Reactions of Victimized Youth:
Strain as an Explanation of School Delinquency[1]

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ABSTRACT
In recent years several sensational, seemingly irrational incidents of violence in our nation's schools have focused our attention on school crime. Specifically, several of the perpetrators of these acts have identified repeated peer victimization as a contributory factor. A number of self-report studies have also indicated an increased presence of such victimization in our nation's schools. Given the frequency of peer victimization in schools, as well as its anecdotal link to serious school violence, it seems logical that research efforts would attempt to investigate the effects of this behavior on delinquency within the schools, yet very little empirical inquiry has addressed this issue. This study seeks to fill that gap in the literature through an extension of Agnew, Brezina, Wright and Cullen's (2002) initial attempt to measure peer victimization as a source of strain and further seeks to determine if strain manifests itself in delinquency, particularly that which occurs in the schools. Additionally, examinations of the differential effects of physical and verbal victimization on school delinquency are undertaken.

School violence has become an important social concern in recent years. Specifically, several killings, which have occurred on school grounds at the hands of current or former students, have directed our attention to the nature and extent of school crime. Several high-profile shootings in schools, such as the ones in Littleton, Colorado; Jonesboro, Arkansas; and Paducah, Kentucky have increased fear among students, faculty, and parents across the country regarding the safety of our nation's school children. While these incidents are statistically rare, they have nonetheless caused our society to question the ability of current measures to effectively deal with school crime, as well as to seek to better understand the motivations underlying such behavior.

Many of the young perpetrators of these recent school shootings claim to have been victims of repeated torment at the hands of fellow schoolmates. To illustrate, in two-thirds of the school shootings that occurred between 1974 and 2000, attackers reportedly felt persecuted or threatened, or had been injured by others prior to the incident (Secret Service 2000). They have even suggested that they were beleaguered to the point of explosion and therefore had little choice but to strike back (Ericson 2001). Are such claims merely an excuse, or could their violence have been a reaction to peer victimization? Whether these claims are valid explanations or rather desperate rationalizations has yet to be thoroughly investigated.

If one believes the anecdotal information surrounding the school shootings, then peer victimization may have serious consequences. While there has been some research that identifies the existence of peer-related victimization within our nation's schools, very little empirical inquiry has been conducted to determine the consequences of such victimization. Specifically, much of the literature that has examined the effects of peer victimization has done so with regard to general delinquency, while very few have focused on the effects of such victimization within the school setting.

The current study seeks to add to the literature in several ways, most notably through an elaboration of the initial findings of Agnew (2002) who found physical peer victimization to be a source of strain that results in delinquency and Agnew, Brezina, Wright, and Cullen (2002) who found verbal peer victimization not to be a significant source of strain that results in delinquency. Further, we focus our empirical examinations on delinquent behaviors that occur within the school. In

short, this study seeks to contribute to a better understanding of the complex relationship between peer victimization and school delinquency by employing the lessons learned from general strain theory.

PEER VICTIMIZATION AND DELINQUENCY

Much of the research on peer victimization in a school context has been conducted internationally, most notably in the United Kingdom or Scandinavian countries (Borg 1998; Olweus 1978; Olweus 1991; Roland 1989; Voss and Mulligan 2000). Although limited, literature within the United States also recognizes the existence of peer-related victimization and intimidation as pervasive forms of school violence (Nansel, Overpeck, Pilla, Simons-Morton and Scheidt 2001; Nofzinger 2001; Schreck, Miller, and Gibson 2003; Whitney and Smith 1993). For example, one survey found that two-thirds of students reported the presence of a group of individuals at their schools who repeatedly intimidated other students (Knowledge Networks 2001). The threat of intimidation was a serious concern for many students. In fact, it was the primary concern reported by 8–11 year olds, ranking higher than drugs, alcohol, and sex (Kaiser Family Foundation 2001). Fifty-eight percent of students reported the fear of being victimized as a common worry when moving into high school (Tattum 1989). While these numbers vary between studies, a conservative estimate accepted by many is that on any given day at least five percent of children aged 7–16 are victimized (Roland 1989).

One common form of peer victimization at school is bullying. Bullying behaviors encompass a variety of forms including physical aggression (hitting, kicking, taking items by force), verbal aggression (taunting, teasing, threats), and indirect actions such as excluding others from activities, spreading rumors, and manipulating friendships (Olweus 1978; Tattum 1989; Besag 1989; Limber and Nation 1998; Leckie 1997; Ericson 2001). Bullying, however, can be distinguished from general peer victimization as an identifiable subset of aggressive behavior among children, because bullying represents a pattern of behavior committed by one who has some perceived or actual power over a victim. While the current study does not attempt to resolve the issues associated with the ongoing debate between the conceptual and operational differences between peer victimization and bullying, it is maintained that bullying is a specific subset of peer victimization. That is, bullying is a form of peer victimization, but not all peer victimization can be accurately characterized as bullying. Despite these differences, there is little debate that both forms of aggression can have deleterious consequences for adolescents.

