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# Offline Consequences of Online Victimization: School Violence and Delinquency

Sameer Hinduja  
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**ABSTRACT.** As increasing numbers of youth embrace computer-mediated communication to meet academic and social needs, interpersonal violence directly and indirectly related to the Internet is occurring more often. Cyberbullying in particular has shot to the forefront of agendas in schools and communities due to the emotional, psychological, and even physical harm to which victims can be subjected. While previous studies have focused on describing its frequency in an exploratory capacity, the current work seeks to utilize general strain theory to identify the emotional and behavioral effects of cyberbullying victimization. Data collected online from a sample of adolescent Internet-users indicate that cyberbullying is a potent form of strain that may be related to involvement in school problems and delinquent behavior offline. Implications of these findings and suggestions for policy are discussed. doi:10.1300/J202v06n03\_06 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2007 by The Haworth Press, Inc. All rights reserved.]

**KEYWORDS.** General strain theory, bullying, violence, cyberspace, Internet, stress, online, delinquency, harassment, cyberbullying

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Variations of online harassment among youth and adults have received increased attention by academic researchers in recent years (Berson, Berson, & Ferron, 2002; Finn, 2004; Finn, 2000; Kennedy, 2000; Lamberg, 2002; Ybarra & Mitchell, 2004). Cyberbullying is one prominent type, and has been anecdotally and empirically linked to multiple maladaptive emotional, psychological, and behavioral outcomes (Hinduja & Patchin, 2006; Patchin & Hinduja, 2006). Apart from these descriptive studies, however, no attempt has been made to apply social structure theory to understand how cyberbullying victimization might be related to problem behaviors offline. The current study employs Robert Agnew's (1992; 1995; 2001) general strain theory (GST) to inform the possible offline consequences of cyberbullying victimization. As discussed later, GST argues that stressful life events produce negative effect (e.g., anger, frustration, or sadness) that can then lead to delinquent coping responses. Agnew proposed multiple sources of strain, and the present work assesses the extent to which cyberbullying victimization is another form of strain that produces negative emotional states that consequently lead to offline problem behaviors. The findings of this research can accordingly contribute to the literature regarding the repercussions of one type of victimization that occurs online. The paper will first describe the nature and extent of cyberbullying. Next, general strain theory will be briefly reviewed, including a discussion on the theoretical link between cyberbullying, strain, and offline problem behaviors. Following an explanation of the methodology employed in the current study, findings will be presented and discussed. Finally, implications for school administrators, parents, and researchers will be offered.

### ***THE NATURE AND EXTENT OF CYBERBULLYING***

Butterfield and Broad (2002) state that "social change always provides opportunities for the predatory behavior that is characteristic of a small number of people. With the new technologies that support the Internet, those who cannot adjust rapidly, and that is all of us, are at risk from those who can and will deploy technology as a criminal weapon." Cyberbullying is one such instantiation, and has been defined as "willful and repeated harm inflicted through the medium of electronic text" (Patchin & Hinduja, 2006). This is a broad definition which encapsulates all forms of harassment that commonly occur over the Internet using computers (and can also include cellular phones). Typically,

cyberbullying involves sending harassing or threatening e-mails and instant messages, posting derogatory comments about someone on a Website, or physically threatening or intimidating someone online. Minor forms of cyberbullying include being ignored, disrespected, picked on, or otherwise hassled. The more debasing forms of cyberbullying involve the spreading of rumors about someone, stalking someone, or physically threatening another person.

Cyberbullying, like traditional bullying, involves malicious aggressors who seek implicit or explicit pleasure or profit through the mistreatment of another individual. Moreover, violence is associated with aggression and involves the infliction of injury (e.g., emotional, psychological, physical). The behavior must also be repetitive. One instance of mistreatment may be harmful, but cannot be accurately characterized as “bullying.” Finally, the behavior of cyberbullies manifests perceived or actual power over a victim. One difference between traditional bullying and cyberbullying may relate to the nature of the inherent power differential. In traditional bullying, physical strength or stature often conveys a sense of power. Additionally, social competence (e.g., quick wit, cleverness) can give some adolescents a privileged position during interactions. In cyberspace, though, computer proficiency alone may result in a power differential. Computer-literate youth may be able to navigate the landscape of information technology in ways that allow them to take advantage of others. While traditional bullying tends to happen in places where the offender and victim are geographically proximal, cyberbullying is largely effectuated at a distance through the use of a computer and the Internet. Nevertheless, both forms of adolescent aggression can have lasting emotional and behavioral consequences among victims.

