

## Attributional Styles and Academic Achievement in University Students: A Longitudinal Investigation

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*Although a number of previous studies have examined the relation between attributional styles and academic achievement, they have yielded contradictory results. This study sought to further examine the relation between attributional styles assessed during the freshman year and academic achievement over the entire college career. Results suggest that, among students who tend to make internal or stable attributions for negative life events, those with low levels of academic ability (i.e., low SAT scores) receive lower cumulative GPAs while in college than do those with high levels of academic ability (i.e., high SAT scores). In contrast, the GPAs of students who tend to make external or unstable attributions for negative life events appeared to be relatively unaffected by their level of academic ability.*

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**KEY WORDS:** attributional style; GPA; academic achievement.

Numerous studies have supported the relation between pessimistic attributional styles and depressive symptoms (for reviews, see Abramson et al., 1999; Alloy et al., 1999; Peterson & Seligman, 1984). More recently, however, studies have begun investigating other correlates of these attributional styles including achievement in school, work, and sports, as well as physical health (see Buchanan & Seligman, 1995). The goal of this study was to further explore the relation between attributional styles and academic achievement.

To date, studies exploring the relation between attributional style and academic achievement have yielded contradictory results. On the one hand, several studies suggest that students with pessimistic attributional styles (i.e., the tendency to attribute negative events to internal, stable, and global causes) have *lower* grade point averages (GPAs) than do individuals with optimistic attributional styles (i.e., the tendency to attribute negative events to external, unstable, and specific causes; Peterson

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& Barrett, 1987; Schulman, 1995; but see also Fazio & Palm, 1998).<sup>5</sup> The results of these studies were maintained even after students' Scholastic Aptitude Test (SAT) scores were statistically controlled.

On the other hand, studies have also found that students with pessimistic attributional styles have *higher* GPAs. For example, law school students with pessimistic attributional styles had higher levels of academic achievement than did students with optimistic attributional styles (Satterfield, Monahan, & Seligman, 1997). These results were maintained even after students' undergraduate GPAs were statistically controlled, but were reduced to nonsignificant when their Law School Admissions Test scores were controlled. In addition, Houston (1994) presented a series of three studies examining the relation between British undergraduates' attributional styles and their levels of academic achievement. She found that students with a pessimistic attributional style scored higher on a voluntary midpoint exam and on an IQ test than did students with optimistic attributional styles. There was no significant relation, however, between attributional style and students' grades on a mandatory final exam.

It is possible that these contradictory results are due to differences in levels of ability among the student samples. That is, studies have found that more pessimistic attributional styles were associated with better academic achievement in high ability samples (law students and British undergraduates),<sup>6</sup> but with poorer academic achievement in more representative samples (i.e., general samples of undergraduates). Thus, it may be that students' ability levels moderate the relation between attributional styles and academic achievement, with high levels of ability combining with a pessimistic attributional style to predict higher levels of achievement.

The goal of this study, therefore, was to test the hypothesis that students' levels of academic ability (operationalized by SAT scores) would moderate the relation between their attributional styles and cumulative GPAs during college. In this study, we examined the role of the three attributional dimensions (internality, stability, and globality) considered together and individually. We predicted that among low-ability students (i.e., students with relatively lower SAT scores), a pessimistic attributional style would be associated with lower GPAs. Among high-ability students (i.e., students with relatively higher SAT scores), however, we predicted that a pessimistic attributional style would be associated with higher GPAs.

## METHOD

### Participants

Participants in this study were a subset of those who participated in the Cognitive Vulnerability to Depression (CVD) Project (Alloy & Abramson, 1999). Participants

<sup>5</sup>Schulman (1995) reported a series of three studies, two with undergraduates and one with 1st-year West Point cadets. In the cadet study, the correlation between attributional styles and GPAs was significant only after controlling for the cadets' SAT scores. The results of this study, therefore, should be interpreted with caution. Specifically, it is possible that the significant result was the statistical artifact of a suppressor effect.

