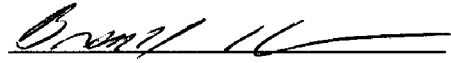
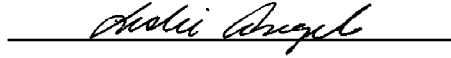


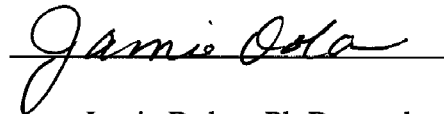
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Running head: PROCRASTINATION AND EXPLANATORY STYLE

Academic Procrastination as a Predictor of Explanatory Style in College Students

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Abstract

The purpose of the present study was to investigate whether having a higher level of academic procrastination had a significant influence on the type of explanatory style found in college students. The study focused on negative explanatory styles, ones that attribute events to internal, stable, and global causes, and positive explanatory styles, attributions to external, unstable and specific causes, as correlates of procrastination. Male and female college students (N=86) in the introductory psychology course at Carroll College were given the Academic Attributional Style Questionnaire (AASQ) to measure their explanatory style and the Procrastination Assessment Scale-Students (PASS) to measure procrastination level. Results indicated that while there was not a significant overall correlation between the scores on the AASQ and the PASS, a significant positive relationship was found between students who had a higher level of procrastination and a negative explanatory style. Statistical analyses produced support for the hypothesis that students who procrastinate on academic assignments will have a greater tendency to use a negative explanatory style. The implication is that students with a negative explanatory style will put assignments off longer and perform poorer on tasks, creating additional work and unnecessary stress. Ideas and suggestions for further investigation are also discussed.

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Academic Procrastination as a Predictor of Explanatory Style in College Students

Academic procrastination is a prevalent problem among many college students who are faced with a multitude of examinations, term papers, and projects during their scholarly career. Procrastination usually involves intentionally delaying a certain task beyond a reasonable period of time, resulting in increased stress and anxiety for the individual. Large numbers of students are adversely affected by procrastination because they are unable to perform particular assignments in a timely and orderly fashion (Peterson & Barrett, 1987). Schouwenburg (1995) found that more than 70% of college students reported procrastinating on a regular basis, with about 20% doing so habitually. Colleges are known for placing pressure and responsibility on students to complete tasks in order to ensure future success. Thus, students who are prone to procrastination are at a disadvantage and are likely to perform poorly compared with those who are less likely to put assignments off.

Given the widely held opinion that procrastination is a negative trait, it is ironic that few systematic studies have been conducted to examine the prevalence of chronic procrastination globally. Seeking to change this, Ferrari, O'Callaghan, and Newbegin (2005) looked at the prevalence of the "purposive delay in starting or completing tasks" in adult populations in the United States, United Kingdom, and Australia (p. 1). The authors note that the two most common forms of chronic procrastination are arousal procrastination, in which delays produce a last minute thrill, and avoidant procrastination, in which delays are related to fears of failure or success. After administering Lay's General Procrastination Scale (1986) and the Adult Inventory of Procrastination (1989) to adult volunteers in the three countries, the investigators found that there were no

significant sex differences in procrastination between countries. Although adults in the U.K. reported higher rates of avoidant and arousal procrastination than those in the U.S. and Australia, when statistically separated into “pure” types (to make them mutually exclusive) there was no significant difference between countries. In fact, a consistent 11.5% of adults were identified as arousal procrastinators and 9.9% of adults were avoidant procrastinators. Results imply that chronic procrastination is a common feature within “westernized, individualistic, and English-speaking countries” and poses a significant problem for those people who exhibit certain behavioral tendencies (p. 5).

Research on procrastination as a form of self-regulatory failure has opened up many different inquiries into procrastination’s possible causes and effects. Based on his meta-analysis and theoretical review of procrastination, Steel (2007) noted strong and consistent predictors of procrastination, including “task aversiveness, task delay, self-efficacy, and impulsiveness as well as conscientiousness and its facets of self-control, distractibility, organization, and achievement motivation” (p. 65). Looking at over 690 correlational and experimental studies from various computer databases and print sources that focused on procrastination, Steel aimed to conceptually establish the nature of procrastination, to look at the causes and correlates of procrastination, and to integrate these results into a model to explain self-regulatory, or self-monitoring behavior. The meta-analytic results showed that specific aspects of a task’s nature, such as timing of rewards and punishments and aversiveness, and individual differences, such as impulsiveness, organization, and achievement motivation, played a role in the likelihood of procrastination on a task. Neuroticism, rebelliousness, and sensation seeking, however, showed only a weak correlation with procrastination. The author includes

several ideas for interventions that could be employed to reduce task delay through the setting of realistic goals, controlling environmental cues, and increasing efficacy expectations for individuals.

Although procrastination can lead to negative mental and physical health outcomes, a popular belief persists that many people often do their best work under the pressure of an imminent deadline. Tice and Baumeister (1997) explored this attitude by conducting research on the effects of procrastination on an individual's quality of performance, stress, and illness. In two longitudinal studies consisting of approximately 100 student volunteers, the researchers first assessed the students' procrastination level through the Lay General Procrastination Scale after giving them an assignment with a deadline later in the semester. Subjects were given an option for an automatic extension if the deadline could not be met. Subjects also completed self-reports of their stress and illness over the next 30 days to measure their overall well being. When the assignment was due at the end of the semester, the date the paper was received was recorded. Among their results, Tice and Baumeister found that procrastinators turned in their papers significantly later and received much lower grades than nonprocrastinators, but conversely had fewer symptoms of illness and less stress. Their second study aimed to investigate this discrepancy by looking at the health of student procrastinators at the end of the semester as opposed to the beginning when the first study measured health. The relationship observed in the first study was reversed, with procrastinators reporting more symptoms, more stress, and more visits to health care professionals. Although procrastination could have short-term benefits to health, Tice and Baumeister's research

demonstrates that in the long run, procrastinators experience a greater negative impact on their academic ventures and overall health than nonprocrastinators.