Empirical examinations of cyberbullying are largely lacking in academic spheres. However, a few studies do provide a foundational backdrop upon which an understanding of this phenomenon can be obtained. For example, Patchin and Hinduja (2006) analyzed a sample of 384 respondents 17 years of age and younger in 2004 to determine their experiences with the following cyberbullying behaviors: (1) Bothering someone online; (2) teasing in a mean way; (3) calling someone hurtful names; (4) intentionally leaving someone out of something; (5) threatening someone; and (6) saying unwanted sexually-related things to someone. Overall, approximately 30% of respondents reported being the victim of cyberbullying, 11% reported bullying others while online, and almost half (47%) witnessed cyberbullying. Regarding emotional responses, 42.5% of victims were frustrated, almost 40% felt angry, and over one-fourth (27%) felt sad. Repercussions of victimization were felt

at school (31.9%) as well as at home (26.5%). This study also found that almost one-third (32%) of victims removed themselves from the online venue in which the cyberbullying occurred, while one in five (20%) felt forced to stay offline completely for a period of time (Patchin & Hinduja, 2006). Finally, while most were comfortable talking about their victimization to a friend (56.6%), fewer than 9% of victims informed a teacher or an adult.

In a more recent analysis of data collected in 2005 from 1,388 adolescents, Hinduja and Patchin (2006) sought to identify the characteristics of adolescents who experienced cyberbullying. The researchers found that sex and race were not significantly related to cyberbullying victimization or offending, while age, computer proficiency, and amount of time spent online were positively related predictors. Furthermore, they identified a link between cyberbullying and other adolescent problem behaviors such as recent school difficulties, assaultive conduct, substance use, and even traditional bullying. That is, youth who reported being bullied or bullying others in real life in the previous six months were each 2.5 times more likely to be bullied or to bully others, respectively, on the Internet (Hinduja & Patchin, 2006).

Other research endeavors have analyzed the phenomenon of online harassment from a more generalized stance. In one recent work that defined Internet harassment as "an overt, intentional act of aggression towards another person online," 19% of young and regular Internet users were involved in online harassment within the previous year, and 12% of the youth sample reported aggressive behavior directed towards a peer online (Ybarra & Mitchell, 2004). Another study of adolescent girls in the United States found that 15% of the female respondents reported receiving disturbing communications whereas 3% acknowledged sending threatening or sexually explicit messages over the Internet (Berson et al., 2002).

Despite these initial explorations, the consequences of cyberbullying are not yet fully known. Insight from traditional bullying research may help to illuminate outcomes associated with this form of adolescent aggression. Research on traditional schoolyard bullying has linked victimization and offending with other antisocial behaviors, including vandalism, shoplifting, truancy, dropping out of school, fighting and drug use (Ericson, 2001; Loeber, 1984; Magnusson, Stattin, & Duner, 1983; Olweus, 1999; Patchin, 2002; Rigby, 2003; Tattum, 1989). Other studies have found that victims often feel vengeful, angry, frustrated, or depressed (Borg, 1998; Ericson, 2001; Rigby, 2003; Roland, 2002; Seals & Young, 2003). Notably, previous research has linked traditional bullying

victimization to the most serious form of school violence, namely several of the recent school shootings (Patchin, 2002; Vossekuil et al., 2002). A report by the United States Secret Service National Threat Assessment Center (Vossekuil et al., 2002:7) noted that in over two-thirds of the 37 school shootings that occurred between 1974 and 1999 the shooters felt “persecuted, bullied, threatened, attacked, or injured by others prior to the incident.” It is possible that peer victimization online may also lead to violent incidents at school and in the community if victims feel that their only means of recourse involves responding with extreme violence.

It has yet to be determined through quantitative research whether such severe dysphoric outcomes can befall the victims of online bullying. Nonetheless, it appears likely for three major reasons: (1) The permanence of computer-based messages (as compared with verbal statements); (2) the ease and freedom with which statements of hate can be made; and (3) the invasive nature of malicious text via personal cellular phones and personal computers at all hours of the day and all days of the week. One way to more fully understand the potential negative effects of cyberbullying victimization is to view the behavior as a source of stress or strain that impacts adolescents. General strain theory is one theoretical approach that recognizes how stressors may negatively affect one’s personal well-being.