Although this body of research has detailed the extent and nature of peer victimization at school, none of the studies have explicitly linked victimization to future involvement in delinquency. Other studies have explored this relationship and generally concluded that youth who are victimized are at a greater risk to engage in delinquent behaviors (Esbensen and Huizinga 1991; Lauritsen, Sampson, and Laub 1991; Sams   pon and Lauritsen 1990; Shaffer and Ruback 2002). This line of research has suggested that victims are more at risk to be offenders because of lifestyle decisions that put them in close proximity to each other in hazardous environments (Mustaine and Tewksbury 1998; Nofzinger and Kurtz 2005; Hindelang, Gottfredson, and Garofalo 1978). For example, youth who are members of a gang are by definition associating with a disproportionately deviant group of individuals. This association with offenders results in both a greater likelihood of engaging in delinquent behavior and an increased vulnerability to be victimized. That is, youth who prey on others are at risk to be victimized for many of the same reasons they were able to engage in delinquent behaviors (e.g., lack of guardianship, associating with other delinquents).

While this research has contributed to our understanding of the relationship between peer victimization and delinquency, few studies have applied these lessons to a school setting. Indeed, lifestyle approaches typically focus on the risks associated with routines that involve an adolescent being away from prosocial institutions such as the home and school. Informed by both the literature on peer victimization at school and studies that have linked victimization more broadly to involvement in delinquency, the current study uses a measure of peer victimization to explain school delinquency from a different theoretical perspective—general strain theory.

THEORETICAL FRAMEWORK

Following Agnew and colleagues' (2002) belief that peer victimization is a source of strain for many children, we seek to further examine such victimization from this theoretical standpoint. Originally, the strain model was developed by Merton (1938) to explain deviance by those without legitimate means of acquiring socially defined success. According to Merton (1938: 674), "aberrant conduct, therefore, may be viewed as a symptom of dissociation between culturally defined aspirations and socially structured means." From this embryonic viewpoint, however, strain theory has thoroughly evolved. Perhaps the most notable addition to the theory came in 1992 when Robert Agnew presented his reformulation of traditional strain theory, known as general strain theory (GST). Specifically, GST proposes that adolescents are pressured into delinquency by the negative affective states or emotions

resulting from negative relationships and experiences, rather than directly from the sources of strain (Agnew 1992). That is, youth will not necessarily engage in delinquency as a result of strain, but delinquency as a coping response is more likely when the youth experiences negative affect (anger or frustration) as a result of the strain. Agnew's theory recognizes three types of negative relationships, which may lead to delinquency. The first type occurs when individuals prohibit someone from achieving positively valued goals. Second, strain can occur when people threaten to, or actually remove, positively valued stimuli from another. The final type of strain occurs when individuals introduce negative stimuli. Each of these sources of strain increases the probability that individuals will experience negative emotions, which include anxiety, disappointment, depression, fear, frustration, and most importantly anger. Anger increases the feelings of being wronged or betrayed and produces a desire for revenge, promotes action, and lowers inhibitions (Agnew 1992).

Since the introduction of GST, several research efforts have been undertaken to investigate its ability to adequately explain delinquency. These studies have sought to examine the effect of strain on a variety of delinquent behaviors. Early studies by Agnew (1985, 1989) found that negative experiences at school and home were related to anger and aggressive behavior. Brezina (1996) found that strain leads to negative affective states including anger, resentment, anxiety, and depression. Additional studies indicate that negative relationships, stressful life events, and personal and vicarious experiences with physical victimization result in an increase in delinquency (Agnew 2002; Agnew et al. 2002; Agnew and White 1992; Brezina 1996; Hoffman and Miller 1998; Paternoster and Mazerolle 1994). Finally, Agnew (2001:351) clarified that not all strain will lead to crime; only those which "are seen as unjust, are seen as high in magnitude, are associated with low social control, and create some pressure or incentive to engage in criminal coping." Notably, among the strains most likely to lead to delinquency, Agnew (2001) includes negative school experiences and peer abuse.