Another study on the negative impact that postponement of tasks has on an individual's life, conducted by Spada, Hiou, and Nikcevic (2006) examined the relationships between metacognitions and negative emotions and their role in the maintenance of procrastination. For the purposes of the study metacognition was defined as "the beliefs, psychological structures, events, and processes that are implicated in the control, modification, and interpretation of thinking itself" (Spada, Hiou, & Nikcevic, 2006, p. 320). The authors wanted to specifically investigate whether metacognition ("thinking about thinking") was linked to procrastination because procrastination can be viewed as a maladaptive metacognitive control strategy to regulate negative cognitions. The study involved administering multiple instruments, including two procrastination scales, a metacognition questionnaire, and measurements for worry and anxiety, to a group of student volunteers. Statistical analysis of the data indicated that two aspects of metacognition were predictive of procrastination independent of any negative emotions: beliefs about cognitive confidence and positive beliefs about worry. An example of a belief about cognitive confidence that could lead to procrastination would be thinking that one does not have the intellectual abilities to correctly finish an assignment. The outcomes of this study indicate that metacognition can be a contributing factor in procrastination apart from negative emotions like depression or anxiety. This means that individuals who negatively view their cognitive confidence may doubt their abilities and feel less motivated to complete a task, resulting in procrastination.

The concept of time is closely connected with procrastination due to its frequent association with delay and time mismanagement. Research by Jackson, Fritch, Nagasaka, and Pope (2003) demonstrated that perceptions of the past, present, and future are affected and influenced by procrastination. The investigators gave 147 college undergraduates a procrastination scale and a time perspective inventory that measured participants' values and beliefs about temporal experiences from the past, present, and future. A reduced focus on the future predicted high levels of procrastination in the research subjects. Also, individuals who viewed past events negatively and present situations fatalistically were more likely to procrastinate. The authors suggest that the lack of focus on future events supported the explanation of procrastination as a failure of self-regulation and as a desire for quick rewards in the short term. The study's results indicate that, independent of negative affect (mood), individuals with high levels of procrastination have difficulty structuring their time and see their use of time less personally meaningful than nonprocrastinators. In essence, procrastinators tend to believe there is little incentive to complete tasks that have only a small relevance or meaning for one's identity. The negative views procrastinators have toward past and present situations combined with wary attitudes about the future could result in the inability to plan ahead, which is commonly associated with procrastinatory behavior.

Procrastination and its detrimental impacts on an individual's life are particularly associated with the high demands and stress of the college academic environment. An overwhelming number of students report procrastination on tasks to such a degree that they experience great anxiety (Rothblum, Solomon, & Murakami 1986). Numerous studies have examined academic procrastination in order to better ascertain what factors

contribute to delay of tasks. One of these studies by Tan, Ang, Klassen, Lay, Wong, Huan, and Wan (2008) examined academic procrastination in 226 undergraduates in Singapore by looking at correlates of procrastination and students' grade goals. The researchers looked at motivation variables, such as self-efficacy and self-regulated learning, to see how these factors would affect students' levels of procrastination and attitudes toward academic tasks. Self-efficacy is associated with setting appropriate goals for a behavior, displaying goal-directed strategies, and using self-regulative efforts, traits usually lacking in chronic procrastinators. Previous studies (e.g. Steel, 2007) looked at procrastination as a self-regulatory failure, but did not explore individuals' expectations. Recognizing the highly competitive academic environment that many Asian students face, the authors of the study wanted to research this academic problem from a cultural context. Students were administered several instruments related to procrastination, self-efficacy, academic expectations, and test anxiety and were also asked to write their expected grade for the course at the end of the year. Data analysis revealed that "self-efficacy for self-regulated learning was strongly and negatively related to procrastination," meaning the lower a person's self-efficacy, the more likely they are to procrastinate (p. 141). Additionally, those rated low in self-efficacy for self-regulated learning had lower expectations for doing well in the class. Implications of this research indicate that students who struggle with procrastination would benefit from developing more self-efficacious behaviors to improve learning habits and increase their expectations of academic success.

Extending this research on self-regulation, Digdon and Howell (2008) studied the relationship between college students' "eveningness" preferences, which is the tendency

to prefer later bed times and perform at a higher function later in the day than those who prefer the morning, and difficulties in self-regulation. Self-regulation is the processes by which an individual exercises control over his/her inner functions and states, which includes self-control and avoidance of procrastination. Previous research indicated that evening types are more likely to have irregular social and sleep schedules, resulting in lower self-control to complete tasks and possibly, as Digdon and Howell hypothesized, more procrastination. The morningness/eveningness preference was measured for each participant in the study along with scales for self-control and procrastination. The researchers found a significant correlation between eveningness and poor self-regulation even after controlling for age. Findings from this study reveal that individuals with an evening preference exhibit lower self-regulation, meaning they feel less self-control and are more likely to procrastinate because they feel little internal control over certain tasks.

Schraw, Wadkins, and Olafson (2007) explored the positive and negative effects of academic procrastination by conducting a grounded theory study of procrastination. Grounded theory is a method of data collection in which subjects' experiences are used to create, describe, and validate the theory, which results in a paradigm model. In this study, university students were interviewed about academic procrastination in four different stages and data was collected on their responses to questions about antecedents of procrastination, definitions of procrastination, conditions that affect procrastination, coping strategies, and consequences. The paradigm model that resulted from the research showed that students attributed procrastination to three kinds of antecedents: characteristics of the self, the teacher, or the task. The model also shows that students

use cognitive and affective coping strategies, such as protective self-talk or redistributing class work, to deal with the negative effects of procrastination.