### ***GENERAL STRAIN THEORY (GST)***

Robert Agnew began publishing ideas foreshadowing GST in 1985 and 1989. In these articles, he proposed that instead of one source of strain (failure to achieve a desired goal, Merton, 1938) there existed multiple sources. Agnew (1985) first argued that strain can result from the presentation of noxious stimuli by others, but in 1992, he more fully explicated his theory to include three types of strain which include the actual or anticipated:

1. failure to achieve positively valued goals;
2. removal of positively valued stimuli; and
3. presentation of negatively valued stimuli.

Essentially, GST rests on the idea that strain results from negative relationships with others. When we have an unpleasant interaction with another person, we are strained. A bully, for example, is presenting negatively valued stimuli (whether it is physical or emotional abuse) to his

or her victim. These sources of strain are linked indirectly to delinquency and other problems behaviors in that strain produces negative affect (i.e., anger, frustration, or sadness) which can manifest itself as either antinormative or normative behaviors. Deviance is one way in which an individual attempts to alleviate or cope with stressful situations. For example, the victim of a bully may seek revenge by assaulting the aggressor or seek to escape the negative feelings by using illicit drugs.

Several examinations of GST have found empirical support for the theory (Agnew & White, 1992; Hoffman & Miller, 1998; Mazerolle & Maahs, 2000; Mazerolle, Piquero, & Capowich, 2003; Paternoster & Mazerolle, 1994; Piquero & Sealock, 2000). In the first test, Agnew and White (1992) found general support for the theory. Strain (measured via several scales specifying negative life events, life hassles, negative relations with adults, and parental fighting) was found to be significantly and generally positively related to delinquency and drug use. Paternoster and Mazerolle (1994) later replicated Agnew and White's (1992) study using the first two waves of the National Youth Survey, which employed a shorter lag period for longitudinal examination (one year as opposed to Agnew and White's three years). These researchers concluded that strain leads to delinquency because it weakens ties to conventional institutions and strengthens relationships with deviant others. They also uncovered multiple complexities involving the conditioning effects of moral beliefs, delinquent disposition, and social support.

Other research has found that only some measures of strain are significantly associated with anger, such as feelings of injustice and experiencing noxious neighborhood conditions (Mazerolle & Piquero, 1998). Mazerolle, Burton, Cullen, Evans, and Payne (2000) also assessed the independent and mediating (with anger) effect of strain on delinquency and found that both anger and strain were independently related to delinquency, but that anger did not appear to mediate the relationship between strain and delinquency as theorized. Overall, research has indicated that anger is a significant mediator only in situations involving violence (Aseltine, Gore, & Gordon, 2000; Mazerolle et al., 2000; Mazerolle & Piquero, 1998; Piquero & Sealock, 2000).

It is easy to see how cyberbullying victimization can be a strain-inducing experience for adolescents. Clearly, textual attacks by one (or a group) upon another through cyberbullying intuitively involve the presentation of negatively valued stimuli. Agnew notes that adolescents are ". . . pressured into delinquency by the negative affective states—most notably anger and related emotions—that often result from

negative relationships” (Agnew, 1992:49). This statement aptly describes the actions of a frustrated victim of continuous harassment who ultimately breaks down and either attempts to resolve the strain through some general antinormative behavior, or seeks specific revenge on his or her aggressor.

Another aspect of the applicability of GST to cyberbullying concerns the significance of social acceptance among youth. Children and adolescents often desperately seek the affirmation and approval by their peers (Cooley, 1902). Cyberbullying, however, stymies that goal through rejection and exclusion. Research has shown that when individuals perceive themselves to be rejected or otherwise socially excluded, a number of emotional, psychological, and behavioral ill effects can result (Leary & Downs, 1995; Leary, Haupt, Strausser, & Chokel, 1998; Leary, Schreindorfer, & Haupt, 1995; Leary, Tambor, Terdal, & Downs, 1995). Accordingly, the failure to achieve peer acceptance as signaled through their victimization via cyberbullying may also produce stressful feelings.

Finally, students who are cyberbullied may fear for their safety offline due to intimidation and mistreatment online. While it is hoped that all youth would be able to use and benefit from the Internet without concern or expectation for negative interpersonal experiences in that setting, the potential for cyberbullying may arouse trepidation in some. Those who are victimized with intensity and repetition may become preoccupied with employing avoidance techniques in chat rooms, instant message conversations, and e-mail interactions. Since cyberbullying often involves threats and harassment initiated online via electronic text and then manifested offline via words or actions, victims may employ avoidance techniques in the school setting as well. When youth are constantly scanning the landscape of cyberspace or real space to guard against problematic interpersonal encounters, their ability to focus on academics, family matters and responsibilities, and pro-social choices is compromised to some extent. This may accordingly lead to scholastic and disciplinary problems, familial issues, or other stressful life events.