The ability of research to substantiate the fundamental belief of GST, that emotions play a mediating role in delinquency, has been limited. Brezina (1996) found that delinquency represents a partially successful adaptation to strain. Aseltine, Gore and Gordon (2000) found only limited support for the role affective states have on predicting behavior outcomes. While they found anger to be associated with aggressive delinquency, they failed to find a link between marijuana use or property crimes and negative affective states. Hoffman and Su (1997), on the other hand, found that negative affective states were predictive of substance abuse. Finally, Mazerolle, Piquero and Capowich (2003) found that trait anger increases delinquency irrespective of strain levels, while situation anger was unable to account for delinquency.

Although general strain theory has received significant empirical attention, not much of that has been dedicated to an examination of the effects that such strain may have on behavior within a school setting. In 1999 Agnew called for research regarding the ability of GST to explain delinquency within the school setting. Brezina, Piquero, and Mazerolle (2001) were among the first to conduct such an examination. However, they utilized macro strain theory to examine the effects of aggregate levels of anger and frustration on aggressive behaviors within the school. This study, while beneficial, does not provide information regarding the individual strain characteristics associated with school delinquency.

Further, to date very few studies have examined whether peer victimization is a viable source of strain and none of which have focused solely on the school setting. One of the only studies to address the physical victimization was conducted by Agnew (2002). Another study focused on verbal peer victimization (Agnew et al 2002). This latter study examined the relationship between victimization ("picked on by kids"), delinquency, and negative emotionality/low constraint. Interestingly, the victimization measure was the only strain variable not directly related to delinquency. Additionally, Agnew and colleagues (2002) found a significant interaction effect with negative emotionality/low constraint and age, suggesting that some youth are more affected by the victimization, and older victims are more likely to respond with delinquency. However, these findings were methodologically limited by the simplistic manner in which both the dependent and independent variables were measured (Agnew et al. 2002).[2] Given these methodological concerns, Agnew and associates (2002: 56) suggested "future research… should employ broader measures to maximize the variation in delinquency."

The Present Study
Given our theoretical foundations and the peer victimization literature reviewed above, the broad research question that the current study tests is whether there is a relationship between the strain of peer victimization, the negative affect of anger and frustration, and school delinquency. In examining this issue, we pay close attention to the role of emotions in the production of delinquency in an attempt to determine if such emotions produce a mediating effect, as GST suggests, or an independent effect on delinquency. Within this broad examination there are also several other significant contributions to the literature that this study makes. First, the study narrows

the focus of the effects of peer victimization from general delinquency (Agnew et al. 2002) to school delinquency and from a macro level analysis of the effects of strain on delinquency (Brezina et al. 2001) to a micro level analysis. Second, the study extends previous attempts to measure peer victimization as a source of strain. Specifically, given Agnew's (2002) findings that physical peer victimization was a significant predictor of school delinquency and Agnew and colleagues' (2002) findings that verbal peer victimization was not a significant predictor of delinquency, we examine the effects of both types of behavior on delinquency.

METHODOLOGY

Data Collection and Sample

The data used in this study were drawn from a larger needs assessment administered to students enrolled in the 6th, 8th, 10th, and 12th grades at four public school districts in a rural Southern county during the 2001-2002 school year. Data were collected through anonymous surveys administered in various group settings.[3] To assist in data collection, trained testing administrators were used. All administrators were provided scripts for the survey administration and were prohibited from providing commentary or clarifying remarks regarding survey questions.

All students enrolled in the specified grades were invited to participate in the study. Passive consent forms were utilized. Therefore, only those students whose parents returned a consent form indicating they did not want their child to participate in the study were excluded from the administration.[4] Approximately 4,000 surveys were administered to participants. However, not all students who participated in the survey were included in the sample. Because validity in self-report measures relies on the honesty of the respondents (Hagan 1993), attempts were made to eliminate those individuals who did not tell the truth when answering the survey from the sample. Specifically, students who responded that they "never" told the truth, told the truth "once in awhile" or "sometimes" were eliminated from the sample.[5] While this may seem a drastic step to some, it is our position that if we are to believe students self-reported delinquency, we should also believe their self-reported dishonesty. The current study employed a method of eliminating cases based on invalid data that is consistent with the suggestions of Brown and Zimmerman (2004). These authors found that students who reported they were "not honest at all" or "not very honest" (p.20) on a self-report instrument were also more likely to provide inconsistent data regarding their alcohol use on the same instrument. Based on these findings the authors suggest that self-report studies utilize honesty questions (such as the one employed in the current study) to improve the validity of their measures. The final sample for this study consisted of 2,067 respondents with the following demographic characteristics: Fifty-nine percent of the respondents were female and twenty-six percent were nonwhite. Sixth graders accounted for 26 percent of the sample; eighth graders, 32 percent; tenth graders, 19 percent; and twelfth graders, 23 percent.