Research aimed at understanding how individuals' feelings of control relate to procrastination provides another perspective on reasons behind task delay. Research completed by Deniz, Tras, and Aydogan (2009) sought relationships between academic procrastination, locus of control, and emotional intelligence. Locus of control is the extent to which an individual perceives a situation as controlled by his or her own efforts or externally controlled by outside forces. Emotional intelligence refers to a person's ability to understand, feel, and guide one's own or others' emotion (Deniz, 2009). The researchers stated that those who exhibit emotional intelligence skills, such as control over stress and interpersonal relations, are better at time management and dealing with hindrances. The study involved 435 college students who were administered scales measuring emotional intelligence, academic procrastination, and locus of control. A significant negative relationship was discovered between academic procrastination and four of the five subscales of emotional intelligence: intrapersonal, adaptation, coping with stress, and general mood. Adaptation and mood were found to be predictive factors of locus of control, meaning those with an external locus of control have a more negative mood and are less able to adapt to challenging or difficult events. This study demonstrates that individuals, especially college students, who display an external locus of control toward their academic tasks are more likely to procrastinate. They could also display negative moods, such as anxiety or depression that interfere with their ability to get an assignment done on time.

Explanatory style is a habitual mode of thinking that individuals employ to explain the causes of bad or good things or occurrences in their life. Explanatory, or attributional, style has three dimensions against which a situation is measured. Internality versus externality explains whether a cause points to the self or points to other people in the outside world. Stability versus instability explains if something is long lasting or transient. Globality versus specificity demonstrates whether the cause affects a large range of activities or is highly focused on that particular event. A negative explanatory style, one that is internal, stable, and global, toward stressful or bad life events is most often associated with depression and hopelessness in people (Seligman et al., 1984). However, explanatory style can also pertain to the different ways students assess their ability to complete school-related tasks (Peterson & Barrett, 1987). Individuals who feel hopelessness are likely to use maladaptive coping strategies, such as procrastination, to deal with difficult circumstances (Henry, 2005).

The origins of the concept of explanatory style begin with research conducted on learned helplessness in animals. Martin Seligman developed and tested the theory of learned helplessness by subjecting groups of dogs to electric shock (Seligman & Maier, 1967). One group was able to escape the pain of the shock by pressing a lever while the other group was not able to escape, thus learning that their actions had no effect on whether or not they received a shock. These dogs were then placed in a box separated by a low partition, which, if they jumped over it, allowed them to escape shock. The dogs that had previously been tested in the inescapable condition were passive and simply lay down, not even attempting to escape presumably because they had learned to be helpless. Many of the symptoms associated with clinical depression in humans were observed in

these helpless dogs, including apathy, loss of interest, and problems with eating and sleeping. Learned helplessness came to be defined as a condition in which a person or animal experiences a harmful or unpleasant event and learns to behave helplessly, even when given the opportunity to help itself (Abramson, Seligman, & Teasdale, 1978).

Observing a connection between learned helplessness and adverse life events, Abramson (1978) formulated an attribution theory to understand people's varying reactions to adverse situations and the way that they explained the causes of these situations.

Subsequent research by Seligman (1986) found that individuals displaying a pessimistic, or negative, explanatory/ attributional style viewed bad events as permanent (stable), personal (internal), and pervasive (global). Numerous experiments and studies have been conducted since to explore the wide range of positive and negative explanations exhibited by people experiencing different types of events (e.g. Cole, 2008; Burns, 1989; Seligman, 1986).

Seligman, Kaslow, Alloy, Peterson, Tanenbaum, & Abramson (1984) reformulated helplessness theory and proposed that a negative attributional style often goes along with and even predisposes children to depressive symptoms. Their study used 96 children between the ages of eight and thirteen and asked them to complete an attributional style questionnaire and depression inventory six months apart. Results showed that children who ascribed distressing events to internal, stable, and global causes were more likely to have depressive symptoms than children who explained with external, unstable, and specific causes. The depressive explanatory style displayed by these children was also predictive of depressive symptoms six months later. Thus, a depressive or negative explanatory style could be considered a risk factor for depression.

The emergence of attribution style is especially interesting to investigators wishing to ascertain its relation to depression and its application to young populations. Cole et al. (2008) looked at negative attributional style and its role as a cognitive diathesis for depression through a longitudinal study of adolescents and children. A cognitive diathesis for depression refers to a pre-existing and characteristic way of thinking that increases risk for depression when it interacts with a stressful experience, such as a negative life event. Assessing attributional style in children can be difficult because younger children have difficulty in understanding and applying the three dimensions of attributional style to negative occurrences, and attributions can evolve throughout childhood and adolescence. Cole and his colleagues sought to determine when attributional style becomes a consistent measure in predicting an individual's vulnerability to depression, which has important implications in the prevention and treatment of depression in youth. Subjects in this study were children in grades 2 through 9 attending seven different schools in a metropolitan area (Cole et al., 2008). The participants were given two measures of depressive symptoms, a measure of negative life events, and an attributional style questionnaire. They were then evaluated once a year for four years. The researchers found that attributional style did not serve as a cognitive diathesis for depression between grades 2-8, but it did between grades 8-9. This suggests that younger children's attributions change before they enter adolescence. The findings indicate that older adolescents may have a more complex thought process when dealing with negative events, reflecting their capacity to discern stable personal abilities and to generalize over time. This has profound implications for depression, anxiety, and other psychological disorders as individuals age and are exposed to more adverse life events.

Another longitudinal study of learned helplessness in children conducted by Nolen-Hoeksema, Girgus, and Seligman (1986) tested whether children who displayed a negative explanatory style, but were not currently depressed, were more likely to become depressed over time than children who did not have this explanatory style. In addition, the authors wanted to examine the relationship between explanatory style and achievement-related behaviors in school to see if a negative style was predictive of more achievement problems and helplessness in children. A sample of 168 children were given the Child Depression Inventory (CDI), Children's Attributional Style Questionnaire (CASQ), and Life Events Questionnaire (LEQ) five separate times over the course of a year and their achievement was measured by a standardized test and a teacher's evaluation on a student behavior checklist. The researchers found that a negative explanatory style was a significant predictor of depression at subsequent testing periods, especially when combined with the experience of bad life events, meaning that those children exhibiting a pessimistic style were more likely to show higher levels of depression as the year progressed. Results also indicated that lower achievement and more helpless behaviors were related to a negative explanatory style. Thus, depressed children viewed problems in school as caused by internal, stable, and global factors and showed more passivity and helplessness when faced with difficulties.