These examples collectively underscore the fact that cyberbullying—even though it occurs in a nontraditional context—can affect a child’s functional and developmental stability in ways that demand attention and deeper inquiry. Some might dismiss aggression via electronic text as trivial, or as a type of resiliency training requisite for maturity into adulthood and to acquaint a person with the “hard knocks” of life. Indeed, some have this opinion regarding traditional schoolyard bullying. Nevertheless, if the hypotheses of general strain theory are correct,



cyberbullying victimization may very well be a potent source of strain that is related to violence at school and elsewhere. The current study seeks to examine this important research question.

### ***CURRENT STUDY***

As a general theory of crime, GST is purported to explain many forms of deviance among many populations. Moreover, several studies have linked peer victimization generally to various forms of deviance (Ericson, 2001; Loeber, 1984; Magnusson et al., 1983; Olweus, 1999; Patchin, 2002; Rigby, 2003; Tattum, 1989; Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002; Wallace, Patchin, & May, 2005), with strainful feelings often playing at least some contributive role. Understanding the relationship involving victimization, strain, and deviant behavioral choices that those who are cyberbullied might make should help school administrators respond to the attendant emotional repercussions and maladaptive behavioral outcomes that follow. The current study attempts to determine whether cyberbullying is a source of strain related to offline problem behaviors. Specific research questions addressed include:

1. Is cyberbullying victimization related to offline problem behaviors?
2. Is cyberbullying victimization related to other measures of strain?
3. Is strain related to offline problem behaviors?
4. Does strain mediate the relationship between cyberbullying victimization and offline problem behaviors?

### ***METHOD***

#### ***Data Collection and Sample***

An online survey methodology was utilized to collect data from 1,388<sup>1</sup> Internet-using adolescents between December 22, 2004 and January 22, 2005.<sup>2</sup> This data collection strategy is appropriate given the nature of the phenomenon under consideration. Because cyberbullying occurs primarily online, it makes sense to target youth who are online. Since there does not exist an adequate sampling frame with contact information of possible cyberbullying offenders and victims, the best way to seemingly reach such a population was to select a number of Internet sites whose visitors

possessed demographic characteristics similar to the study's target population. As such, the survey instrument was linked to several Websites frequented by adolescents.<sup>3</sup> The survey was presented in its entirety to the respondent on one screen, and participants who were willing to provide their e-mail address as a means of contacting them were entered into a random drawing to win one of three \$30 gift certificates to Amazon.com. Both of these strategies have been found to improve response rate (Brick et al., 1999; Cho & LaRose, 1999).

Table 1 presents the descriptive characteristics of the sample. There were a total of 1,388 respondents under the age of 18 distributed approximately evenly across gender. The vast majority (80%) was Caucasian or White and from the United States (74.5%), and the average age

TABLE 1. Descriptive Characteristics of the Sample (N = 1388)

	Number	(%)
Male	688.0	49.6
Female	700.0	50.4
Caucasian/White	1107.0	79.9
Asian/Pacific Islander	79.0	5.7
Hispanic/Latino	73.0	5.3
Multiracial	44.0	3.2
African American	34.0	2.4
Indigenous/Aboriginal	3.0	0.2
Other	46.0	3.3
United States	1034.0	74.5
Canada	131.0	9.4
United Kingdom	90.0	6.5
Australia	62.0	4.5
Other	71.0	5.1
Mean age (range 6-17)	14.7	
Mean number of hours per week online (range 1-120)	17.8	
Mean variety of online activities (range 0-13)*	5.1	

Note: Online activities included e-mail or chat/IRC; research for school work; file transfer; using the newsgroups; product and travel information; online shopping; online auctions; online games; online stock trading; online banking; to collect information related to news, sports, or the weather; to collect information related to personal interests and hobbies; and web design.

of respondents was 14.7. It is also clear from this study that the youth who completed the survey are computer literate, spending an average of 18 hours per week online and engaging in over five different online activities.<sup>4</sup>

## Measures

### Independent Variables

The current study utilized two primary independent measures (cyberbullying victimization and strain) and three demographic control variables (age, race, and gender). *Cyberbullying victimization* is a summary scale that consisted of eight types of online victimization (see Table 2) ranging from relatively minor forms of bullying (e.g., being ignored) to more serious forms of harassment (e.g., being threatened). This scale had a mean of 1.5 (s.d. = 1.78) (see Appendix) and ranged from 0 to 8 with higher scores representing more varied experiences with cyberbullying victimization (Cronbach's  $\alpha = 0.76$ ). The *strain* scale consisted of nine items (see Table 3) with a mean of 3.82 and a standard deviation of 2.15 (Cronbach's  $\alpha = 0.66$ ). *Age* is a continuous variable representing the respondents age in years. *White* is a dichotomous variable representing respondents race where white = 1 and nonwhite = 0. Finally, *male* is a dichotomous variable where male = 1 and female = 0.

