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Belief in a Just World, School Stress and Academic Success

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By

Elizabeth A. Hepworth

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Belief in a Just World, School Stress and Academic Success

Elizabeth A. Hepworth

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Abstract

Belief in a just world, a construct first introduced by Lerner (1978), has been the topic of psychological research for the past forty years (Lerner, 1965; Rubin & Peplau, 1973; Tomaka & Blascovich, 1994; Dalbert, 1999; Hafer, 2000; Furnham, 2003). Much of the research conducted on the belief in a just world focused on its cognitive use as a protective mechanism. For example, Belief in a Just World (BJW) has been positively correlated with helping behavior (Beirhoff, 2002), commitment to long range goals (Hafer, 2000), positive well-being (Dalbert, 2000), and negatively associated with stress (Takoma & Blascovich, 1994). In the present study, over 400 adolescents from grades 7th through 12th were administered measures of BJW and school stress. Further, student records were also reviewed for disciplinary actions, absenteeism, tardiness and end of the year grades in four core subject areas. Pearson product-moment correlations revealed significant positive relationships between BJW and academic performance and significant negative associations between BJW and stress. BJW was also negatively associated with disciplinary actions. Further analysis utilizing an ANOVA and Post Hoc comparisons revealed differences in BJW by grade level. Finally, a stepwise multiple regression revealed that BJW was a significant predictor of overall academic achievement along with discipline referrals, perceived stress, and absenteeism.

Belief in a Just World, School Stress and Academic Success

Lerner (1978) introduced the belief in a just world (BJW) concept in 1965 and presented the just world hypothesis as, “Individuals have a need to believe that they live in a world where people generally get what they deserve (p.1030).” He continued to state that this belief is necessary in order for an individual to face his or her environment and commit to long range goals. Empirical facts, however, indicate that BJW is an illusion, as people at times have not obtained what they deserve either favorably or unfavorably. This is to say, throughout history people have been treated unfairly both by escaping punishment, and by being rewarded for their transgressions. Although BJW is a positive illusion (by giving a sense of order and predictability), it has an adaptive function; therefore, a BJW, though false, is difficult to give up.

This cognitive schema, a mixture of reality and perceptions, allows one to remain cognitively protected in the environment. Individuals with a strong sense of a BJW view the world as being orderly and manageable. These individuals are confident that hard work will be rewarded and that pain and suffering can be avoided if one follows pre-established environmental rules (Lerner, 1997). Due to the apparent cognitive protective factor that a sense of a BJW provides, one in turn, interprets environmental situations to fit this schema, avoiding cognitive dissonance, and maintaining the belief (Lerner, 1980). In other words, when actual events do not fit one’s current belief system one experiences cognitive discomfort. However, BJW cognitions allow one to reinterpret the environmental situation in order to fit one’s belief system and thus alleviate any discomfort. In turn, the reduction of discomfort serves to reinforce one’s BJW.

Development of BJW

Lerner (1980) asserted that to some degree, a belief in a just world is “natural and inevitable (p.12).” According to Lerner we begin to foster this belief from infancy, typically by developing a sense of fairness. Cultural messages that children receive from family, school, peers, and the mass media all support the notion that people get what they deserve. Young children principally are exposed to BJW through stories. Many of the folk tales passed down from generation to generation focus on the concept of fairness (Jose, 1990). Lerner (1980) reminds us of Aesop’s fable in which the conscientious, hard working ant who worked hard to prepare for the coming of winter while the fanciful grasshopper played instead, and froze once winter arrived. That is how most children stories go. The “good guys” are equipped with the characteristics valued in society. With these characteristics they defeat the “bad guys” and are rewarded for their victory over them. The “bad guys” then suffer the punishment they “deserve.” And let us not forget Mother Goose’s “Three Little Pigs,” where practical pig who built a strong house out of brick, warded off the “big bad wolf” while his fanciful brothers were at the wolf’s mercy.

Jean Piaget (1932) explored children’s belief in imminent justice and the reasoning children make when hearing such stories. Interpreting the children’s responses to similar story plots in which a character misbehaves (e. g., steals apples from an orchard) and then experiences the misfortune of falling through a rotten bridge), Piaget concluded that children attribute chance happenings to previous behavior. Interestingly, the reasoning behind this belief changes as mental age increases. Children under the age of seven (i.e. those in preoperational thinking) typically respond that an accident is actually an automatic punishment for an earlier misdeed, however, these same children

acknowledge that the accident was likely to occur regardless of the misdeed. At this stage, the child makes this contradiction but does not recognize it and sees no need to correct it. Piaget interpreted this to mean that moral causality or a belief in imminent justice overrides physical chance. Children under the age of seven see these events as being regulated by an all knowing natural force guided by morals rather than mechanical laws. In contrast, fewer older children (those in concrete operational thinking) attribute the chance happening to prior misdeeds. However, those older children that concede that the chance mishappening may serve as punishment for the prior misbehavior do not infer an intermediate causal link. These children are more willing to accept that the mishappening occurred by chance.