Hilsman and Garber (1995) extended the cognitive diathesis-stress model of depression in children, using a short-term design in their study to look at the immediate effects an academic stressor would have and whether this would produce depressive symptoms. The authors hypothesized that a negative explanatory style would interact with this stressor, defined as receiving less than acceptable grades on a report card, to

predict depressed mood. They were also interested in measuring if this mood would persist several days later. Using 439 fifth and sixth graders, Hilsman and Garber administered the CASQ and a depression inventory and asked each student to define the lowest grade they would consider acceptable in six subjects. After report cards were distributed the following week, the researchers measured students' depression the next day and five days later. Analysis of the data results suggested that students with a negative explanatory style and who reported less control over academic competence were more likely to show depressive symptoms after receiving unacceptable grades than students with a positive explanatory style. Also, a negative explanatory style interacted with the academic stressor to predict depressive symptoms five days after the initial stressor was presented.

As the previously mentioned studies have demonstrated, a negative explanatory style is significantly correlated with depressive symptoms, poor academic performance, and more passive and maladaptive behaviors in students. Other studies have explored the effects of explanatory style in other dimensions of social life outside of educational institutions, such as the workplace and healthcare. Seligman and Schulman (1986) studied explanatory style as a predictor of productivity and quitting among life insurance agents in order to observe the pessimistic explanatory style's impact in the workplace, especially in a job characterized by high turnover and repeated failures. Productivity was calculated as the commission earned by the agent and survival indicated if the agent had not quit after a certain amount of time. The investigators believed that individuals with a negative explanatory style would "initiate fewer sales attempts, be less persistent, produce less, and quit more frequently" than those with a positive explanatory style (p.

833). In the first study, after a group of agents was given the ASQ, Seligman and Schulman discovered that those with a pessimistic explanatory style did in fact sell less insurance than agents with an optimistic style. Optimistic agents sold 37% more compared with their pessimistic coworkers. In the second study, Seligman and Schulman (1986) collected information on which agents remained with the insurance company at the end of their first year. A positive explanatory style was found to predict higher rates of survival in the first year and greater productivity in the second half of the year than agents with a negative style. After failure, individuals with a negative explanatory style are more likely to show less persistence and have poorer performances on tasks.

Henry (2005) found that stresses in the workplace are likely to be perceived differently by those with positive and negative explanatory styles. Henry conducted interviews with two different groups of workers, one professional and the other manual, and assessed how they explained stressful events. The interviews consisted mostly of open-ended questions about self-concept, life history, and future expectations. Transcripts of the interviews were analyzed for explanatory style using the Content Analysis of Verbatim Explanations (CAVE) technique in which bad events explained by the workers were scored on a scale that assessed the most internal, stable, and global explanations. Results showed that manual workers were more likely to describe negative circumstances as being internal, caused by the individual; stable, happening more than one time; and global, occurring in other situations. Professional workers were more likely to explain positive events as unstable and specific. The findings of this study indicate that manual workers were more likely to use a negative explanatory style for and

react differently to bad events, which implicates future possibilities of hopelessness and poor coping responses.

Peterson, Seligman, and Vaillant (1988) extended the effects of explanatory style to assess the overall health of individuals. A 35-year longitudinal study of 99 graduates of Harvard University was conducted based on a questionnaire they filled out at age 25 and later health examinations given by physicians. Using the CAVE technique to assess these open-ended questionnaires for statements that explained bad events as internal, stable, and global, the researchers believed that these individuals would have worse health than the graduates who used external, unstable, and specific explanations. The research involved data, including physical exams and personality and intelligence tests, from the Study of Adult Development, which used Harvard males from the classes of 1942 through 1944. Men who had a negative explanatory style were found to be less healthy later in life even when initial physical and emotional health was controlled. For example, those who were deceased by age 55 placed more blame on themselves for failure and believed there was little they could do to change unfavorable situations. As evidenced by this study, psychological factors significantly impact and predispose physical health and illness, providing another link between explanatory style and its influence on helplessness.

Another study by Burns and Seligman (1989) explored explanatory style across the life span in order to test the stability or persistence of explanatory style over time. The study involved analyzing writing samples from an individual approximately 50 years apart using the CAVE technique. Subjects over the age of 55 were asked to bring letters or diaries from earlier in their life and then to complete a survey that asked questions

about their present interests and attitudes. Independent judges rated events described in the writing samples and surveys along the three dimensions used to assess explanatory style, producing a composite score. Over an average time period of 52 years, explanatory style for negative events was found to be reasonably stable. Therefore, over the course of many years, explanations for the causes of bad events remain consistent. This result suggests that individuals who display a negative explanatory style may be subject to its effects, such as poorer health and lower achievement, throughout their lives. The negative/pessimistic explanatory style can have serious detrimental effects on adult functioning and be a risk factor for several mental, emotional, and physical problems.

A study by Peterson and Barrett (1987) described how explanatory style can affect college academic performance. The explanatory styles of 87 freshmen at a university were tested using the Attributional Style Questionnaire along with measures of academic goals and coping ability for academic failures. After holding both initial academic ability as measured by the SAT and initial depression as measured by the Beck Depression Inventory constant, the researchers found a significant result. Students who explained bad academic events with a negative attributional style (internal, stable, and global) received lower grades. Also, these students were less likely to have specific academic goals than students who used a positive explanatory style of external, unstable, and specific causes.

Research by Rothblum, Solomon, and Murakami (1986) highlighted the connection between procrastination and explanatory style by showing how success on exams is often attributed to external and unstable factors by students. A group of university students were first measured on procrastination level then assessed on

affective, cognitive, and behavioral measures when midterm exams approached.