TABLE 2. Respondents Cyberbullying Victimization Experience

Type of Cyberbullying	(%)
Ignored by others	43.2
Disrespected by others	39.8
Been called names	18.2
Rumors spread by others	13.8
Threatened	12.6
Made fun of by others	9.9
Picked on by others	8.1
Scared for safety	4.8

Cronbach's  $\alpha$ : 0.76.

TABLE 3. Strain Scale Component Variables (N = 1388)

Type of Strain	(%)
I have been treated unfairly	66.7
Recently got a bad grade on an exam	63.6
Recently got into a disagreement with a family member	60.2
Recent death or hospitalization of close friend or family member	44.6
Recently got into a disagreement with a friend	46.2
I have had to deal with money problems	34.3
Broke up with significant other recently	29.3
Parents divorced	27.5
I have been a victim of a crime	11.0

Cronbach's  $\alpha$ : 0.66

### *Dependent Variable*

The respondent's self-reported offline problem behaviors were measured using an eleven-item index representing a variety of behaviors that they had engaged in during the previous six months (see Table 4). The behaviors included ranged from relatively minor forms of deviance (e.g., running away from home) to more serious forms of delinquency (e.g., carrying a weapon). Additionally, while some of the behaviors are directly related to the school environment (e.g., cheating on a test, skipping school), others regularly occur at or near school (e.g., assaulting a peer, damaging property). This index ranged from 0 to 11 with higher scores representing participation in a wider variety of deviant and/or delinquent behaviors (Cronbach's  $\alpha = 0.71$ ). The most common problem behavior was drinking liquor (33.6%), while the least common involved being sent home from school for bad behavior (4.5%).

## **RESULTS**

Before exploring the relationship between cyberbullying victimization, strain, and offline problem behaviors, it is useful to more fully examine the nature of cyberbullying. In the current sample, over 32% of males and over 36% of females had been victims of cyberbullying (see

TABLE 4. Respondents Self-Reported Offline Problem Behavior (%)

Type of Delinquency	At Least once in last 30 Days
Drank liquor	33.6
Cheated on a school test	29.7
Skipped school without an excuse	24.3
Assaulted peer	18.4
Damaged property	13.0
Shoplifted	9.5
Smoked marijuana	7.9
Assaulted adult	7.7
Ran away from home	6.1
Carried a weapon	5.2
Was sent home from school	4.5

Cronbach's  $\alpha$ : 0.71

Table 5). It is interesting that slightly more female respondents reported being a victim of cyberbullying.<sup>5</sup> The Internet may be the ideal environment in which more covert forms of bullying commonly employed by females are effectuated.<sup>6</sup> Concerning their locality, cyberbullying victimization occurred most often in chat rooms and via computer text message. Females were significantly more likely than males to report being victimized via e-mail (13 and 9.6%, respectively); no other significant differences were found when considering the other venues in which cyberbullying takes place.

Table 6 further illuminates the cyberbullying victimization experience by reporting the most common emotional responses to victimization. Notably, of those youth who were victimized, over 30% felt angry and over one-third (34%) felt frustrated as a result of being cyberbullied. This is particularly noteworthy given that researchers (Aseltine et al., 2000; Broidy & Agnew, 1997; Mazerolle et al., 2000; Mazerolle & Piquero, 1998) have suggested that delinquency and interpersonal violence is a more likely response when strain leads to these forms of negative affect. Interestingly, over one-third (35%) of respondents were not bothered by their experience with cyberbullying. This finding warrants further consideration but likely reflects the nature of the victimization.

TABLE 5. Cyberbullying Victimization by Location (%)

	Male N = 688	Female N = 700
Any location	32.4	36.3
In a chat room	23.6	24.1
By computer text message	17.7	19.7
By e-mail	9.6	13.0*
On a bulletin board	8.6	6.6
By cellular phone text message	3.9	4.7
In a newsgroup	1.0	1.0

\*p < .05 (two-tailed)

TABLE 6. Emotional Response by Victims of Cyberbullying (N = 468)

	(%)
Anger	30.6
Frustration	34.0
Sadness	21.8
Not bothered	35.0

Perhaps those who were not bothered only experienced transitory or minor forms of victimization (being ignored or disrespected) and therefore were only superficially affected.

