to internal personal factors felt more relaxed, competent, calm, adequate, and good, compared with students who attributed this success to external factors. In addition, a subset of these affects (competency and adequacy) revealed that students who externalized failure reported more positive levels of affect than failure students who internalized the failure. Lastly, students who felt that internal, controllable, and stable factors produced their examination score reported more happiness than all other attributors.

These findings complement and support a self-worth explanation of the affect–attribution link in educational settings (Covington & Beery, 1976; Covington & Omelich, 1979). According to self-worth theory, the student's sense of personal worth and value is closely tied to his or her performance in the classroom. Because of the value placed on success and the tendency to use failure as an indicant of inability and incompetence, students react at an affective level when they receive feedback about course performance. However, attributions about the failure or success become important because they provide the means through which students can insulate themselves from the negative implications of the performance or take full advantage of examination information that may have a positive impact. For example, Covington and Omelich (1979) recently found that students who learn they have failed an exam report greater shame when they believe they tried hard on the test than when they believe they tried very little. In addition, Covington, Spratt, and Omelich (1980) report that failure after high effort creates feelings of inability and reduced satisfaction relative to failure after expending little effort. Apparently, students' attributions work as a self-defense against the implications of poor performance, as if arguing "I should not be derogated for my failure because I didn't try very hard." Similarly, students in the present investigation who failed and stressed the causal impact of external factors reported greater competence and adequacy than students who accepted the information as an indicator of personal worth. Furthermore, students who succeeded and emphasized internal factors rated themselves more positively than successful students who externalized their success, as though arguing "I should be praised for my success because I am personally responsible for it."

Although the findings of this investigation are generally compatible with Weiner's previous conclusions, the strong and consistent relationship between controllability and affect suggests that this dimension may be more critical, attributionally speaking, in an educational setting than Weiner's original model suggested. In this study the affective reactions of students who felt their performance was caused by factors they could control—such as personal effort and amount of time devoted to studying—were more positive (e.g., satisfied, happy, delighted, fulfilled) than the reactions of students who believed they did not control the cause of their outcome. This overall effect of controllability, which was unqualified by performance level or the other two attributional dimensions, supports Seligman's work investigating sources of learned helplessness (e.g., Abramson, Seligman, & Teasdale, 1978; Seligman, 1975). Even students who did well on the test but nonetheless believed they could not control their outcomes reported less positive affect, suggesting that perceived noncontingency—and not just failure or the loss of reinforcement—is associated with depression and loss of achievement motivation.

This conclusion is further substantiated by the link between attributions and students' expectations concerning their future performances. Although most subjects were quite optimistic about their expected future test grades, a failing grade was significantly related to lower expectations when students believed their score was produced by environmental factors beyond their control (e.g., low quality of teaching, unfair testing procedures, time constraint, miscellaneous outside pressures, etc.). In contrast, the most positive expectations were expressed by students who felt that they had done well

on the test because of the influence of internal, controllable factors (e.g., effort, care taken in reading the test questions, study methods, persistence in pursuing understanding, etc.).

This finding stands in contrast to a wide variety of research examining the link between stability of casual attributions and changing expectations (e.g., Valle & Frieze, 1976; Weiner et al., 1976), but this divergence may stem from several possible factors. For example, much of the support for the importance of the stability dimension in the attribution process comes from research conducted in laboratory settings involving experimental tasks. Although the laboratory task may be of immediate interest to subjects, performance quality is typically not tied to any long-range consequences. In fact, expectations advanced by subjects in such situations are, in general, formulated in answer to the experimenter's queries, since it is unlikely subjects consider facing a similar task again in the future.

In an educational setting, on the other hand, students are assumed to be working toward the goal of successful course performance. Those students who find they are failing must critically examine the causes of this outcome if they wish to improve their grade, and successful students must understand the cause of their good score if they wish to maintain this level of performance. Although possible causal candidates may vary in terms of stability, the students in the classroom may be more concerned with their controllability. When outcomes are produced by factors that can be controlled, failure students can assure themselves that they will do better next time, and successful students can assume that good scores will occur again. Uncontrollable factors, however, in conjunction with locus of causality, may be cause for dismay.

Other research conducted in academic settings also suggests that the tie between expectations, affect, and the stability dimension is not as strong as the laboratory findings imply (e.g., Arkin & Maruyama, 1979; Bernstein, Stephan, & Davis, 1979; Covington & Omelich, 1979), but none of these studies considered the impact of controllability on affect and expectations. Further, in most research, attributional dimensions are only indirectly assessed by generalizing from specific causes by assuming that the dimensions suggested by theory are reflected in the causes. For example, if an individual attributes an outcome to effort rather than ability, the researchers would conclude an "unstable" factor was being emphasized. However, when controllability is introduced as a potential dimension, an emphasis of effort over ability can be reinterpreted as an attribution to a controllable, rather than an unstable, factor. Thus, although past findings indicated that stability was related to expectancy change, controllability may have actually been the more important attributional dimension. This speculation receives further support from field studies of the link between controllability, depression, and coping (e.g., Bulman & Wortman, 1977; Dweck & Reppucci, 1973; Janoff-Bulman, 1979; Rodin & Langer, 1977; Schulz & Hanusa, 1978).

These results support Clifford's recently espoused contention (1979) that failure in educational settings need not lead to losses in achievement motivation, depression, or frustration. If students who do poorly in class conclude there is nothing they personally can do to change their outcomes, then certainly their failure will undermine their motivation and satisfaction with self and school work. However, if the teacher encourages students to associate failure with factors that can be controlled, then the debilitating consequences of failure may be avoided. Thus, the attributional approach provides a model for dealing constructively with classroom failure. By emphasizing the importance of internal, controllable factors as causes, teachers may promote pupils' educational experiences that are both more satisfying and more effective.

Reference Note

1. McMillan, J. H., & Sprat, K. F. *Causal attributions and affect in a real-life testing situation.* Paper presented at the Annual Convention of the American Educational Research Association, Boston, 1980.

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Received June 12, 1980 ■