Affective measures generally involve an external expression of emotion, such as anxiety, while cognitive measures involve thoughts and assessments. Measures were also taken for academic delay and performance on self-paced quizzes and college grade point average. Procrastination was found to be positively correlated with delay in taking quizzes and negatively correlated with GPA. High procrastinators, especially women, were more likely to report anxiety-related symptoms and anxiety on tests. The authors of the study also found that high procrastinators had less self-control and were less likely to delay gratification.

The previously mentioned studies have all evaluated how explanatory style is affected by a person's perceptions of situations involving stress. Yet, more can be gleaned by looking at explanatory style and its relationship with procrastination in college students. Students who attribute bad situations with internal, stable, and global causes will often behave passively when confronted with academic setbacks (Peterson & Barrett, 2007). This negative explanatory style could contribute to several detrimental impacts on students' studying and learning abilities. In order to assess possible connections between explanatory style and task avoidance, the present study examined whether a particular explanatory style is more likely to be used by college students when they encounter a difficult task on which they procrastinate. The primary hypothesis was that a negative explanatory style would have a greater tendency to be used by students who procrastinate on academic tasks.

Method

Participants

The participants in this study were a convenience sample of 86 college students (18 men and 68 women) attending Carroll College during the 2010 fall semester. The age range for participants was 18 to 26 years with an average age of 19 years. Participants volunteered to be in the study from the introductory psychology course and received extra credit toward their grade for their participation. A total of 120 questionnaires were administered to the class and 100 were returned. Of these, three questionnaires were dropped from the sample because the subject was over the age of 26, which was the age limit chosen for this study to reflect a more traditional college student population. Eleven questionnaires were dropped because the subjects did not correctly complete the questionnaires for this study. In accordance with Carroll's Institutional Review Board guidelines, all participants were informed of the purpose of the study, their information was kept anonymous, and they signed a consent form authorizing their involvement. Participants were to complete the questionnaires on their own time and were required to return them five days after they were administered in order to receive credit. The participants completed the questionnaires described below.

Materials

The materials for the present study consisted of two questionnaires. The students were given the Academic Attributional Style Questionnaire (Peterson & Barrett, 1987), which originally consisted of 12 situations involving bad academic events (Appendix A). For the purpose of this study, one item from the AASQ involving students who have high enough grades to switch to a major was dropped because it was not relevant to most

students taking the survey. For each event, the participants were asked to imagine that particular event occurring, write down their reaction, and then put down a score based on a 7-point scale. Participants recorded a score from 1 (*least affected*) to 7 (*most affected*) for each cause of the event based on internality, stability, and globality. Scores were then averaged for each of these three dimensions and then for all eleven items, resulting in a composite score from 1 to 7. Scores of 4 or above indicated a negative attributional style and scores of 3 or below indicated a positive attributional style.

The other questionnaire given to the participants was the Procrastination Assessment Scale-Students (Solomon & Rothblum, 1984), which classified participants as high or low procrastinators (Appendix B). The original PASS instrument contained two parts to classify individuals as procrastinators: the first part dealt with frequency of procrastination on academic tasks and the second part assessed the degree to which this results in anxiety. The present study did not deem it necessary to include the lengthy second section of the PASS because the first section was sufficient in measuring academic procrastination from multiple areas. The first part listed six different academic tasks and respondents were asked to complete three rating scales for each of the items about the frequency of their procrastination on that task, whether their procrastination on this task posed a problem, and to what extent they wanted to decrease procrastination on this task. Answer choices range from 1(*low*) to 5(*high*). As per instructions provided by the authors of the PASS (Solomon & Rothblum, 1984), only the first two rating scales concerning frequency and problems with procrastination were calculated. The results from the six items were summed to provide a total procrastination score ranging from 12

to 60. High procrastinators were defined as those who scored a 36 or above on the scale and low procrastinators were defined as those who scored a 35 or below.

Recent research shows low levels of internal consistency for the PASS, probably because procrastination can be viewed differently by different individuals (Fischer & Corcoran, 1994). The correlation for procrastination as a problem was .26 and the correlation for reasons for procrastination was .80. The stability of the PASS is fair with a test-retest correlation of .80 for the total score. The PASS has good concurrent validity with significant correlations between the PASS and the Beck Depression Inventory, Delay Avoidance Scale, Rosenberg Self-Esteem Scale, and students' grade point averages. The AASQ uses the same format as the Attributional Style Questionnaire (ASQ) developed by Seligman and colleagues in 1982, but contains descriptions of 12 negative academic events. Research has shown that the AASQ has high internal consistency, indicating good reliability (Robinson, Shaver, & Wrightsman, 1991). The test-retest coefficient was found to be .64 and significant correlations have been discovered between the ASQ and depression, illness, and helplessness.

Procedure

During the study, participants completed the Academic Attributional Style Questionnaire (AASQ) and the Procrastination Assessment Scale-Students (PASS). Demographic information regarding age, gender, and year in school was also included in the survey. The questionnaires were handed out in a classroom setting, overseen by the head researcher, and were to be completed and returned in 5 days. Participants were told about the nature of the study, the requirements of the study, and what their consent meant by the head researcher. The questionnaires were collected by the instructor of the

introductory psychology course after five days had elapsed and returned to the researcher. The researcher gave the signed consent forms to be graded for course credit and then assessed the scores of each questionnaire as described above. Data for each subject was organized with categories for their PASS and AASQ scores, gender, and year in school. The first variable in the study was the type of explanatory style displayed by the individual as measured by the Academic Attributional Style Questionnaire (Appendix A). The other variable was the level of procrastination, high or low, as measured by the Procrastination Assessment Scale-Students (Appendix B). The null hypothesis for the study was that there is no difference in explanatory style as a function of procrastination.