In order to explore the relationship between cyberbullying victimization, strain, and offline problem behaviors, a series of stepwise ordinary least squares (OLS) regression models were estimated.<sup>7</sup> Controlling for demographic characteristics, these models estimated: (1) The relationship between cyberbullying victimization and offline problem behaviors, (2) the relationship between strain and offline problem behaviors, and (3) the relationship between cyberbullying victimization *and* strain and offline problem behaviors. Table 7 presents the results of these analyses.

As noted in Model 1, cyberbullying victimization is significantly and positively related to offline problem behaviors ( $\beta = .104$ ). That is, youth who experience cyberbullying are more likely to report participating in

TABLE 7. Ordinary Least Squares Regression: Delinquency Regressed on Strain and Cyberbullying Victimization (N = 1388)

	Model 1			Model 2			Model 3		
	b	S.E.	$\beta$	b	S.E.	$\beta$	b	S.E.	$\beta$
Constant	-1.038*	0.421		-1.948***	0.419		-1.929***	0.420	
Male	0.066	0.099	0.018	0.188	0.096	0.050	0.188	0.096	0.050
White	0.139	0.124	0.030	-0.029	0.121	-0.006	0.030	0.121	-0.006
Age	0.158***	0.028	0.149	0.161***	0.027	0.150	0.159***	0.028	0.148
Cyberbullying victim	0.109***	0.028	0.104				0.021	0.028	0.019
Strain				0.306***	0.023	0.348	0.303***	0.023	0.344
F(df)		13.95*** (4)			56.82*** (4)			45.56 (5)	
R <sup>2</sup> (Adjusted R <sup>2</sup> )		.039 (.036)			.147 (.144)			.147 (.144)	

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

problem behaviors offline. Not surprisingly, older youth were more likely to report more problem behaviors. Race and gender did not seem to have an effect on offline problem behaviors. Despite the statistically significant relationships, the model as a whole explained only about 4% of the variation in offline problem behaviors. Results of Model 2 indicate a significant relationship between strain and offline problem behaviors. Consistent with previous research, youth who experience more strain are more likely to engage in offline problem behaviors ( $\beta = .348$ ). This model explains a respectable yet modest 15% of the variation in offline problem behaviors. Results of Model 3 indicate that, when estimated together, strain continues to be significantly related to delinquency ( $\beta = .344$ ) while cyberbullying victimization no longer maintains statistical significance. This finding demonstrates that strain mediates the relationship between cyberbullying victimization and offline problem behaviors, perhaps because the effect of cyberbullying victimization on offline problem behaviors can be attributed to strain.<sup>8</sup>

## **DISCUSSION**

The goal of the current study was to shed light on the potential offline consequences of online victimization. One may argue that cyberbullying is not harmful because it generally does not involve direct physical contact between the offender and the victim. However, results from the present research suggest that victims of cyberbullying may be at risk for other negative developmental and behavioral consequences—including school violence and delinquency. Informed by general strain theory, this study has pointed to the emotional and psychological costs of cyberbullying victimization and empirically linked cyberbullying victimization with offline delinquent and deviant behavior.

Despite the contributions of this preliminary study, no social science research endeavor is without theoretical or methodological limitations. However, conscious attention and effort was given to minimize their salience. The principal limitation of the current study concerns the data collection strategy. Since data were collected exclusively online, generalizability to a known population is difficult. While we argue that the sample generally represents the larger population of youth on the Internet, we respect the unavoidable issues that arise when collecting data in the uncontained and unsupervised environment of cyberspace. It cannot necessarily be assumed, however, that respondents are more likely to misrepresent themselves or otherwise be untruthful due to



a greater measure of anonymity online (Walther, 2002). Deception or inaccuracies in self-reporting can occur in any data collection setting: Paper-based, telephone-based, or face-to-face. We therefore maintain that the online methodology was an appropriate approach to study the phenomenon at hand (Patchin & Hinduja, 2006).