Jose (1990) conducted a study in which first, third, and fifth graders were read similar stories that consisted of plots leading to different outcomes for the characters. Expanding on Piaget's (1932) earlier work, he altered stories to elicit imminent justice responses in both negative and positive situations. For example, in one story a boy might steal apples and then fall through a rotten bridge. In another story the boy helped the farmer to harvest his apples and later was spontaneously rewarded. Using reasoning consistent with BJW, children in all the age groups attributed positive outcomes to good behaviors and negative outcomes to negative behaviors. When the stories did not allow for such attributions to be made, the children judged them to be unfair. For example, if the boy helped the farmer to harvest apples, but then fell through the rotten bridge, afterwards, children rated this story as unfair. In addition, Jose made sure to demonstrate that the children were able to understand event causality by inserting stories that were clearly causal and asking participants to describe the relationship, which 99% of them

did. Jose (1990) concluded that the imminent causality explanations of the children represent a rudimentary development of the BJW construct. At this point in their development, children begin to develop a mental schema in which plot outcomes systematically follow the behavior of the character.

As children interact more and more with their social environment they start to make sense of environmental happenings in the same manner that they had previously done with the story. Unfortunate events are attributed to one's own misbehavior and instances of good luck are attributed to good behavior. Individuals generalize outcomes in which these rules have applied to other situations (Lerner, 1980). As one sees suffering and reinforcement, one attributes the state of events to behaviors consistent with "rules." The cold street person must be so because of laziness, just like Aesop's grasshopper. Through social learning, the individual adopts societal norms and values, increasing behaviors that are consistent with them, with the intention of being rewarded (Lerner, 1980). If I work hard I will never be cold but instead will enjoy warmth and prosperity as did the ant. Once secure in this system, one can commit to planning long-range goals (Hafer, 2000). This cognitive schema, emerging in childhood, is maintained into the adult years.

All societies have norms and values by which citizens are guided. After years of encountering these values in story, religion, technology (e.g. radio, television, internet), and by other members of the community both at home and in school, these values form part of the individual's personal belief system (Lerner, 1980). Once behavior and attributes consistent with these values are reinforced by other members of society, they become ingrained in adult citizens (Lerner, 1980). In a study measuring personality traits

and values among college students and professionals, values such as, conformity, security and conscientiousness were all positively related to BJW (Wolfradt & Dalbert, 2003). That is, individuals who have a strong sense of BJW, value and display characteristics upheld by societal “rules” that enable growth in a stable environment. Although some values may seem to conflict, such as conformity with independence, it can be seen that the values observed in the Wolfradt and Dalbert study are generally viewed as socially acceptable. Thus, conformity is seen as “being a team player”, security as “safety”, and conscientiousness as “respect” and “responsibility”. A “good citizen” displays these values to some degree.

Maintenance of BJW

In order to feel safe in one’s environment, one firmly holds on to beliefs in order to feel secure or reassured that specific behaviors will eventually lead to specific outcomes; that is, work hard and play by the rules and one will be rewarded. Much of the early research done on BJW, therefore, concentrated on victim derogation (Furnham, 2000). In other words, when one’s BJW is threatened, one experiences cognitive dissonance (Lerner, 1980). This is the case when seemingly innocent individuals experience misfortune (Hafer, 2000), such as by “being in the wrong place at the wrong time”. Victim derogation allows individuals with a strong sense of a BJW to restore order without the threat of being susceptible to the same fate. For example, in a court case a woman was raped walking in the town park. A female juror with a strong sense of a BJW does not want to see that woman as being completely innocent because that would mean she too would be at risk of being raped in the park. Instead, in order to maintain her own feeling of safety in the environment she is likely to think of reasons why that

woman deserved what she got, such as her clothing, her family's reputation or her foolishness for walking in the park alone at night. Victims of crime, disease and poverty, then, must deserve what they get because of their behavior and attributes. If we continue to do what is right we will be safe from unforeseen misfortune (Lerner & Miller, 1978).