Measures

The constructs and measures utilized in this study have been well established in previous studies (see Babbie 1998 for a discussion of reliability regarding this technique). In addition, the measures were pretested with seventh-graders attending a local after-school program.[6] In preparation for analyses, students' responses to index items were summed and used to create the indices. Additionally, principal component analyses were run for each of the indices and the results analyzed. The range of factor loadings for the study indices was .60 to .89. In each of the indices, all of the

Table 1. Intercorrelation Matrix and Descriptive Statistics for the Study Variables.

Variables	School Delinquency	Peer Victimization	Anger	Frustration	Male	White
Peer Victimization	.32**					
Anger	.29**	.20**				
Frustration	.34**	.31**	.50**			
Male	-.15**	-.15**	.09**	-.04*		
White	-.13**	.00	.01	-.03	.00	
Grade	-.00	-.12**	.23**	.07*	.00	.01
Descriptives						
Mean	5.48	3.10	6.30	9.03		
SD	12.20	4.46	4.06	6.96		
Range	0 – 80	0 – 24	0 – 16	0 – 28		
Cronbach's α	.92	.72	.83	.89		

* p<.01; **p<.001 (two tailed)

Table 2. Student's Experience with Peer Victimization During the Last Year.

Frequency of Experience(s)	Type of Victimization	
	Verbal Abuse by Peers %	Physical Abuse by Peers %
Never	41	62
At least once during last year	25	18
Once every 3 months	5	4
Once every 2 months	2	2
Once a month	3	2
Two or more times a month	3	2
Once a week	4	2
Twice a week	5	2
Once a day	12	6

inter-item correlations were statistically significant. Reliability measures, specifically Cronbach's alpha, were then calculated for each index (See Appendix A for item constructs, reliability measures, and factor loadings).

Independent variables. This study utilized three independent variables (anger, frustration, and peer victimization) and three demographic controls (race, gender, and grade level). The anger index (derived from Brezina 1996) consisted of four items and ranged from 0 to 16 with a mean of 6.12 and a standard deviation of 4.09. High scores indicated increased levels of anger (Cronbach's $\alpha = 0.83$). Seven items comprised the frustration scale (also from Brezina 1996). Scores ranged from 0 to 28 with a mean of 9.39 and a standard deviation of 7.03 (Cronbach's $\alpha = 0.89$). Students' experiences with peer victimization within the last year were measured along two items taken from Kaufman et al. (1999). This index ranged from 0 to 24 with a mean of 3.73 and a standard deviation of 5.75 (Cronbach's $\alpha = 0.72$). A high score on this index was indicative of an increased level of victimization by peers (see Table 1 for full descriptive statistics for all study variables).

To determine the extent to which students had been subjected to peer victimization, frequencies were computed for each type of victimization. Table 2 shows the results of the specific types, as well as the frequency with which they were experienced. The most common type of victimization reported was verbal abuse by peers. Fifty-nine percent of the students indicated that they had been the victims of such abuse at least once or more during the last year. Twenty-five percent of the students had been verbally abused at least once during the year, while 12 percent indicated they were subjected to this type of abuse at least once a day. Only thirty-eight percent of the students indicated that they had been the victim of physical abuse at the hands of their peers on at least one occasion during the last year. Of those individuals, 18 percent reported having been the victim of such abuse at least once during the last year and 6 percent reported such victimization on a daily basis.

Dependent variable. Student's delinquent behavior in school was measured by a ten-item index taken from Kaufman et al. (1999). The behaviors encompassed in this index range from acts of intimidation to more serious behaviors such as assault. While we recognize that the dependent variable under study includes a broad range of behaviors, we believe it is representative of general school delinquency measures that have been used in other studies. The index ranges from 0 to 80 with an average of 5.73 and a standard deviation of 12.46 (Cronbach's $\alpha = 0.92$). High scores on this index

Table 3. Student's Commission of Self-Reported Delinquency During the Last Year.

Type of Delinquency	At Least Once %	Never %
Frightened another student at school	33	67
Frightened another student on way to/from school	19	81
Student yelled, cursed, insulted, teased, or called another student names	46	54
Student has stolen something from someone's desk, locker or some other place at school	14	86
Student has taken an item directly from another person by force at school	7	93
Student has physically hit, kicked, pushed or shoved another student	30	70
Student has threatened to injure another student without a weapon	17	83
Student has threatened to injure another student with a knife	7	93
Student has threatened to injure another student with a gun	6	94
Student has threatened to injure another student with another type of weapon	8	92

Table 4. OLS Regression: Anger and Frustration Regressed on Peer Victimization and Demographic Controls.