Results

Data collected on the relationship between explanatory style and procrastination was analyzed by performing Pearson product-moment correlations. First, the correlation between participants' scores on both the PASS and AASQ was determined. The resulting statistic ($r=.35$, $p>.01$) indicated there was no overall significant relationship between the two variables. Scores were then separated between high and low procrastinators and a correlation was calculated for the PASS and AASQ scores of high procrastinators to test the study's hypothesis. A total of 24 out of 86 subjects (27.9%) tested as high procrastinators on the PASS. Of these, 5 out of 18 (27.8%) men and 19 out of 68 (27.9%) women scored high on procrastination. Correlating these scores with the subjects' scores on the explanatory style questionnaire, a significant positive correlation of .58 ($p<.01$) was found. The resulting correlation supported the hypothesis that a negative explanatory style would be more likely used by students who have high levels of procrastination. Figure 1 illustrates the positive linear relationship between the two

variables. The mean distribution results are given in Table 1. The relationship between high procrastination and explanatory style was found to be statistically significant and the null hypothesis was rejected. Individuals who report a high level of procrastination are more likely to display a negative explanatory style that views bad events with internal, stable, and global causes.

Discussion

The purpose of this study was to explore the relationship between academic procrastination and explanatory style in college students. The primary hypothesis was that a negative explanatory style would be displayed more by students who report high procrastination on assignments. Correlational data analysis provided support for this hypothesis. Students with a high level of procrastination had a higher group average (4.53) for negative explanatory style scores on the AASQ than students with a low level of procrastination (4.25). The data revealed that students who report a higher tendency to procrastinate on their schoolwork and are more likely to have a more negative, pessimistic explanatory style.

The results of this study share some similarities with previous research findings. Experimenters have found that students who explain bad academic events with internal, stable, and global causes are at a greater risk for poor grades (Peterson & Barrett, 1987). The present study also provides support for research indicating that high and low procrastinators use different cognitive measures for certain situations (Rothblum, Solomon, & Murakami, 1986). The results are also consistent with social psychology theories of explanatory style, in that they demonstrate that the hopelessness often associated with a negative explanatory style can lead to the perception of a lack of control

in a person's world (Seligman et al., 1984). Lack of control can often produce a reduction in motivation, resulting in procrastination. Findings from the present study, when combined with findings from earlier studies, attest to the importance of understanding academic ability and achievement in cognitive terms.

Although the results of this study support past research, the design of the experiment could be improved upon. The sample of students chosen for this study was not large or diverse enough to be generalized to the entire college student population. A convenience sample was used that supplied a large pool of participants, but did not include a wide enough range of ages/years in school or variability in gender that would accurately reflect the demographics of the average college or university. Most of the participants in the study were either freshmen or sophomores in college and between the ages of 18 and 20. Perhaps underclassmen procrastinate more because they are not used to the workload of college classes or have not established good time management skills, thus biasing the data. Thus, a comparison between upper and lower classmen could lead to a greater understanding of the influence of college year on procrastination. A further study of the topic should attempt to utilize a larger sample from various universities to determine support for the hypothesis.

Another methodological concern involves the measurement tool employed in the present study. The instruments used to assess students' levels of procrastination and explanatory style may have been too lengthy for some subjects to complete in the allotted time for the study and a shorter, more simplified assessment tool might produce better results for future studies. In addition, some inaccuracies could have resulted from participants who filled out the survey just to get it done and did not take the time to read

and fully answer the questions on the survey. Some indications of this occurred with instruments in which the subject had put down similar answers for all questions or had not completed all of the questions. Subjects could have also been motivated to quickly fill out the instruments in order to receive extra credit in the course, which could have skewed the results. Lastly, the content of the questionnaires may not have directly related to the college experiences of the subjects, so subjects may have found it difficult to respond to some of the questions or to choose between answers. While the instruments were edited for use with college students, perhaps changing the wording or elaborating on some of the questions could have produced different results.

Sample characteristics and the testing environment could have also impacted the results of the study. The study was conducted in a psychology class on a volunteer basis. Surveying other classes could have provided a different perspective and data from other classes could have been analyzed to determine whether levels of procrastination were significantly different between the sample group and other groups. Due to the fact that this study was voluntary, some subjects who have a certain explanatory style may have been more likely to participate than others and which may have affected the results. The testing environment also presents some challenges to the study because questionnaires were completed outside of a classroom, with no direct supervision from the experimenter. Most likely the instruments were completed in an informal setting with various distractions and other uncontrolled influences. The amount of time and attention spent on the survey could have been affected by this environment, resulting in less reliable responses. In addition, subjects may have not felt the need to be as honest on the questionnaire because they were not in a formal setting being observed.

How scores on the two measures of procrastination and explanatory style were calculated and classified posed another area of concern in the present study. The way in which scores were classified for the PASS between high and low procrastinators as being scores 36 and above or 35 and below was determined by looking at the original study in which the instrument appeared (Rothblum, Solomon, & Murakami, 1986). However, the categories for high and low procrastinators used for this study may not have been as precise because the instrument was altered from its original state to better fit with the constraints of this study. Also, procrastination itself can be difficult to measure through any test or survey because it can vary across time, situations, and people's perceptions of a task.

Potential confounds that were not addressed in the study included the grade point average (GPA) and initial depression of the participants and the differing roles these variables could play in procrastination. As Peterson and Barrett (1987) explained in their research, GPA and depressive symptoms are "factors that may intervene between a person's explanatory style and his or her academic performance" (p. 604). These factors could greatly impact a student's approach to school work, task completion, and overall explanatory style. Controlling for these variables in future research would allow for a more specific understanding of the relationship between academic procrastination and explanatory style. Although the correlation between high procrastination and negative explanatory style was significant, it is important to remember that this data only shows a relationship, not cause and effect. Perhaps depressive symptoms, GPA, or some other extraneous variable played a role in the results of this study. It is also difficult to say that

high procrastinators will always show a negative explanatory style because other factors can play a role.