<sup>6</sup>Houston (1994) reported that less than 10% of the British population attends college. As such, the students in this study represent a subgroup of high-achieving individuals relative to the rest of the British population.

in the CVD Project were Temple University (TU) and University of Wisconsin (UW) freshmen scoring in the highest (most negative) or lowest (most positive) quartile on *both* the Cognitive Style Questionnaire (CSQ; Abramson, Metalsky, & Alloy, 2002) and a modified version of the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) and who exhibited no current Research Diagnostic Criteria (Spitzer, Endicott, & Robins, 1978) or *Diagnostic and Statistical Manual – Third Edition – Revised* (DSM-III-R; American Psychiatric Association, 1987) Axis I disorders (for more details, see Alloy et al., 2000; Alloy & Abramson, 1999). Students scoring in the highest and lowest quartile on the CSQ and DAS were designated at high (HR) and low (LR) cognitive risk for depression, respectively.

Only those participants from the TU site who signed consent forms giving us access to their university academic transcripts were included in this study ( $N = 109$ ). Of our participants, 71 (65.1%) were women, 74 (67.9%) were Caucasian, and 55 (50.5%) were HR. The mean age of our participants upon entering the study was 19.61 years ( $SD = 1.75$ ). Although the HR and LR participants in the current sample did not differ significantly in terms of age or gender, significantly more HR than LR participants were Caucasian,  $\chi^2(1; N = 108) = 8.41, p = .004, r_{\text{effect size}} = .28$ . Also, although participants in this study were significantly older,  $t(347) = 2.04, p = .04, r_{\text{effect size}} = .11$ , and less likely to be Caucasian,  $\chi^2(1; N = 346) = 10.50, p = .001, r_{\text{effect size}} = .17$ , than were participants in the total CVD Project sample (TU and UW participants), there were no differences in terms of gender or the proportion of HR and LR participants. In addition, participants in this study did not differ significantly from other TU participants in the total CVD Project sample in terms of age, gender, ethnicity, or proportion of HR and LR participants.

## Measures

### *Attributional Styles*

The CSQ (Abramson et al., 2002), a revised version of the Attributional Style Questionnaire (Peterson et al., 1982), is a self-report measure used to assess individuals' tendency to make internal, stable, and global attributions and to infer negative consequences and negative characteristics about themselves following the occurrence of a negative life event. For this study, only responses to the 12 hypothetical negative events were included. Scores for each of the three attributional dimensions were calculated by averaging participants' responses for that dimension across all 12 items. In addition, we created an attributional composite by averaging participants' responses to each of the three attributional dimensions. Scores on each dimension range from 1 to 7, with higher scores indicating a more internal, stable, and global attributional style. In the Phase 1 TU screening sample, the internality ( $\alpha = .62$ ), stability ( $\alpha = .82$ ), and globality ( $\alpha = .79$ ) attributional dimensions, as well as the attributional composite ( $\alpha = .84$ ) exhibited good internal consistency.

### *Academic Achievement*

Students' cumulative GPAs for their entire time in college, as well as their SAT scores, were obtained from their official transcripts.

## Procedures

Participants who were hypothesized to be at high versus low cognitive risk for depression, on the basis of their responses to the CSQ and DAS, were chosen for inclusion in the CVD Project. After the screening procedure was completed, participants who agreed to participate in the rest of the study were enrolled in the 5-year prospective follow-up phase. At the end of the study, participants signed an additional informed consent giving access to their official college transcripts. Participants were paid for all of their time.

## RESULTS

Before examining the relation between attributional styles and academic achievement, a 2 (Gender: Male vs. Female)  $\times$  2 (Ethnicity: Caucasian vs. non-Caucasian) ANOVA was conducted to test for possible gender and/or ethnic differences in GPA. The main effect for ethnicity was significant,  $F(1, 104) = 5.75$ ,  $p = .02$ ,  $r_{\text{effect size}} = .23$ , with Caucasians having higher cumulative GPAs than non-Caucasians. Neither the main effect for gender nor the Gender  $\times$  Ethnicity interaction was significant. Also, when SAT scores were statistically controlled in an ANCOVA, the main effect for ethnicity was reduced to nonsignificant,  $F(1, 86) = 0.90$ ,  $p = .35$ ,  $r_{\text{effect size}} = .10$ .

Correlations among the measures included in this study, as well as means and standard deviations for each of the measures, are presented in Table I. As can be seen in Table I, participants' scores on the attributional style composite and dimensional scores were not significantly related to their GPAs, although students with more stable attributional styles for negative events tended to have higher GPAs than did students with more unstable attributional styles. In addition, two of the three attributional dimensions and the attributional composite were directly related to students' SAT scores.