Individuals with a greater held BJW experience more distress when witnessing unfair outcomes for victims (Lupfer, Doan, & Houston, 1998). Lupfer et al. measured stress reactions of both weak and strong believers in a just world. Not only did strong believers experience more distress when hearing unfair vignettes, but distress decreased when they were given the opportunity to make attributional analysis. Hafer (2000), as well, tested the extent to which BJW is threatened by innocent victims. University students watched a videotaped news story about a young man who was assaulted and robbed while traveling. After watching the video, participants completed a stroop task that had been modified to include words related to justice. Significant interference on the stroop task was measured when justice related words appeared. Questionnaires completed after the stroop task demonstrated that the participants with more interference dissociated themselves more from the victim and were more likely to blame the victim. These participants scored higher on items blaming the victim's behavior or personal attributes for subsequent events.

This is not to say that BJW only encourages unsympathetic responses to victims. In contrast it also motivates good will toward victims. When victims are seen as undeserving of their negative fate, a BJW motivates us to step in and restore order (Bierhoff, 2002). For instance, in the previously used example of rape, the female juror with a strong sense of BJW might not derogate the victim but instead would award her a

large financial compensation for her suffering. If the woman was viewed as not deserving to be raped than she must be paid back in some way to even out the circumstances and maintain order. Innocent victims are viewed as deserving of compensation (Furnham, 2000). Those who believe that the world is just, “play by the rules of the game,” and act in a manner consistent with social prescriptions (Bierhoff). BJW inspires social responsibility and helping behavior.

Mental Health Benefits

Belief in a just world is also a protective factor in that it acts as a coping mechanism (Furnham, 2002). Some victims of misfortune come through their difficult situations with overall better mental health when they have a strong sense of a BJW. This is the case with victims of crimes, children with disabilities and unemployed adults. These victims spend less time “ruminating about the question, ‘Why me?’” and suffer less of the negative psychological consequences of doing so (Furnham). In addition, BJW has been demonstrated to act as a mediator against anger (Dalbert, 2002.) In the presence of events that typically evoke anger, individuals with a high degree of a BJW reinterpret these events to fit this framework, which leads to modified responses. For example, someone who has just been robbed would typically experience a great amount of anger toward the assailant. However, if the victim has a strong BJW, they are likely to follow the robbery with thoughts such as, “The police will make things right,” or “To avoid this in the future I won’t wear jewelry in this neighborhood.” With these thoughts the anger toward the assailant is likely to dissipate and the victim’s response will have been altered by a BJW. Also, BJW was positively correlated with resilience in studies conducted with widows (Bonanno *et al.*, 2002) and unemployed adolescents (Dzuka &

Dalbert, 2002). The stronger the BJW a newly widowed individual had, she also had fewer signs of grief and depression. The stronger the BJW an unemployed adolescent had the higher she rated her positive mood and life satisfaction.

Research on BJW has also investigated differences between a general BJW to that of a person specific BJW; that is, people believe that the world is more just for them than it is for others (Begue & Bastounis, 2003; Dzuka & Dalbert, 2002). The mental health benefits associated with BJW are more strongly correlated with a distinct BJW for self as opposed to the general BJW for others (Begue & Bastounis, 2003; Dzuka & Dalbert, 2002). Adolescents' resilience during periods of personal unemployment correlated significantly higher with a personal BJW as opposed to a general BJW.

Dalbert (1999) asserts that a personal BJW is more important to mental health and coping than is a general BJW. She found that people have a stronger personal BJW than a general belief. In addition, Dalbert found that positive mood, life satisfaction, and self-esteem are all positively correlated with a personal BJW. In contrast, when controlling for a personal BJW, a general BJW did not independently contribute to mental health. Dalbert also found that self-esteem is reduced by behaving unfairly in a personally just world. Participants who described their own behavior as unfair had lower BJW than those who described their behavior as fair. These findings follow those of Lipkus, Dalbert and Siegler (1996) in which two experiments using college students as participants, demonstrated that belief in a just world was positively correlated with life satisfaction. Stress and depression were negatively correlated with BJW; however, when personality variables such as extraversion, agreeableness, openness, conscientiousness, and neuroticism were controlled for this relationship was weakened.

Hafer and Corey's (1999) results support these findings and lend additional evidence for the protective nature of a BJW. When comparing reactions to exam grades, strong believers in a belief in a just world were more likely to make internal attributions for low grades. That is, they attributed their lack of success to things such as staying up too late, not studying enough or reading the wrong material, rather than to external factors, such as an unfair test or professor favoritism. In turn, BJW was positively correlated with positive emotion. Participants who have a strong BJW and make internal attributes for lack of success maintain their belief that the environment is stable and orderly, with control belonging to them. Thus, it seems that these cognitions allow them to experience more positive emotion than those who do not.