Procrastination is an important problem to study not only because of the detrimental impacts it has on a student's academic career, but also the future troubles that can arise for individuals who delay important tasks in their jobs or personal lives. Larger issues of workplace inefficiency and relational discord could be aided by the findings of this research. Even simple phenomena, such as low grades or low class participation, could be linked to the results of this study regarding procrastination and explanatory style. Future research should evaluate the impact explanatory style has on other "failures of adaptation", such as denial or avoidance. Earlier or existing research has involved mostly explanatory style and depression, however, future studies could explore a wide variety of outcomes involving negative explanatory style and passivity. Results also imply that having a positive explanatory style will enable a student to perform tasks in a more timely and consistent manner. Various applications of this research could be used in academic settings by both teachers and students. By assessing the way they explain negative events, students could work to change their explanatory style or take a more active approach in reducing the number of tasks on which they procrastinate. Professors and instructors could apply the findings of this research by encouraging students to adopt a more optimistic style of viewing academic situations or by helping students create different strategies and ways to cope with difficult classes and assignments. Applications could also be considered for employees of large companies to increase worker productivity by changing their explanatory style.

In summary, the present study demonstrated that a negative explanatory style is associated with higher levels of procrastination. The presence of this correlation suggests that explanatory style could lead to adverse effects for a student's personal and educational goals. The results of this study offer an interesting finding that provides support for the influence of explanatory style in a person's behavior and adds to the existing research which supports the learned helplessness model previously discussed. High procrastinators are more likely to explain bad events with internal, stable, and global causes, meaning they see an academic failure as their own fault, occurring in future situations, and affecting other areas of their life. While past research (Nolen-Hoeksema, 1986; Seligman, 1986; Hilsman, 1995) has focused on the connection between explanatory style and depression, this study demonstrates that an individual's attributional style may explain other ineffective or passive behaviors. While the scope of the present study was narrow, explanatory style has potential as an explanatory variable related to a wide range of other outcomes involving passivity and presents many avenues for future research.

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Table 1

Mean Explanatory Style and Procrastination Scores on the AASQ and PASS Instruments

PASS	Mean Score on PASS	Min	Max	Mean Score on AASQ
High	40.04	36	46	4.53
Men, n=5	39.80	37	46	4.93
Women, n=19	40.11	36	46	4.43
Low	28.14	17	35	4.25
Men, n=13	28.92	17	35	3.94
Women, n=49	27.35	18	35	4.34

Note: Any participant who scored a 36 or above on the PASS instrument was considered a high procrastinator and any participant with a score of 35 or below was considered a low procrastinator.

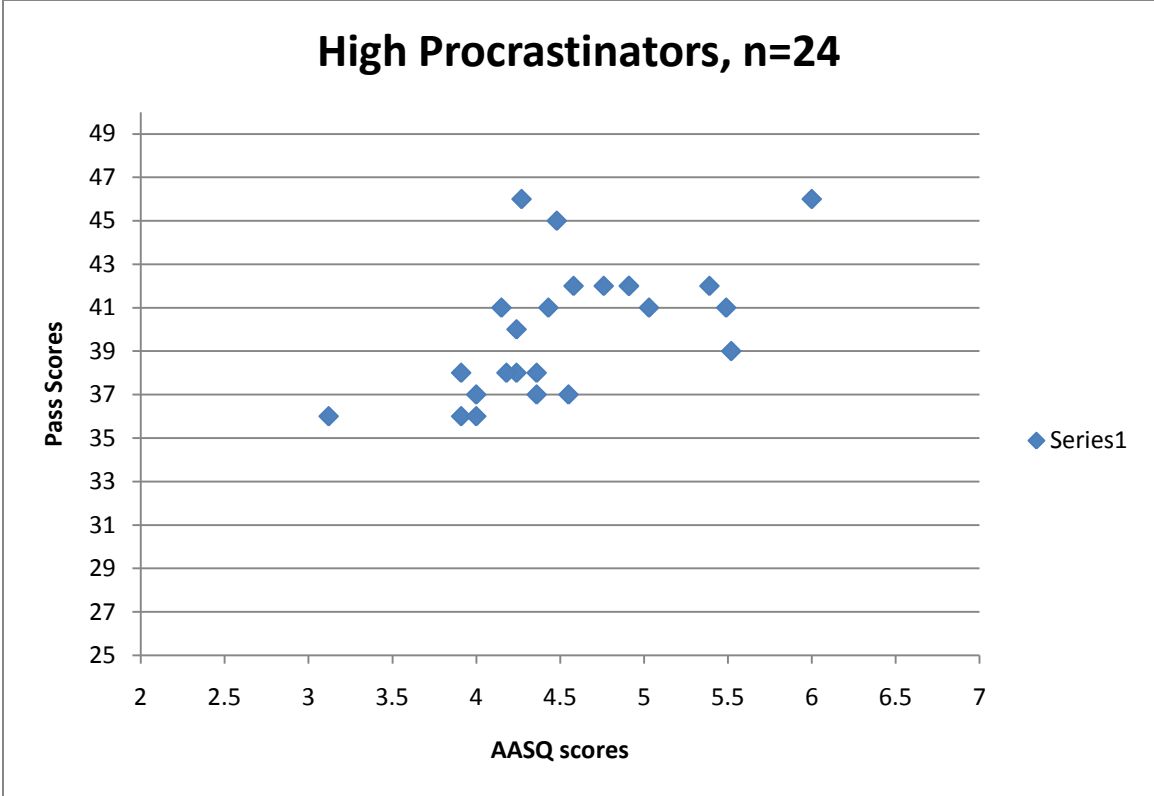


Figure 1: Students with higher levels of procrastination as measured by the PASS have a higher score on the AASQ, which translates into a negative explanatory style.

Appendix A

School Year: FR SO JR SR

Sex: M F

Age: _____

Academic Attributional Style Questionnaire

1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the one main cause for the situation if it happened to you.
3. Write down the main cause in the box provided.
4. Answer the three questions about the main cause.

1. You cannot get all the reading done that your instructor assigns.

Cause:

How likely is it that the cause you gave will continue to affect you in the future?