	Model 1: Experience with peer victimization and Anger			Model 2: Experience with peer victimization and Frustration		
	b	S.E.	β	b	S.E.	β
Constant	-1.44***	.38	--	4.90***	.67	--
Male	-.94***	.17	.12	.16	.29	.00
White	.09	.18	.01	-.38	.32	-.03
Grade	.50***	.04	.27	.34***	.07	.11
Peer Victimization	.22***	.02	.25	.51***	.03	.33
F(df)	72.45 (4)***			67.89 (4)***		
R^2 (adjusted R^2)	.12 (.12)			.11 (.11)		

p<.05, ** p<.01, *** p<.001 (two-tailed)

were indicative of students' increased involvement in school delinquency. Dependent variable frequencies were initially computed to determine the extent to which students committed school delinquency. Table 3 displays the results of this analysis.

The most common type of school delinquency in which students reported engaging was verbal abuse (46%). Intimidation of other students at school was also frequently committed (33%). Physical abuse of another student was also common with 30 percent of the students reportedly having engaged in this activity. Nineteen percent of the students reported intimidating other students on the way to or from school. Several students indicated that they engaged in behaviors that were threatening to other students: seventeen percent reported having threatened another student, 7 percent had done so with a knife, 6 percent with a gun, and 8 percent with a weapon. Theft ranked sixth among the delinquent activities: 14 percent of the students reported having committed this act with only 7 percent reportedly using force.

RESULTS

To examine the relationship among study variables, bivariate and diagnostic analyses were initially conducted. All of the study variables, except grade level, were significantly correlated with the dependant measure (school delinquency). Inter-item correlations among the independent variables ranged from .00 to .51, which suggests that multicollinearity does not present a significant problem (see Grimm and Yarnold 2000). The highest correlation existed between anger and frustration (r=.51, p<.001). Further, the highest variance inflation factor in the regression models was 1.21 and the lowest tolerance figure was .77 which also indicates few problems with multicollinearity (Fox, 1991).

To examine the central issue of general strain theory, we conducted a series of step-wise regression analyses, which focus on assessing four relationships: (1) the relationship between peer victimization and negative affect; (2) the relationship between negative affect and school delinquency; (3) the relationship

between peer victimization and school delinquency; and (4) the relationship between peer victimization and school delinquency, controlling for negative affect.

In the first set of analyses we sought to determine whether students who were victimized by their peers were more likely to experience negative affect, specifically anger and frustration. As Agnew (1992) argues, not all strain will lead to delinquency. To determine whether students in this sample experienced negative affect as a result of peer victimization, we estimated two models (Table 4). In the first anger was regressed on peer victimization and the demographic variables (Model 1) and in the second frustration was regressed on the same variables (Model 2). With regard to anger, the data suggest that females, older students, and those who had been victimized were more likely to become angry. In the frustration model, older students and those who had been victimized were more likely to be frustrated.

Prior to conducting the next step of analyses, the demographic variables were entered into the model for control purposes. The results of this analysis, labeled Model 3 and presented in Table 5, show that demographic variables account for four percent of the variance in school delinquency (F=34.07, p<.001). The second stage of the analyses tested whether youth who experienced negative affect were more likely to self-report school delinquency. Agnew (1992) argues that negative affect is the key to whether delinquency will occur, yet empirical investigations have yielded conflicting results as to the specific mediating role which emotions play (see Aseltine, Gore and Gordon 2000; Brezina 1996; Hoffman and Su 1997; Mazerolle, Piquero and Capowich 2003). Thus, to accurately assess their role in the relationship between strain and delinquency, we examine the effect of such emotions independent of strain. To examine this relationship we regressed the school delinquency index on anger and frustration. Models 4 through 6 (Table 5) show the results of these analyses. Regression coefficients revealed a strong association between anger and school delinquency (β =.32, p<.001). After accounting for the demographics, anger explained an additional 11 percent

Table 5. OLS Regression: School Delinquency Regressed on Anger and Frustration.