To test the hypothesis that SAT scores would moderate the relation between participants' attributional styles and their GPAs, a series of four regression analyses was conducted. In these analyses, participants' SAT scores and one of the measures of attributional style were entered in the first step of the regression. In the second step, the interaction term was entered. In these analyses, only the CSQ-Internality  $\times$  SAT interaction,  $t(88) = 3.82$ ,  $p < .001$ ,  $\beta = 3.51$ , and the CSQ-Stability  $\times$  SAT interaction,

**Table I.** Correlations, Means, and Standard Deviations for Attributional Style and Academic Variables

Variable	1	2	3	4	5	Mean	SD
1. CSQ-Composite	—					4.47	0.89
2. CSQ-Internality	.66***	—				5.02	0.78
3. CSQ-Stability	.85***	.39***	—			4.56	1.15
4. CSQ-Globality	.88***	.40***	.60***	—		3.83	1.35
5. Cumulative GPA	.11	-.02	.18*	.08	—	2.94	0.60
6. SAT	.29**	.28**	.29**	.16	.46***	941.90	160.10

Note. GPA = Grade point average, SAT = Scholastic Aptitude Test.

\* $p = .06$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

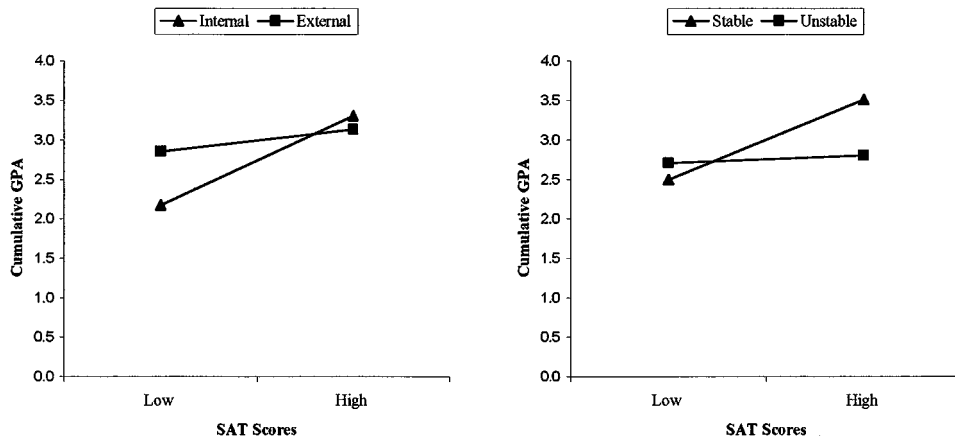


Fig. 1. Summary of results for CSQ-Internality  $\times$  SAT and CSQ-Stability  $\times$  SAT interactions predicting undergraduates' cumulative GPAs.

$t(88) = 3.81, p < .001, \beta = 2.92$ , were significant. In contrast, the CSQ-Composite  $\times$  SAT interaction,  $t(88) = 1.61, p = .11, \beta = 1.52$ , and the CSQ-Globality  $\times$  SAT interaction,  $t(88) = -1.66, p = .10, \beta = -1.24$ , were nonsignificant. The nature of these interactions is illustrated in Fig. 1.

## DISCUSSION

Results from this study partially supported our hypothesis and helped to clarify the contradictory findings of previous studies. Specifically, two of the three attributional dimensions interacted significantly with undergraduates' SAT scores to predict their cumulative GPAs. In both cases, freshmen with pessimistic attributional styles (internal or stable attributional styles for negative events) received higher cumulative GPAs during college if they had high levels of ability (i.e., high SAT scores) than if they had low levels of ability (i.e., low SAT scores). In contrast, freshmen with optimistic attributional styles (external or unstable attributional styles for negative events) received fairly equivalent cumulative GPAs whether they had high or low levels of academic ability.

These results offer a more complex view of attributional styles and suggest that a pessimistic attributional style may not be uniformly deleterious. That is, it may negatively impact students' levels of academic achievement only when it is coupled with low levels of academic ability. In contrast, for students with high levels of academic ability, a tendency to attribute negative events to internal and stable causes may lead to better academic performance. For example, a student of high-academic ability who receives a low grade in a course may attribute the poor grade to his or her tendency to procrastinate on course assignments, which may prompt him or her to begin working on assignments earlier in subsequent courses, resulting in better grades.