Although over decades, BJW has been speculated to reduce stress, this finding was only confirmed experimentally until rather recently. Tomaka and Blascovich (1994) hypothesized that because BJW contributes to the perception that hard work and effort will be rewarded, people holding this belief view difficult tasks as challenges rather than stressors.

Tomaka and Blascovich (1994) measured participants' cognitive, autonomic, and behavioral responses to stress, as well as their BJW. The authors then had them complete a serial math task. Results indicated that those participants with a stronger BJW reported the task as more of a challenge than as a threat both pre and post completion. Autonomic recording also supported these reports. The autonomic responses of participants with a strong sense of a BJW were consistent with being faced with a challenge. Those participants with a weak sense of a BJW showed autonomic responses consistent with threat. In addition, participants with high scores on the BJW scale attempted more and

successfully completed more arithmetic problems than did those participants with low BJW scale scores. Based on this study, one can conclude that BJW does in fact serve as a buffer against stress. In the case of student reaction to grades, those students who have a higher BJW may interpret a poor grade as a challenge to be met rather than a threat (Hafer & Correy, 1999). This would explain why these students experienced less negative emotion in reaction to their grades.

Academic Enabler

Despite all of the research on belief in a just world very little research has been conducted with BJW and children or adolescents. Dalbert and Maes (2002) conducted two studies in Germany, correlating BJW positively with academic success, fairness, and subjective well being and negatively with school stress. Dalbert and Maes use these previous findings in hypothesizing that BJW will serve as an academic enabler.

Because individuals with a strong BJW believe that one gets what one deserves they are motivated to work hard (Hafer, 2000). Knowing this it can be hypothesized that students with a strong BJW will be more successful academically. These students will more readily commit to the long-range goal of receiving good grades. This pattern of behavior will be repeated as good grades reinforce one's BJW and strengthen the motivation to work hard. Dalbert and Maes (2002) tested this hypothesis using both a personal BJW scale as well as a scale measuring BJW specifically at school. Scores on these scales were then correlated with the grades students self reported for three core subjects, German, English and mathematics. The obtained correlations were as hypothesized, students with a strong BJW had higher grades than those students with a lower BJW.

Dalbert and Maes (2002) also studied the internal factors known to be associated with BJW as they relate to school. Individuals with a strong BJW view situations as challenges to be met rather than as threats. This is the case in the study conducted by Tomaka and Blascovich (1994) study where participants were required to complete serial mathematical calculations. In addition students who are faced with unfairness at school are likely to reinterpret the situation to fit their BJW reducing negative emotion (Lipkus, Dalbert and Siegler, 1996). It was therefore hypothesized that students with a strong BJW would experience less school stress. Stress was measured by asking students two questions about stress they might experience at school. As was expected, those with a strong belief in a just world experience less stress in school.

Current Study

While Dalbert and Maes's (2002) study contributes significant information about BJW as it relates to school, it stands alone. Due to differences in the education systems between nations, one might expect variations in the impact of BJW to exist. For example, the education system in Germany is vocationally centered with the vast majority of students completing vocational training rather than college preparatory classes in high school (Petersen, Leffert & Hurrelmann, 1993). In contrast, the focus of high school in the United States is college preparation with a relatively small number of students attending vocational schools (Petersen et al.). In addition, schools in the United States are more comprehensive in that they offer a multitude of extracurricular activities and social services. These services are virtually absent in German schools, and are provided instead by the community (Petersen et al.). Again, whether or not these differences effect BJW is unknown.

School safety, a construct that is gaining relevance in the schools, also varies between the United States and Germany. Due to increasing violent and deadly attacks at schools, schools in the United States have made school safety an issue with school security at the center (Bowman, 2002). While these violent occurrences are not completely absent in German schools, they are rare possibly due to limited access to guns (Bowman). At this time, it is unclear whether the differences between the two educational systems impact students' belief systems, specifically BJW.

Although Dalbert and Maes (2002) have shown that the BJW construct works as an academic enabler, there are several limitations to their study that threaten the generalizability of their study. For example, the vast differences in the educational system in place in Germany versus that in the U. S. Further, questions arise when looking at some of the specific measures used by Dalbert and Maes. Although their stress measure has face validity, it consists of only two items that are absent of statistical validity. Likewise, accepting self reported grades as the sole measure of academic achievement lacks sufficient validity. Thus, the relationship that Dalbert and Maes found between BJW and school stress as well as academic achievement may be due primarily to a measurement artifact rather than relationships between constructs. Therefore, the purpose of this study is to replicate the Dalbert and Maes's study with a U.S. sample of adolescent students using psychometrically sound measures of school stress and actual academic performance data rather than self reports of academic success.