	Model 3: Controls			Model 4: Anger			Model 5: Frustration			Model 6: Anger and Frustration		
	b	S.E.	β	b	S.E.	β	b	S.E.	β	b	S.E.	β
Constant	6.21‡	1.14	--	3.54**	1.10	--	2.16	1.15	--	1.65	1.13	--
Male	4.11‡	.52	1.66	5.07‡	.49	.21	3.64‡	.50	.15	4.49‡	.50	.18
White	-3.50	.53	-.13	-3.40‡	.53	-.13	-3.16‡	.55	-.12	-3.13‡	.54	-.12
Grade	.01	.12	.00	-.41‡	.11	-.08	-.10	.11	-.02	-.35**	.11	-.06
Anger				.94‡	.06	.32				.60‡	.07	.21
Frustration							.54‡	.04	.31	.38‡	.04	.22
F (df)	34.07‡ (3)			89.33‡ (4)			85.24‡ (4)			88.00‡ (5)		
R^2 (Adjusted R^2)	.04 (.04)			.15 (.14)			.14 (.14)			.18 (.18)		

Note: Standard errors are shown in parentheses;* $p < .05$, ** $p < .01$, ‡ $p < .001$ (two-tailed).

of the variation in school delinquency (see Model 4). Similarly, frustration was strongly related to school delinquency (see Model 5). Youth who reported more frustration were more likely to engage in school delinquency ($\beta = .31$, p<.001). Finally, when both anger and frustration were included in the model with the control variables, about 18 percent of the variation in school delinquency was explained (F=88.00, p<.001). Both anger and frustration remained statistically significant and moderately strong, indicating that each has an independent effect on school delinquency. In all models, males and nonwhites were more likely to engage in school delinquency.

Table 6 shows the results of the third stage of the analyses where we examine the relationship between peer victimization and delinquency independent of negative affect. To explore this question, we regressed peer victimization on the school delinquency index (Model 7). After controlling for demographics (see Model 3), peer victimization accounted for ten percent of the variation in school delinquency (F=86.24, p<.001). Consistent with strain theory, regression coefficients revealed a strong association between peer victimization and school delinquency ($\beta = .31$, p<.001).

Next we examine whether any direct relationship between peer victimization and school delinquency disappears when measures of negative affect are included. The moderately strong relationship between peer victimization and school delinquency that existed in Model 7 remained when anger and frustration were added to the models both individually and together. The final model explained 22 percent of the variation in school delinquency, indicating that anger, frustration, and peer victimization are all important correlates (see Model 10). Specifically, peer victimization ($\beta = .21$, p<.001) demonstrated the strongest association with school delinquency, followed by anger ($\beta = .18$, p<.001) and frustration ($\beta = .16$, p<.001). Again, in these models nonwhites and males were more likely to report participation in school delinquency.

Finally, given that a significant relationship between peer victimization and school delinquency emerged in all models, as well as the apparent lack of consensus in the literature regarding the effect of different types of victimization on delinquency (see Agnew 2002; Agnew et al. 2002), we sought to examine whether the type of victimization experienced has an effect on school delinquency. To answer this question we ran two

Table 6. OLS Regression: School Delinquency Regressed on Anger, Frustration, Peer Victimization, and Controls.

	Model 7: Peer Victimization			Model 8: Peer Victimization and Anger			Model 9: Peer Victimization and Frustration			Model 10: Peer Victimization, Frustration, and Anger		
	b	S.E.	β	b	S.E.	β	b	S.E.	β	b	S.E.	β
Constant	1.79	1.12		.44	1.09		-.19	1.13		-.41	1.12	
Male	3.02‡	.50	.50	4.07‡	.48	.48	2.84‡	.49	.12	3.70‡	.49	.15
White	-3.31‡	.54	-.12	-3.16‡	.52	-.12	-3.08‡	.53	-.11	-3.00‡	.53	-.11
Grade	.243*	.11	.04	-.17	.11	-.03	.10	.11	.02	-.15	.11	-.03
Anger				.76‡	.06	.26				.54‡	.07	.18
Frustration							.40‡	.04	.24	.28‡	.04	.16
Peer Victimization	.84‡	.05	.31	.67‡	.05	.25	.64‡	.06	.24	.57‡	.06	.21
F (df)	86.24‡ (4)			104.21‡ (5)			96.59‡ (5)			92.36‡ (6)		
R^2 (Adjusted R^2)	.14 (.14)			.20 (.20)			.19 (.19)			.22 (.21)		

Note: Standard errors are shown in parentheses; * $p < .05$, ** $p < .01$, ‡ $p < .001$ (two-tailed).

additional models in which school delinquency was regressed on anger, frustration, demographics, and the two measures of peer victimization (see Table 7). In the first, peer victimization was measured solely by acts of verbal victimization (Model 11). In the second model, peer victimization was measured solely by physical victimization (Model 12). Results indicate that both types of victimization account for approximately the same amount of variance in school delinquency. The verbal victimization model accounted for 20 percent of the variance (F=81.87, p<.001), while the physical victimization model accounted for 23 percent of the variance (F=98.67, p<.001).