Interestingly, we did not find support for the hypothesis that SAT scores would moderate the relations between attributional globality or composite scores and students' GPAs. Indeed, the CSQ-Globality  $\times$  SAT interaction tended to show the opposite pattern than that found for the internality and stability dimensions. Specifically, the cumulative GPAs of freshmen with global attributional styles appeared to be relatively independent of their level of academic ability. In contrast, freshmen with specific attributional styles tended ( $p = .10$ ) to receive higher cumulative GPAs if they had high levels of academic ability than if they had low levels of academic ability. This difference in pattern of results may have been what led to the nonsignificant finding for the attributional composite score and suggests that researchers should continue to explore the differential relations of the different attributional dimensions with achievement outcomes.

Despite the contributions offered by this study, its limitations should also be noted. First, although there was some variability in CSQ scores, selecting participants in the upper and lower quartile for inclusion in the study resulted in a restriction of range. This could have reduced the magnitude of the correlations between the attributional scores and both GPAs and SAT scores. Second, although a strength of this study is its long-term follow-up, it remains unclear how the current findings apply to students' grades across individual semesters. Future studies should seek to replicate the current moderation findings, therefore, across individual semesters.

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### REFERENCES

- Abramson, L. Y., Alloy, L. B., Hogan, M. E., Whitehouse, W. G., Donovan, P., Rose, D., Panzarella, C., & Ranieri, D. (1999). Cognitive vulnerability to depression: Theory and evidence. *Journal of Cognitive Psychotherapy, 13*, 5–20.
- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (2002). *The Cognitive Style Questionnaire: A measure of the diatheses featured in the hopelessness theory of depression*. Manuscript in preparation, University of Wisconsin – Madison.
- Alloy, L. B., & Abramson, L. Y. (1999). The Temple–Wisconsin Cognitive Vulnerability to Depression (CVD) Project: Conceptual background, design and methods. *Journal of Cognitive Psychotherapy, 13*, 227–262.
- Alloy, L. B., Abramson, L. Y., Hogan, M. E., Whitehouse, W. G., Rose, D. T., Robinson, M. S., Kim, R. S., & Lapkin, J. B. (2000). The Temple–Wisconsin Cognitive Vulnerability to Depression Project: Lifetime history of Axis I psychopathology in individuals at high and low cognitive risk for depression. *Journal of Abnormal Psychology, 109*, 403–418.
- Alloy, L. B., Abramson, L. Y., Whitehouse, W. G., Hogan, M. E., Tashman, N. A., Steinberg, D. L., Rose, D. T., & Donovan, P. (1999). Depressogenic cognitive styles: Predictive validity, information processing and personality characteristics, and developmental origins. *Behavior Research and Therapy, 37*, 503–531.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed. revised). Washington, DC: Author.
- Buchanan, G. M., & Seligman, M. E. P. (Eds.). (1995). *Explanatory style*. Hillsdale, NJ: Erlbaum.
- Fazio, N. M., & Palm, L. J. (1998). Attributional style, depression, and grade point averages of college students. *Psychological Reports, 83*, 159–161.

- Houston, D. M. (1994). Gloomy but smarter: The academic consequences of attributional style. *British Journal of Social Psychology, 33*, 433–441.
- Peterson, C., & Barrett, L. C. (1987). Explanatory style and academic performance among university freshmen. *Journal of Personality and Social Psychology, 53*, 603–607.
- Peterson, C., & Seligman, M. E. P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review, 91*, 347–374.
- Peterson, C. R., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M. E. P. (1982). The Attributional Style Questionnaire. *Cognitive Therapy and Research, 6*, 287–300.
- Satterfield, J. M., Monahan, J., & Seligman, M. E. P. (1997). Law school performance predicted by explanatory style. *Behavioral Sciences and the Law, 15*, 95–105.
- Schulman, P. (1995). Explanatory style and achievement in school and work. In G. M. Buchanan & M. E. P. Seligman (Eds.), *Explanatory style* (pp. 159–171). Hillsdale, NJ: Erlbaum.
- Spitzer, R. L., Endicott, J., & Robbins, E. (1978). Research diagnostic criteria: Rationale and reliability. *Archives of General Psychiatry, 35*, 773–782.
- Weissman, A., & Beck, A. T. (1978). *Development and validation of the Dysfunctional Attitude Scale: A preliminary investigation*. Paper presented at the meeting of the American Educational Research Association, Toronto, Canada.