1	2	3	4	5	6	7
will never affect you						will continue to affect you

Is the cause you gave something that just affects this situation or does it affect other areas of your life?

1	2	3	4	5	6	7
just affects this situation						affects other areas

Is the cause you gave something you feel control over or that outside forces control?

1	2	3	4	5	6	7
complete external control						complete internal control

2. You fail a final examination.

Cause:

How likely is it that the cause you gave will continue to affect you in the future?

1	2	3	4	5	6	7
will never affect you						will continue to affect you

1 2 3 4 5 6 7
 just affects affects other
 this situation areas

Is the cause you gave something you feel control over or that outside forces control?

1 2 3 4 5 6 7
 complete external complete internal
 control control

5. You cannot solve a single problem in a set of 20 assigned as homework. Cause:

How likely is it that the cause you gave will continue to affect you in the future?

1 2 3 4 5 6 7
 will never will continue
 affect you to affect you

Is the cause you gave something that just affects this situation or does it affect other areas of your life?

1 2 3 4 5 6 7
 just affects affects other
 this situation areas

Is the cause you gave something you feel control over or that outside forces control?

1 2 3 4 5 6 7
 complete external complete internal
 control control

6. You are dropped from the university because your grades are too low. Cause:

How likely is it that the cause you gave will continue to affect you in the future?

1 2 3 4 5 6 7
 will never will continue
 affect you to affect you

Is the cause you gave something that just affects this situation or does it affect other areas of your life?

Is the cause you gave something you feel control over or that outside forces control?

1 2 3 4 5 6 7
 complete external complete internal
 control control

9. The required textbook for a course is unavailable in the school bookstore.

How likely is it that the cause you gave will continue to affect you in the future?

1 2 3 4 5 6 7
 will never will continue
 affect you to affect you

Is the cause you gave something that just affects this situation or does it affect other areas of your life?

1 2 3 4 5 6 7
 just affects affects other
 this situation areas

Is the cause you gave something you feel control over or that outside forces control?

1 2 3 4 5 6 7
 complete external complete internal
 control control

10. You get a D in a course required for your major.

How likely is it that the cause you gave will continue to affect you in the future?

1 2 3 4 5 6 7
 will never will continue
 affect you to affect you

Is the cause you gave something that just affects this situation or does it affect other areas of your life?

1 2 3 4 5 6 7
 just affects affects other
 this situation areas

Is the cause you gave something you feel control over or that outside forces control?

1 2 3 4 5 6 7
 complete external complete internal
 control control

11. You cannot understand the points a lecturer makes.

How likely is it that the cause you gave will continue to affect you in the future?

1 2 3 4 5 6 7
 will never will continue
 affect you to affect you

Is the cause you gave something that just affects this situation or does it affect other areas of your life?

1 2 3 4 5 6 7
 just affects affects other
 this situation areas

Is the cause you gave something you feel control over or that outside forces control?

1 2 3 4 5 6 7
 complete external complete internal
 control control

Appendix B

Procrastination Assessment Scale-Students

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on a 1 to 5 scale according to how often you wait until the last minute to do the activity. Then, indicate on a 1 to 5 scale the degree to which you feel procrastination on that task is a problem. Finally, indicate on a 1 to 5 scale the degree to which you would like to decrease your tendency to procrastinate on each task. Mark your answers by circling the appropriate letter below each question.

I. Writing a Term Paper

1. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
1	2	3	4	5

2. To what degree is procrastination on this task a problem for you?

Not a problem	Almost never	Sometimes	Nearly always	Always a problem
1	2	3	4	5

3. To what extent do you want to decrease your tendency to procrastinate on this task?

Don't want to decrease		Somewhat		Want to decrease
1	2	3	4	5

II. Studying for Exams

4. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
1	2	3	4	5

5. To what degree is procrastination on this task a problem for you?

Not a problem	Almost never	Sometimes	Nearly always	Always a problem
1	2	3	4	5

6. To what extent do you want to decrease your tendency to procrastinate on this task?

Don't want to decrease		Somewhat		Want to decrease
1	2	3	4	5

III. Keeping Up Weekly Reading Assignments

7. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
1	2	3	4	5

8. To what degree is procrastination on this task a problem for you?

Not a problem	Almost never	Sometimes	Nearly always	Always a problem
1	2	3	4	5

9. To what extent do you want to decrease your tendency to procrastinate on this task?

Don't want to decrease	Somewhat	Want to decrease
1	2	3
	4	5

IV. Academic Achievement Tasks: Filling Out Forms, Registering for Classes, Getting ID cards, etc.

10. To what degree do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
1	2	3	4	5

11. To what degree is procrastination on this task a problem for you?

Not a problem	Almost never	Sometimes	Nearly always	Always a problem
1	2	3	4	5

12. To what extent do you want to decrease your tendency to procrastinate on this task?

Don't want to decrease	Somewhat	Want to decrease
1	2	3
	4	5

V. Attendance Tasks: Meeting with Your Advisor, Making an Appointment with a Professor, etc.

13. To what extent do you procrastinate on this task?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
1	2	3	4	5

14. To what extent is procrastination on this task a problem for you?

Not a problem	Almost never	Sometimes	Nearly always	Always a problem
1	2	3	4	5

15. To what extent do you want to decrease your tendency to procrastinate on this task?

Don't want to decrease		Somewhat		Want to decrease
1	2	3	4	5

VI. *School Activities in General: Homework, Presentations, Going to class, etc.*

16. To what extent do you procrastinate on these activities?

Never procrastinate	Almost never	Sometimes	Nearly always	Always procrastinate
1	2	3	4	5

17. To what extent is procrastination on these activities a problem for you?

Not a problem	Almost never	Sometimes	Nearly always	Always a problem
1	2	3	4	5

18. To what extent do you want to decrease your tendency to procrastinate on these activities?

Don't want to decrease		Somewhat		Want to decrease
1	2	3	4	5