DISCUSSION

The current research builds on what is known about school delinquency by employing general strain theory to examine the relationship between peer victimization, negative affect, and school delinquency. Results indicate that, controlling for gender, race, and grade level, youth who are victimized by peers are more likely to experience anger and frustration. Moreover, to the extent that strain in the form of peer victimization results in anger and frustration, the likelihood of involvement in school delinquency was increased. As a result, the current study adds to the growing evidence in support of general strain theory (Agnew and White 1992; Agnew et al. 2002; Brezina 1996; Hoffman and Miller 1998; Paternoster and Mazerolle 1994).

Perhaps the most significant contribution of this study was the finding that peer victimization associated with anger and frustration is related to increased involvement in school delinquency. In keeping with many previous GST findings (Agnew 1985, 1989; Agnew et al. 2002; Brezina 1996; Hoffman and Miller 1998; Hoffman and Su 1997), our results indicated that both anger and frustration are significantly related to delinquency, particularly within the schools. It is also important to note, however, that the effects of anger and frustration were also found to exist independent of strain. As such, they do not support the mediating effect of negative emotions that is central to GST. While our results in this regard are different from those from other studies of GST (Aseltine, Gore, and Gordon 2000; Hoffman and Su 1997; Mazerolle, Piquero and Capowich 2003), we suggest that these findings may be attributable to other sources of strain that were not measured in the current study, including negative relationships with teachers, family problems, or community related issues. That is, there are other strain-related reasons that angry or frustrated youth might engage in school delinquency.

The current study further examined the belief that peer victimization is a source of strain. While Agnew et al. (2002) failed to find verbal peer victimization to be a source of strain, Agnew (2002) found physical victimization to be a source of viable strain; one that is predictive of delinquency. When measures of verbal and physical victimization by peers were included in the current research, the hypothesis that peer victimization is a source of strain was supported. Interestingly, when an attempt was made to disaggregate the effects of these two distinct types of peer victimization on school delinquency, little difference emerged. Based on the results of both the earlier studies and the current study, it is clear that future studies should more thoroughly investigate the role of peer victimization in school delinquency.

Limitations of the Data

While the present study contributes to the literature, it is not without limitations. First, the study is limited by the fact that it relies on cross-sectional data collected from students in a rural Southern state. Further, because of various issues, original data collection efforts were unable to elicit a systematic random sample and were forced to include all willing students in the study.[7] While some may view the result as a convenience sample, it should be noted that all students in the designated grades were given equal opportunity to participate in this study and as such we view it as a purposive sample. However, the method in which the data were collected does limit our findings. As such, we caution that the findings in the current study are not offered as ones upon which broad generalizations may be made, but rather as examinations that may help guide future researchers in their attempts to examine the applicability of GST to school delinquency. Furthermore, the sample is restricted to public school students. There is some question as to whether students in private schools commit delinquent acts with the same frequency as public school students; therefore, future research efforts should include a representative sample from both public and private schools.

Another important limitation in the current study is that we are unable to isolate the temporal ordering of victimization and offending, as is a common weakness with cross sectional designs. Notably, many of the previous studies argue that victimization and delinquency have a reciprocal effect on one another (see Lauritsen, Sampson, and Laub 1991; Samspon and Lauritsen 1990; Shaffer and Ruback 2002). Additionally, many of these studies argue that offending comes before victimization. By contrast, in the current study we argue that victimization precedes delinquent behavior because victimization leads to negative affect, which then results in an increase in delinquency. It is important to note that we make this argument from a theoretical perspective (general strain theory) and not an empirical one because the data did not allow us to determine which came first.[8] Future studies, however, should consider this important issue and seek to clarify

the developmental ordering of victimization and delinquency.

Perhaps the most important limitation of the data involves the issue of missing data. A large source of missing data in the current study is attributable to the survey design. Because demographic questions were asked at the end of the questionnaire, students who failed to complete the questionnaire, also failed to report important demographic information. Given the significance of race and gender as predictors of delinquency, individuals who did not provide this information were excluded from the analysis. To determine whether the missing data affected our findings, we compared respondents in the sample to district representations of gender and race and found that the sample was disproportionately female and white.[9] We further estimated the model under study after excluding gender and race and found that neither the strength nor the direction of associations changed. Keeping these limitations in mind, we argue that one of the appealing aspects of GST is its ability to explain a variety of delinquent behaviors in all youth. Thus, results should be consistent, regardless of the sampling strategy employed. In short, the method of selection should not affect the variation of strain in relation to delinquency.

