Optimism and College Grades: Predicting GPA From Explanatory Style

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ABSTRACT. The current study attempted to predict grade point average (GPA) based on academic explanatory style in college students. Building our work on Barrett and Peterson’s study (1987), we hypothesized that college students with optimistic explanatory style would have significantly higher GPAs than college students with pessimistic explanatory style. We tested this hypothesis with 171 undergraduate students at a small liberal arts college by using the Academic Attributional Style Questionnaire (AASQ; Barrett & Peterson, 1987) and found a significant, but small, $r = -.15$, $p = .44$, negative correlation between academic explanatory style and GPA. Although our results pointed to the conclusion that college students with optimistic explanatory style have higher GPAs than college students with pessimistic explanatory style, explanatory style seems to have a weak predictive value for college GPA. Further research needs to replicate these findings and examine their practical significance. Alternative explanations and future research directions are discussed.

Explanatory style is a personality variable referring to the habitual way in which individuals explain to themselves the cause of the negative events that befall them (Maier & Seligman, 1976). It spans three dimensions: internality, stability, and globality (Maier & Seligman, 1976). Individuals who typically make internal attributions ascribe the cause of the negative event to an internal factor. In contrast, individuals offering external attributions ascribe the cause to an external factor. A student failing an exam may make an internal attribution such as “I am stupid” or an external attribution such as “The exam was too hard.” Individuals who consistently make stable attributions believe that the cause of the negative event will last forever, whereas individuals offering unstable attributions expect this cause to be transient. A student who is on academic probation may make a stable attribution and believe that the factor responsible for this event will last forever or make an unstable attribution and regard this cause as temporary. Finally, individuals consistently offering global attributions believe that the negative event will impact other life areas, whereas individuals making specific attributions think that this event will be circumscribed. A student who drops out of college may make a global attribution and believe that the negative event will negatively impact his or her relationships, or make a specific attribution and think that the failure will not influence other life areas negatively (Maier & Seligman, 1976).

The choice of dimensions of explanatory style was theoretically driven and reflected the researchers’ questions of interest (Peterson, 1991). Explanatory style originated from the reformulated learned helplessness model and sought to explain why individuals responded in different ways to major, negative life events. Individuals who typically offered internal, stable, and global attributions for negative events were more likely to behave passively in the face of challenge, were poor at problem-solving, and eventually gave up. In contrast, individuals who offered external, unstable, and specific causal...
attributions to negative events were more likely to persist after failure and keep trying to excel (Maier & Seligman, 1976).

Rather than a typology, explanatory style can be represented on a continuum between pessimistic and optimistic explanatory style. Individuals should not be categorized as pessimistic or optimistic. Instead, one should regard them as more likely to have an optimistic or pessimistic explanatory style. Individuals with pessimistic explanatory style habitually make internal, stable, and global attributions for bad events. These individuals expect negative events to happen consistently and believe that they cannot exert control over these events. Individuals with pessimistic explanatory style are more likely to become helpless and passive in the face of obstacles and exhibit the “whatever will be will be” mentality. On the other hand, individuals with optimistic explanatory style consistently offer external, unstable, and specific causal attributions for bad events. Unlike individuals with pessimistic explanatory style, individuals with optimistic explanatory style typically possess a wider repertoire of responses to challenge. Instead of giving up in the face of challenge, optimists typically renew their efforts (Maier & Seligman, 1976).

Many studies have documented the relation between pessimistic explanatory style and depression, and have consistently found that individuals offering internal, stable, and global causal attributions for negative events were at a greater risk for depression (Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982; Miller & Seligman, 1975). Fazio and Palm (1998) found a significant correlation between depression and explanatory style, and between depression and GPA. Besides depression, a large body of research has supported the relation between explanatory style and achievement in an academic context (Metalsky et al., 1982; Peterson & Barrett, 1987; Nolen-Hoeksema, Girgus, & Seligman, 1986). Specifically, Nolen-Hoeksema et al. (1986) demonstrated that, compared to schoolchildren with optimistic explanatory style, schoolchildren with pessimistic explanatory style showed higher depression levels and were more likely to experience achievement problems. Similarly, Metalsky et al. (1982) found that the more internal and global attributions university first-year students offered for negative events, the more severely depressed they became after the receipt of a low midterm-exam grade. Fazio and Palm (1998) found a significant correlation between depression and explanatory style, and between depression and GPA.