In addition, since data were collected through a questionnaire to which respondents were directed from specific teen-oriented Websites, self-selection may bias the results. Not all Internet-using adolescents visited the Websites that linked to our survey and of those who did, not all chose to participate. Although the researchers made every effort to increase the diversity of potential participants by targeting a wide variety of Websites, this sample nevertheless may not be representative of all youthful Internet users. While generalization to a larger sample must be made with care (Couper, 2000; Witte, Amoroso, & Howard, 2000), it is believed that the data collected from those who participate generally reflect trends and patterns among online adolescents who did not participate. Despite the aforementioned methodological limitations, the current study points to several implications and recommendations for future research.

### ***Policy Implications***

#### *Resolving Strain*

Strain involves “relationships in which others are not treating the individual as he or she would like to be treated” (Agnew, 1992:48). It is clear that victims of cyberbullying do not wish to be treated in such a way, and therefore experience dysphoric emotions that may motivate or induce delinquent behaviors such as school violence or general delinquency. Proactive measures and preparedness are a necessity to preempt youth from attempting to reconcile strainful circumstances in an unconstructive manner. Three practical strategies logically follow to help resolve strain experienced by cyberbullying victims: The provision of education, counseling, and pro-social outlets.

First, schools are well-advised to provide supplementary health-education programming to students to reduce the possibility of strain resulting from all forms of peer harassment, including cyberbullying. For example, issues to be covered in class modules or assemblies might include (1) personal safety and defense in cyberspace, (2) the defusement of potentially explosive electronic interactions, (3) stress management, (4) the types of Internet behavior which warrant conveyance to law

enforcement, and (5) the explicit reminder that no one deserves to be on the receiving end of online aggression.

Second, schools must provide an empathic and nonthreatening environment where students are comfortable to candidly speak to teachers or counselors on campus. Students may need to vent, obtain solace and emotional support, and understand why their specific instance of Internet-based victimization may have happened. Providing this environment will also be effective in creating and maintaining an open line of communication between students and administrators. This in turn should contribute to a greater awareness of (and a more efficient response to) other related and unrelated social conflicts within the student body.

Finally, “pressure for corrective action” (Thaxton & Agnew, 2004:764) builds up among those who are strained, thereby hastening a need for release. In order for that release to enhance well-being among victims of any form of interpersonal violence, school and parents must make available emotional and behavioral outlets for youth to disengage from lingering negative affect and reconnect with positive feelings. This might include physical or mental extracurricular activities that occupy students’ time and help them find satisfaction and self-worth in exploring personal interests. Such activities will simultaneously provide a respite from consuming thoughts related to the harm they experienced via the words or actions of others online.

#### *Additional Administrative Actions*

Outside of mitigating negative behavioral choices that might stem from strain, specific deterrence efforts by administrators within the school setting to indispose individuals who might cyberbully may also be fruitful. Threat of punitive sanctions may reduce the occurrence of the problem, but it also may not. Nevertheless, teachers and school administrators must clearly express to students that peer victimization in any form will not be tolerated. At a minimum, school administrators must update their school violence and bullying policies to include electronic harassment. Clearly school personnel should take responsibility for cyberbullying that involves the use of school-owned computers or the school network. Moreover, school administrators and/or teachers may need to intervene even if school equipment or resources weren’t involved in the incident. For example, online threats or humiliating Web pages that reference the school must be thoroughly investigated by an appropriate school employee. Students should not fear coming to school based on threats made online and therefore school personnel must do all

in their power to create and maintain a safe and secure school environment. While there is still some discretion in the determination of what constitutes an act of cyberbullying, the presence of such a policy—combined with graduated discipline for unacceptable behavior—may help attenuate the contributive role of strain stemming from victimization via electronic text. Victims who are confident that a teacher or school administrator will take their experience seriously will feel more comfortable confiding in that person instead of potentially taking matters into their own hands.

Schools should also develop cyberbullying prevention plans to effectuate proper responses to threats and occurrences of harm. These begin with an all-inclusive analysis and review of prior cyberbullying incidents—including the perpetrators, victims, specific settings and influencing factors, and any extenuating circumstances that might have played a contributive role. Then, a risk assessment of vulnerabilities should occur, along with a determination of the efficacy of existing procedures in dealing with possibly hostile situations. After taking into account all of these aspects, a school may comfortably proceed with appropriate implementations. A procedure for the notification of, and cooperation with, local law enforcement should likewise be in place to quickly assist in any volatile incidents that might materialize (Patchin & Hinduja, 2006). In fact, an administrator at each school should serve as a liaison with a police agency to provide an opportunity for continual discourse concerning these types of issues.