Method

Participants

Students enrolled in grades seven through twelve at a western New York State Junior/Senior High School were eligible to serve as participants in the current study. The suburban district served primarily working and middle class students. The student body consisted of approximately ninety-one percent Caucasian, seven percent African American, and two percent Hispanic and Asian. Survey packets were made for all students assigned to each of the school's homerooms ($n = 531$); however due to absenteeism, only 457 surveys were distributed on the day of the study, of which 417 were completed (approximately an 86 percent completion rate).

Measures

Personal Belief in a Just World. Personal belief in a just world was measured using Dalbert's (1999) scale (*See Appendix A*). The scale consists of seven items, each of which is rated on a six point Likert-type scale ranging from strongly disagree (1) to strongly agree (6). Internal consistency coefficients have been reported as $r = .79$.

School Stress. School stress was measured using items from the Children's Version of *Student Stress Inventory* (Alban Metcalfe, Dobson, Cook & Michaud, 1982). The authors report two distinct school stress factors, *Evaluation* and *Pupils' perspectives on schooling* items from both subscales were used in this study. Internal reliability and validity as reported by Metcalfe to be satisfactory for each factor (Metcalfe et al.). Items were reworded and rated on the same six point Likert scale used for a personal belief in a just world in order to maintain the survey structure. (*See Appendix B*).

Procedure

School stress and BJW measures were administered along with other measures as part of a larger study. Students not present that day were excluded from the study.

Homeroom teachers were instructed to handout questionnaire packets labeled with an identification number. Students were encouraged to complete the packet honestly and were reassured that the information they provided would remain anonymous, identifiable only by a number. Students were also told that their participation was voluntary and that they did not have to complete the surveys if they did not want to. Students were told that they could begin the packet with any page and to leave any unfinished items blank at the end of the homeroom period. While the questionnaire was being completed, research assistants traveled among classrooms reiterating the original announcement and answering any questions.

The school provided year-end academic grades, discipline records and attendance records. Grades in English, social studies, science and math were used, although all students were not enrolled in all four subjects each year. That is, while 100% of seventh graders were enrolled in math, only 71% of participating seniors were taking math their senior year. Frequencies of unexcused absences and tardiness for that year were calculated. Various disciplinary measures utilized by the school were coded for severity and tallied for frequency yielding an overall discipline score.

Statistical Analysis

Data was entered into SPSS for statistical analysis. In order to address the research questions data analysis consisted of: descriptive statistics, Pearson Correlations, and Analysis of Variance (ANOVA) with Post Hoc comparisons. Pearson's Correlation Coefficients were used to measure the relationship between BJW and school stress, academic achievement and school behavior. A one-way ANOVA was used to assess

group differences of developmental level on BJW. The ANOVA was followed up with a series of Post Hoc comparisons using Student-Newman-Keuls's test.

Results

Descriptive Analyses

Students in grades seven through twelve at the district's junior/senior high school served as participants in this study. Seventh grade students composed 20.9 percent of the completed surveys ($\underline{n} = 87$), eighth grade students accounted for 20.6 percent ($\underline{n} = 86$), ninth grade students made up another 17.3 percent ($\underline{n} = 72$), the tenth grade 14.4 percent ($\underline{n} = 60$), the eleventh grade 16.1 percent ($\underline{n} = 67$), and the twelfth grade students completed the sample with 10.8 percent ($\underline{n} = 45$). Of these students 51.3 percent were female ($\underline{n} = 214$) and 48.7 percent were male ($\underline{n} = 203$).

Academic achievement by grade is shown in Table 1. Although the majority of student's had final grades in all four academic subjects, some were enrolled in as little as one, sample sizes ranged from 361 in Science to 407 in Social Studies. Final English grades, across the grade levels, ranged from 76.5 to 81.2 with an overall mean score of 78.7. English grades were curvilinear with peaks in the seventh and twelfth grades and lowest in the ninth grade. Social Studies grades ranged from 75.5 to 84.8 with an overall mean score of 78.5. With the exception of the ninth grade, these scores increased with grade level. Students scored between 70.8 and 82.7 in Science with an overall mean score of 75.4. Senior Science grades were the highest while freshman grades were the lowest. Math scores ranged from 75.0 to 82 with an overall mean score of 79.0. In Math, Juniors' grades were the highest while the eighth grade Math grades were the lowest.