Although pessimistic explanatory style has been linked to low achievement performance in an academic context, there may be multiple definitions of academic performance. Thus, it seems reasonable to focus on a single aspect of academic performance such as GPA. Examining the relationship between explanatory style and GPA is important because the former may emerge as an unexpected predictor of and have important implications for the latter (Peterson & Barrett, 1987). Explanatory style may have a direct bearing on students’ approach toward studying. Students in any course typically encounter a number of difficulties throughout the semester, such as failing a quiz, coming unprepared to class, or not being able to solve a set of homework problems. It is important how students explain to themselves the causes of these events because this may affect their academic performance.

Individuals believe that internal factors are less likely to change than external factors (Metalsky et al., 1982). Thus, if a student thinks “I’m stupid,” the student is likely to give up and believe intelligence is not likely to change. External circumstances, on the other hand, are perceived as more mutable. If a student assigns the blame to an external factor, he or she is likely to keep trying to excel. Thus, students with optimistic explanatory style are expected to persist in the face of challenge and renew their efforts after a negative academic outcome (Peterson & Barrett, 1987). Students who eventually achieve a higher GPA are perhaps less likely to behave passively because they offer external attributions (“The professor gave a very hard exam”), unstable attributions (“It will be short-lived”), and specific attributions (“It will not affect the other areas of my life”). On the contrary, students who end up with a low GPA may be more likely to behave passively because they use internal (“I’m stupid”), stable (“It’s going to last forever”), and global (“It will undermine everything I do”) causal attributions for their academic failures. These students tend to be passive when they encounter obstacles and eventually give up (Peterson & Barrett, 1987). Yet, it must be noted that the relationship between attributional style and GPA seems to be moderated by different variables such as students’ ability level (Gibb, Zhu, Alloy, & Abramson, 2002; Houston, 1994), major (Satterfield, Monahan, & Seligman, 1997), and time of the semester (Yee, Pierce, Ptacek, & Modzelesky, 2003).
Peterson & Barrett (1987) examined the relation between explanatory style and academic performance in 87 university first-year students and found that first-year students with pessimistic explanatory style received lower grades during their first year and were more likely to show passivity in the face of challenge. These findings held true after the researchers controlled for confounding variables including initial depression, measured by the Beck Depression Inventory (Beck & Steer, 1984), and aptitude test scores, measured by the Scholastic Aptitude Test (Peterson & Barrett, 1987).

Building our work on Peterson & Barrett’s (1987) study, we hypothesized that students with optimistic explanatory style who offered external, unstable, and specific attributions to negative academic outcomes would have a higher GPA than students with pessimistic explanatory style who offered internal, stable, and global attributions to negative academic situations.

### Methods

#### Participants

Participants were 235 college students from a small liberal arts college and were at least 18 years old. Missing values necessitated the exclusion of 64 participants, leaving 171 participants for the final analyses. The major reason for this large exclusion was that participants received class credit for providing informed consent in the survey. As they could not be required to complete the whole survey because of ethical considerations, many of them answered only several questions and left the rest blank. The mean GPA was 3.16 (SD = 0.51) with a range of 1.72 to 4.00. There were 123 women (72%) and 48 men (28%). The majority of participants were 88 first-year students (51%), followed by 30 sophomores (18%), 21 juniors (12%), and 32 seniors (19%). Participants included both domestic (n = 158) and international students (n = 13).

#### Measures

**Demographic questionnaire.** Participants reported demographic information including sex, age, year in college, overall GPA, major, and whether they were a transfer or an international student. We did not collect ethnicity information because we believed that it was irrelevant to our major hypotheses.