CONCLUSION

In conclusion, it is hoped that this paper will promote increased attention to the important issue of peer victimization within school. It is clear from this analysis that the both verbal and physical victimization are strongly associated with school delinquency. Further, while such victimization is strongly associated with anger and frustration, these emotions are also independently linked to school delinquency. Perhaps, as we previously suggest, there are other sources of strain that result in the strong association between negative affect independent of strain. Further research should be conducted to examine what those possible sources of strain are; specifically those sources of strain that affect school delinquency.

Efforts should be made to teach children prosocial coping skills so that if they are victimized they may be less likely to experience negative affect or respond with violence. Parents and teachers must be proactive at preventing school violence, including seemingly insignificant forms of verbal harassment as they may lead to more serious behaviors. Researchers must continue to examine the factors associated with school violence and the ways in which students are responding to the strains in their lives.

ENDNOTES

1. An earlier draft of this paper was presented at the annual meeting of the Western Society of Criminology, Long Beach, CA 2004. The authors would like to thank the editors and anonymous reviewers for their insightful comments.

2. This study employed a rather simplistic measure of bullying. Respondents simply replied 'yes' or 'no' to the questions of whether they were 'sometimes picked on or bothered by older kids and by kids their age or younger". Delinquency was measured by a five-item scale.

3. Administrations were determined by the school administrator's preference. As such they were flexible and ranged from administration to entire grade levels in a cafeteria setting to groups of approximately 25 students in individual classrooms. Without flexibility in the administration of the survey, it is unlikely that access to schools would have been gained.

4. Only 32 such forms were received.

5. A total of 579 surveys were excluded as a result of reporting dishonesty on the survey.

6. The pilot test was administered to this group for several reasons: (1) They approximated the lowest targeted grade level to be included in the study. (2) They would not be unduly biased by participating in the pilot study, as they were 7th graders who were not intended to be included in the study sample. (3) The program specifically targeted educationally disadvantaged students. Therefore, they were the most appropriate group to provide practical and logistical information such as the determination of total time needed for the administration, the comprehension level of the intended subjects, and the appropriateness of question wording.

7. Because the original data collection efforts were conducted in four school districts, there were a variety of issues such as tracking, scheduling conflicts, school administrators' constraints, etc. that prohibited a representative sample from being selected.

8. Previous studies (see Agnew 2002) have attempted to address this issue by controlling for measures of prior delinquency; measures which were unavailable in the current study.

9. Forty-nine percent of the students in the four school districts were female (compared to 59% of the sample), and 65 percent of the students were white (compared to 74% of the sample).

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Appendix A: Index Item, Reliabilities, and Factor Loadings

Variable	Response Format	Factor Loadings
School Delinquency (α=.92)	Nine point Likert Scale from never (0) to once a day (8).	
Frightened another student while at school.		.76
Frightened another student on way to/from school.		.81
Yelled, cursed, insulted, teased, or called a student names.		.60
Stolen something from someone's desk, locker or some other place.		.83
Taken money or something directly from another person by force.		.87
Hit, kicked, pushed, or shoved a student.		.76
Threatened to injure a student without a weapon.		.84
Threatened to injure another student with a gun.		.87
Threatened to injure another student with a knife.		.87
Threatened to injure another student with another type of weapon.		.87
Peer Victimization (α=.72)	Nine point Likert Scale from never (0) to once a day (8).	
A student yelled, cursed, insulted, or teased you.		.89
A student hit, kicked, pushed, or shoved you.		.89
Anger (α=.83)	Five point Likert Scale from never (0) to always (4).	
Let little things irritate them.		.84
Lost their temper.		.84
Carried a chip on their shoulder.		.81
Stayed mad at someone who hart hurt them.		.83
Frustration (α=.89)	Five point Likert Scale from never (0) to always (4).	
Other people are always lucky and get all of the breaks.		.74
As though you never get what you deserve from life.		.84
As though life has given you a "raw deal".		.87
As though life has somehow cheated you.		.87
Jealous of other people.		.71
Like a "powder keg ready to explode".		.79
Like getting even with someone who has harmed you.		.68

Appendix A: Index Item, Reliabilities, and Factor Loadings (Continued)

Variable	Response Format
Race	The variables were dummy coded as follows: 0) for non-whites and 1) for whites.

Original response format was: a) white, b) African American, c) Asian American, d) Hispanic, and e) other. These answers were then recoded from string to numeric values.

Gender	The variables were dummy coded as follows: 0) for female and 1) for male.

Original response format was a= female, b= male.

Grade Level

Original responses for grade level were originally coded as numeric values as follows: 1) for 6th grade 2) for 8th grade 3) for 10th grade and 4) for 12th grade.