As shown in Table 2 by grade, school behavioral performance was measured by tardiness, absenteeism and behavioral discipline. While some students had no recorded incidences of discipline others had a point value as high as 111. Values varied based on both frequency and severity. The overall mean discipline score was 3.33. Disciplinary actions were slightly higher in eighth grade than ninth, making the eighth grade the highest. Sophomores scored the lowest in disciplinary actions. Students had between zero and 107 instances of tardiness with a mean of 5.52. Seniors exhibited the most instances of tardiness with the fewest instances occurring in the seventh grade. Absences ranged from zero to 20 with a mean of 1.39. Absenteeism increased with grade level with the exception of the eleventh grade, which had slightly less absences than the tenth grade.

Results for BJW and School Stress were analyzed using a six point Likert scale ranging from strongly disagree (1) to strongly agree (6). Results are displayed in Table 3. Individual student scores on the BJW scale ranged from 1.71 (in the disagree range) to 6 (strongly agree). The mean BJW score was 4.05. Individual student scores on the School Stress scale ranged from 1 to 6 with a mean of 3.44.

Inferential Statistics

Correlational analysis of Academic Achievement and BJW are displayed in Table 4. Academic Achievement and BJW were significantly correlated across the four core academic areas. A significant positive correlation was seen between BJW and English grades ($r = .26, p \leq .001$), Science grades ($r = .29, p \leq .001$), Social Studies grades ($r = .26, p \leq .001$), and Math grades ($r = .28, p \leq .001$). Correlations between BJW and behavioral performance at school were also analyzed and are shown in Table 4. A

significant negative correlation exists between BJW and discipline ($r = -.17, p \leq .001$).

The relationship between BJW and School Stress is shown in Table 4 as well. A negative correlation was obtained between BJW and School Stress ($r = -.31, p < .000$).

To unpack further the significance of correlations between BJW and school performance, various mean comparisons were conducted from those who were in the first quartile of the BJW scale (range = 1-3.71) and those participants in the fourth quartile (range = 4.57-6). Table 5 shows the significant difference across means for the two groups. Significant mean differences resulted for discipline ($t = 2.80, p \leq .01$), English ($t = -4.37, p \leq .001$), science ($t = -4.70$), social studies ($t = -4.69$) and math ($t = -5.17, p \leq .001$).

Analysis of Variance

To test differences in BJW by grade, a one-way ANOVA was conducted. The results of the ANOVA proved significant ($F_{5,411} = 3.70, p \leq .01$). Post Hoc comparisons (Student-Newman-Keuls) indicated that the BJW mean for twelfth grade students was significantly higher than all other grades.

Further Analysis

To ascertain more clearly how BJW contributes to academic success, an overall academic performance was calculated by summing across the academic subjects, excluding science as so few students were enrolled in twelfth grade science. A Multiple Regression Analysis (MRA) was performed with academic success entered as the dependent variable and BJW, stress and school problem behaviors as the independent variables. Results of the MRA proved significant with discipline, stress, absences, and BJW serving as significant predictors ($R = .54, F_{4, 340} = 35.72, p < .001$) and accounted for 30% of the variance for academic achievement.

Discussion

The current study was conducted to replicate and expand upon the findings of Dalbert and Maes (2002). Specifically, this study demonstrated that BJW serves as a protective factor in that it is moderately related to academic achievement and fewer or less severe disciplinary actions. These findings are particularly confirmed as the school data was obtained using actual school records of grades, absenteeism and disciplinary actions as opposed to only self-report data (Dalbert & Maes).

Of particular importance are the qualitative differences that appear when looking at both the high end (fourth quartile) and low end (first quartile) of respondents on the BJW scale. For example, those in the first quartile group received disciplinary action on average equivalent to six hours in detention or two days of in school suspension, or one day of out of school suspension. In contrast, those participants in the fourth quartile group received on average only one to two hours of detention. These qualitative differences were also evident with regards to academic grades. While on average a student in the first quartile group received a “C” in English, a student in the fourth quartile group went up an entire letter grade to receive a “B” in English. This one letter grade difference from a “C” to a “B” remained consistent across all four academic subjects measured. These qualitative findings strongly support the notion of BJW serving as a resilience or protective factor for school success.

The difference in academic achievement among those with a mild versus a strong sense of a just world; however, may be due in part to differences in senses of school stress. Tomaka and Blascovich (1994) demonstrated that those individuals with a strong sense of a BJW tend to see difficult tasks as challenges to be met rather than as threats as

those do with a mild BJW. Thus, it can be speculated then that those students with a strong BJW see school work as more a challenge to be met and are therefore motivated to work harder. In comparison, those students with a mild or low BJW perceive school work as a threat and behave as such, even to the point of learned helplessness. Lerner (1980) points out that due to their vision of the world as chaotic, it is not a far stretch that many individual's without a BJW will show symptoms of learned helplessness.