**Explanatory style.** Participants completed the Academic Attributional Style Questionnaire (AASQ: Peterson & Barrett, 1987), which is patterned after the Attributional Style Questionnaire (ASQ: Cooligan, Offord, Malinchoc, Schulman & Seligman, 1994). The ASQ asked participants about various life events, mainly interpersonal situations (Cooligan et al., 1994), whereas the AASQ presented participants only with academic situations (Peterson & Barrett, 1987). Because the nonacademic items were irrelevant to academic outcomes, the AASQ included 12 hypothetical negative academic situations such as “You fail a final examination” (Peterson & Barrett, 1987).

In the original study, participants wrote short answers to the academic situations, after which trained evaluators rated participants’ answers on internality, stability, and globality (Peterson & Barrett, 1987). We altered the way the scale was administered because (a) our method was much less time-consuming, (b) participants provided their answers in a quantitative rather than a qualitative way, and (c) evaluator bias perhaps decreased. Participants rated the cause for each of the 12 academic events on the three dimensions of explanatory style: internality (“It’s me”) versus externality (“It’s somebody else”), stability (“It will last forever”) versus instability (“It will be short-lived”), and globality (“It will affect everything I do”) versus specificity (“It won’t affect anything I do”). The rating used a 7-point Likert scale, with low scores indicating optimistic explanatory style and high scores indicating pessimistic explanatory style. A sample survey item is the Appendix. For each participant, we obtained a composite score ranging from 1 to 7 by averaging participants’ scores across the dimensions of explanatory style and across the 12 negative academic situations (Peterson & Barrett, 1987).

#### Procedure

We obtained institutional review board approval prior to beginning the study. All participants signed an electronic informed consent before taking the survey. We employed several contact methods to recruit participants. First, college students received an e-mail with a link to the survey. Second, introduction to psychology students received credit for completing the survey. Third, students were availed of the survey through a link in the college announcement e-mail. All participants completed the survey electronically via LimeSurvey®.

### Results

Our main hypothesis was supported. There was a significant correlation between explanatory...
style and GPA (see Figure 1). However, this correlation was relatively small, $r = -.15$, $p = .044$. The correlation between internality ($M = 4.48$, $SD = 0.92$) and GPA did not reach statistical significance, $r = .008$, $p = .92$. Stability ($M = 3.55$, $SD = 0.88$), $r = -.16$, $p = .04$, and globality ($M = 4.611$, $SD = 0.74$), $r = -.21$, $p = .07$, each correlated with GPA significantly. Regression analyses indicated that explanatory style and stability respectively accounted for 2.4% and 2.5% of the variance in GPA. Finally, a multiple regression was run using stability and globality as predictors and GPA as the criterion variable. We found a nonsignificant regression coefficient for stability, but a significant regression coefficient for globality, $r = -.14$, $p = .027$. Globality predicted 5.3% of the variance in GPA.

**Discussion**

Our main hypothesis was supported. There was a significant correlation between explanatory style and GPA. Students with an optimistic explanatory style tended to have a higher GPA than students with a pessimistic explanatory style. There seemed to be a significant, but small, relation between the habitual way in which students explained to themselves their negative academic outcomes and their GPA. This is perhaps because there are multiple other factors influencing one’s GPA such as parents’ level of education, socioeconomic status, IQ, personality traits, and abilities.

Two explanatory style dimensions, stability and globality, each correlated with GPA significantly. Stability, the extent to which individuals believe the factor causing the negative outcome will persist, significantly predicted GPA. This might be because students who believe that the factors causing academic negative events will persist become temporarily depressed and withdraw their efforts (Peterson & Barrett, 1987). It might also be that students’ pessimistic explanatory style negatively influences important life areas such as romantic relationships and friendships, which, in turn, negatively impacts GPA. Out of the three dimensions, globality had the largest predictive value for GPA. It seems that students believing that a failing grade would ruin other life areas become hopeless, withdraw their efforts and end up with a low GPA. Although globality seemed to be the best predictor of GPA out of the three dimensions, further research needs to replicate our findings.