Hafer and Corey (1999) offer additional research to explain the effect of BJW on grades. They found that individuals who have a strong sense of a BJW make internal attributions for low exam grades. In dissimilarity, those individuals with a weak sense of a BJW make external contributions for their low grades. It makes sense then that those who make internal contributions are more likely to take it upon themselves to modify their behavior in a way that may lead to a higher grade the next time around. However; if one is making external contributions for low grades, such as blaming a teacher, that individual is unlikely to change his or her study habits. The results of the regression analysis did yield that both stress and BJW contribute to predicting academic success. Outside of past academic achievement we see that one's BJW actually contributes to variability in overall achievement.

Numerous topics for future study arise from questions left unanswered by the current study. Knowing that BJW does serve as an academic enabler, its implications in schools are numerous. Naturally, the next question is, how can this belief be fostered? Unfortunately, in a study using all adolescents as participants it is difficult to determine how BJW develops. Whether the speculations of Piaget (1932), Lerner (1980) and Jose (1990) hold true is beyond the scope of the current study.

When a sense of a BJW develops or when it is strongest is also left unanswered by this study. Based on the research of Piaget (1932) regarding imminent justice, it was hypothesized that those at lower developmental levels would have a stronger BJW than the older high school students. In contrast, the seniors had the highest mean BJW, and were the only grade level to differ significantly from the rest. It can be assumed that this is due to the changes that occur at the end of high school in which the students finally see the results of his or her work, such as acceptance to college or obtaining a job. Although, the current study does not provide adequate support for this hypothesis.

Other unsubstantiated hypotheses included those made about absenteeism and tardiness. The current study does not provide statistical support for BJW affecting either absenteeism or tardiness either negatively or positively. However, because discipline was significant for BJW, it is safe to say that it is not so much whether or not students come to school but how they conduct themselves when they are there. It is important to note, however, that absenteeism and tardiness have a significant effect on grades. It does carry out that the more students go to school the more they learn. As a result, other constructs such as fairness and school climate should be investigated as factors contributing to attendance.

Other topics for further study arise from the design of the current study. Limitations created by design may have affected both internal and external validity. The sample used for the study was homogenous in that all subjects came from one school district in Western New York. Whether or not this sample of primarily middle class, Caucasian students can be generalized to a broader population is unknown. This supports Dalbert and Maes' (1999) findings about BJW and academic success when looking at

Caucasians across cultures. However, both studies relied on participants who represented that status quo and not those who are alienated such as minorities. Furthermore, not only was a single sample of subjects used, but a student responses at one certain point in time was also used across the measures. It cannot be ascertained that because the students indicated a certain level of stress at that point of time that it would remain constant over time.

Although the measures chosen for the current study were selected for greater validity than previous research, they were not without flaw. Many lower level students expressed difficulty in reading the survey items. These students often asked for teacher clarification in regards to vocabulary. How or whether the clarification affected their responses is unknown. In addition, survey items were chosen to fit the twenty minute time slot allotted to the study by the school. This meant using only two of six subscales of Metacalf, et al's (1982) *School Stress Inventory*. Using fewer subscales can affect the way a construct is represented on a test and its reliability.

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Table 1

Descriptive Statistics for Academic Achievement by Grade

Grade	Subjects							
	English		Math		Soc. Stud.		Science	
	M	SD	M	SD	M	SD	M	SD
7 th	81.2	10.4	79.6	11.3	75.5	11.9	76.4	13.1
8 th	77.3	13.4	75.0	11.4	77.5	11.7	76.0	10.7
9 th	76.5	12.1	78.4	12.3	76.2	12.7	70.8	12.5
10 th	77.0	12.7	79.8	10.6	79.0	11.6	73.1	13.0
11 th	79.9	7.2	82.0	9.7	81.9	8.2	79.8	9.5
12 th	81.0	7.3	79.0	11.8	84.8	6.9	82.7	9.0
Overall	78.7	11.2	79.0	11.3	78.5	11.4	75.5	12.2