However, the correlation between the third dimension of explanatory style, internality, and GPA did not reach statistical significance. This was a surprising finding because students with a pessimistic explanatory style are expected to attribute the cause of the negative event to internal factors such as their character and abilities, as opposed to external factors such as other people or circumstances (Peterson & Barrett, 1987). Yet, our results did not support this assumption. Internality might have failed to reach statistical significance because students who offer internal attributions for negative academic events may take more responsibility, renew their efforts, and so achieve a higher GPA or because students may believe that internal factors and external factors are equally likely to change. Yet, these explanations violate a main assumption of learned helplessness theory (Maier & Seligman, 1976), and if they were true, we should have found a significant positive correlation between internality and GPA.

Another interesting finding was that stability was no longer significant when we simultaneously predicted GPA based on stability and globality. Stability might have been nonsignificant in the multiple regression because stability and globality were significantly correlated. Stability and globality correlate highly, perhaps because a factor has to last long enough in order to influence many life areas (Peterson, 1991).

Our results were consistent with Peterson & Barrett’s results (1987). We found a significant correlation between explanatory style and GPA. However, there were several important differences between the present study and Peterson & Barrett’s (1987) study. First, the correlation between explanatory style and GPA was smaller in the present study. Second, unlike Peterson and Barrett, we broke down explanatory style by its dimensions and examined their individual correlation with GPA. Third, our sample was larger (171 participants as opposed to 87) and slightly more diverse as it included international students and students from all four years in college. Fourth, Peterson and Barrett (1987) used measures that we did not administer: a questionnaire for the specificity of students’ goals, a self-efficacy questionnaire, a questionnaire about students’ typical coping response to academic failure, and the degree to which students made use of advising throughout the semester.

There were a number of limitations to the current study. First, we only analyzed participants’ self-ratings. Second, we altered the format of the AASQ because (a) reading such a large number of short answers was considerably time-consuming,
(b) participants provided their responses quantitatively rather than qualitatively, and (c) evaluator bias perhaps diminished. Third, the change of the scale might have compromised its internal validity because (a) it limited participants’ responses to a 7-point Likert scale instead of allowing participants to express subtler nuances of their responses, (b) social demand characteristics might have been active, and (c) participants might have been simply confused by the new wording of the situations.

Second, the external validity of our results was limited because our sample was not representative and because of a potential restriction of range issue (e.g., high average GPA). Third, social desirability characteristics might have been active. It was not possible to determine whether participants reported their GPAs accurately because we did not verify their GPAs with the college’s registrar. Participants might have also given more socially desirable responses on the AASQ. Fourth, because the present study used a correlational rather than an experimental design, the direction of causality is not clear. Explanatory style might have influenced GPA, GPA might have influenced explanatory style, or a third variable might have been responsible for both explanatory style and GPA.

Fifth, though many of our results were statistically significant, they were not necessarily practically significant. Although the typical correlation with explanatory style is in the range of .20 to .30 (Peterson, 1991), the size of our correlations was relatively small. Globality, the best predictor out of the three dimensions, explained only 5% of the variance in GPA, which means that 95% of the variance in GPA was explained by factors other than explanatory style. Alternative explanations could include participants’ cultural background, IQ, SAT scores, personal traits and abilities (e.g., persistence, motivation, time-management skills, goal-directedness), depression, major, sex, age, parental education, inaccuracy in reporting GPA, social demand characteristics, and others.

Sixth, it is not clear whether academic explanatory style is a legitimate construct by itself. Explanatory style in general may be a more strongly established psychological construct and may have a greater correlation with GPA than academic explanatory style. Academic attributional style is only an example of attributional style. It is restricted to academic situations only and may thus have a more limited general validity.

Our sample included many more women than men, and sex might have been a confounding variable. Second, explanatory style about academic events may be more strongly expressed in upper division than in first-year students. Students in their first year may not have fully formed their academic explanatory style yet, whereas upperclass students may be more familiar with the negative academic events in college. Third, individuals may offer “spontaneous” attributions to hypothetical events and do not necessarily think of the cause of the negative events that befall them unless explicitly asked (Peterson, 1991). Students might have ruminated on the cause of the negative academic events they encountered, but they might have found it difficult to determine the cause of hypothetical, imagined negative academic events. Fourth, there may be cultural differences in explanatory style (Peterson, 1991), and the international students in our sample might not have conformed to the typical pattern of explanatory style attributions. All of these variables could have acted as potential confounds and might have suppressed the correlation between explanatory style and GPA. Partialing out their variance could have revealed a greater correlation between explanatory style and GPA.

It seems that the relationship between explanatory style and GPA is more complex. Specifically, Gibb et al. (2002) found that students who had a lower ability level (indicated by lower SAT scores) and a pessimistic explanatory style (consisting of internal and stable attributions) had a lower GPA compared to students who had a high ability level (indicated by high SAT scores), suggesting that the correlation between attributional style and GPA is moderated by students’ ability level. Interestingly, globality was not at all related to academic performance (Gibb et al., 2002). The expectation...
that pessimistic attributional style is related to low academic performance and optimistic attributional style is related to high academic performance was violated by other studies as well. Houston (1994) found that students who perform well make stable and, to some extent, global attributions. Satterfield et al. (1997) demonstrated that law students with pessimistic explanatory style (consisting of stable, internal, and global attributions for negative events) had a higher GPA than law students with optimistic explanatory style. Further, Bridges (2001) indicated that SAT, but not attributional style, was significantly related to later performance on course-related objective exams in college. Finally, in a study by Yee et al. (2003), pessimistic explanatory style was not related to academic performance in the first part of the semester, but was positively correlated with it during the second half of the semester. All of these findings that differ from the general attributional style hypothesis underscore the importance of further examining the role of potential confounding variables in the relationship between explanatory style and GPA.

The numerous limitations of the present study point to a number of future research directions. Peterson and Barrett (1987) suggested that prevention programs be designed in order to target students in need of academic attribution therapy. Wilson and Linville (1982, 1985, as cited in Peterson & Barrett, 1987) found that interventions teaching students how to make more transient attributions helped students become more persistent and improved their grades in college. We suggest that colleges design prevention and intervention programs in order to target students with highly pessimistic explanatory style who are doing poorly academically. The programs’ sections on explanatory style should teach students that a low grade does not necessarily affect the other areas of their lives in a negative and long-lasting way. However, because the correlation between explanatory style and GPA is relatively small, the former should be a supplementary part of such programs rather than their primary topic.

Future researchers could examine the causal relation between explanatory style and GPA. Does the former cause the latter or vice versa, or does a third variable cause both? In order to increase external validity, one could diversify the sample by recruiting more participants from various cultural backgrounds, by recruiting more participants with a low GPA, and by randomly selecting participants from the student body. Future researchers could investigate the role of explanatory style at different school levels (e.g., elementary school, middle school, high school, college, and graduate school). One has to examine the development of academic explanatory style over time through longitudinal studies. Future researchers could study academic explanatory style for good events because it is important to understand how students explain their academic success to themselves. Last but not least, future researchers could refine the existing academic explanatory style scale or develop a new one that serves solely the purposes of academic explanatory style.

References


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### APPENDIX

#### Sample Survey Question Measuring Explanatory Style in Negative Academic Situations

You fail a final examination.

<table>
<thead>
<tr>
<th>It’s somebody/something else</th>
<th>It’s me</th>
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<th>It will be short-lived</th>
<th>It will last forever</th>
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<table>
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<tr>
<th>It won’t affect what I do</th>
<th>It will affect everything I do</th>
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