Table 2

Descriptive Statistics for Behavioral Performance by Grade

Grade	<u>School Behavior</u>					
	<u>Absences</u>		<u>Tardiness</u>		<u>Disciplinary Action</u>	
	M	SD	M	SD	M	SD
7 th	1.0	1.4	2.6	5.4	2.5	6.6
8 th	1.2	2.3	4.0	12.2	5.3	17.1
9 th	1.3	2.3	6.2	18.2	4.9	16.0
10 th	1.6	3.2	3.1	4.4	1.4	3.7
11 th	1.4	3.0	7.3	15.9	2.2	4.6
12 th	2.2	4.2	13.6	17.3	3.0	4.9
Overall	1.4	2.7	5.5	13.3	3.3	11.0

n = 417

Table 3

Descriptive Statistics for Belief in a Just World and School Stress

Grade	<u>BJW</u>		<u>School Stress</u>	
	M	SD	M	SD
7 th	4.06	.71	3.55	.91
8 th	3.99	.70	3.50	.87
9 th	3.86	.69	3.65	.81
10 th	4.00	.68	3.42	1.01
11 th	4.12	.71	3.30	.91
12 th	4.39	.57	3.02	.82
Overall	4.05	.70	3.44	.90

n = 417

Table 4

Pearson Product Moment Correlations between BJW and Behavioral Performance, Academic Achievement and School Stress

	1	2	3	4	5	6	7	8	9
1 BJW	—								
<u>Beh. Performance</u>									
2 Tardy	-.01	—							
3 Absent	-.05	.21**	—						
4 Discipline	.17**	.59**	.21**	—					
<u>Academic Ach.</u>									
5 English	.26**	-.25**	.25**	-.37**	—				
6 Math	.28**	-.22**	-.21**	-.30**	.70**	—			
7 Social Studies	.26**	-.20**	-.23**	.37**	.81**	.71**	—		
8 Science	.29**	-.22**	-.25**	-.38**	.77**	.74**	.79**	—	
9 <u>School Stress</u>	-.31**	-.05	-.09	-.02	-.25**	-.28**	-.27**	-.33**	—

** ($p \leq .001$)

$n = 417$

Table 5

T-tests on School Performance Variables for the 1st and 4th BJW Quartile Groups

School Performance	BJW Quartiles				M. dif.
	1 st (n = 101)		4 th (n = 117)		
	M	SD	M	SD	
Discipline	6.32	16.05	1.72	4.04	4.60*
Tardy	5.84	14.42	6.32	14.32	.48
Absent	1.54	2.45	1.33	3.12	.21
English	75.32	13.30	82.20	9.55	-6.88**
Social Studies	74.48	13.20	81.70	9.34	-8.56**
Science	71.00	13.44	79.56	11.81	-7.22**
Math	73.80	12.83	82.40	10.17	-8.60**

* $p \leq .01$, ** $p \leq .001$

Table 6

Multiple Regression Analysis with Academic Success as the Dependent Variable

Variable	R	R ² change	b weight	t value
Discipline	.38	.14	.32	-6.81**
Stress	.49	.24	-.27	-5.61**
Absent	.53	.28	-.19	-4.10**
BJW	.54	.30	-.14	2.88*

* $p \leq .01$, ** $p \leq .001$

Appendix A

Belief in a Just World Items

The following items are to be evaluated on a 6-point scale where 6 = strongly agree; 5 = agree; 4 = slightly agree; 3 = slightly disagree; 2 = disagree; 1 = strongly disagree

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1.) I believe that, by and large, I deserve what happens to me. | 6 | 5 | 4 | 3 | 2 | 1 |
| 2.) I am usually treated fairly. | 6 | 5 | 4 | 3 | 2 | 1 |
| 3.) I believe that I usually get what I deserve. | 6 | 5 | 4 | 3 | 2 | 1 |
| 4.) Overall, events in my life are just. | 6 | 5 | 4 | 3 | 2 | 1 |
| 5.) In my life injustice is the exception rather than the rule. | 6 | 5 | 4 | 3 | 2 | 1 |
| 6.) I believe that most of the things that happen in my life are fair. | 6 | 5 | 4 | 3 | 2 | 1 |
| 7.) I think that important decisions that are made concerning me
are just. | 6 | 5 | 4 | 3 | 2 | 1 |

Appendix B

School Stress Items

The following items are to be evaluated on a 6-point scale where 6 = strongly agree; 5 = agree; 4 = slightly agree; 3 = slightly disagree; 2 = disagree; 1 = strongly disagree

- | | | | | | | |
|---|---|---|---|---|---|---|
| 1.) I find the grading system for bad work stressful | 6 | 5 | 4 | 3 | 2 | 1 |
| 2.) I find the grading system for good work stressful | 6 | 5 | 4 | 3 | 2 | 1 |
| 3.) I find progress reports and exam reports to parents stressful | 6 | 5 | 4 | 3 | 2 | 1 |
| 4.) I find it stressful getting along with teachers | 6 | 5 | 4 | 3 | 2 | 1 |
| 5.) I find it stressful to understand testing/examination questions | 6 | 5 | 4 | 3 | 2 | 1 |
| 6.) I find it stressful to get help with choosing a career | 6 | 5 | 4 | 3 | 2 | 1 |