### *Future Research*

It is imperative that researchers continue to empirically examine the causes and consequences of cyberbullying. As the current study provided an incipient understanding of the phenomenon, there are ways in which future work can build upon its merits. First, data from a more methodologically-controlled sample of adolescents would help to clarify and validate results from this and previous studies that employed online samples. Relatedly, a longitudinal research design would allow for a better understanding of cause and effect. Indeed, the current study is unable to determine with any level of certainty whether cyberbullying victimization caused offline problem behaviors, or if the relationship is simply correlational or even spurious. Second, the theoretical test would be improved with independent measures of affective outcomes such as anger, frustration, and sadness as well as measures for rival theoretical approaches (e.g., social control and social learning theories).

Third, evaluations of traditional bullying prevention programs should seek to identify their utility in also reducing online bullying. There are many programs that have demonstrated effectiveness at preventing traditional bullying at school (e.g., Olweus Bullying Prevention Program), yet no research has evaluated the extent to which these or any other programs are effective at preventing nontraditional forms of peer harassment.

### **CONCLUSION**

Negative interpersonal treatment of varying degrees and types continues to be a problem in many spheres of our society. The Internet is no exception, and likely serves as the stage for a great deal of harassment as many adolescents spend a significant amount of time online each day. While some might like to simply ignore or dismiss cyberbullying because it occurs online and therefore does not explicitly threaten the physical safety of the victim, the current study suggests that there are real consequences of cyberbullying victimization, including school problems and delinquency. Being a victim of cyberbullying appears to be yet another stress-inducing life experience that has the potential to manifest itself in maladaptive ways of coping. It is clear that cyberbullying has real implications for adolescent development, and that parents, teachers, and other stakeholders must be proactive in addressing this form of aggression so that it does not adversely impact the long-term trajectory of youth.

As children and teenagers communicate through e-mail, instant messages, chat rooms, and other electronic text-based mediums, interpersonal conflict is bound to transcend cyberspace and become manifest in real space. While some responsibility to oversee and intervene must be shouldered by the parents and guardians of adolescents, other adults in supervisory roles are not exempt from doing their part. The blurring of boundaries and distinctions between online and offline interaction among an adolescent population underscores the need for parents, school personnel, law enforcement officers, and other professionals to pay attention to both venues with equal attention. Because schools hold such a prominent place in the lives of school-aged children, it is likely that the school will serve as a front line institution as interpersonal conflict moves from the virtual to the real world. As such, teachers and school administrators must be vigilant in their efforts to prevent and address all forms of aggression and violence.

## NOTES

1. In total, approximately 7000 individuals responded to the survey. Even though the survey was linked to Websites that targeted adolescents, approximately 43% (N = 2,978) of the total number of respondents were older than 17 years of age and therefore excluded from the analysis. In addition, while efforts were made to target both male and female adolescents, the vast majority of respondents (82%) were female. To limit any biases that may arise from the disproportionate number of female respondents, a random number of females (N = 700) was drawn from the sample that was largely equal to the number of male respondents under the age of 18 (N = 688). This strategy, while not ideal, resulted in a final sample of 1,388 youth respondents that were relatively equal in terms of gender distribution.

2. It is not possible to personally obtain informed consent from participants of Internet-based surveys due to their geographic distance from the research team. As such, implied consent has generally been acceptable (Walther, 2002:213). We specifically provided potential participants with a checkbox to "check" and a SUBMIT button to click; these actions would clearly indicate their decision to take the survey and consequently infer consent (King, 1996). We also instructed minors to obtain permission from their parent or guardian before participating, and required the initials of the parent or guardian to be entered into a specific box before allowing the minor to proceed. To note, it is not possible to verify that minors actually obtained proper permission. This is an unavoidable issue associated with Web-based data collection from a spatially-diffused sample.

3. Seven Websites agreed to link to our survey, and included three online gaming sites, three musical artist sites, and a Harry Potter site.

4. Online activities among which the respondent could indicate participation included e-mail or chat/IRC; research for school work; file transfer; using the news-groups; product and travel information; online shopping; online auctions; online games; online stock trading; online banking; to collect information related to news, sports, or the weather; to collect information related to personal interests and hobbies; and Web design.

5. Research of gender differences in traditional bullying victimization has found mixed results. Some studies have found that boys report higher victimization than girls (Boulton & Underwood, 1992; Nansel et al., 2001; Olweus, 1993; Perry, Kusel, & Perry, 1988; Rigby & Slee, 1993; Whitney & Smith, 1993), while others have found minimal or no differences (Boulton & Smith, 1994; Duncan, 1999; Hoover, Oliver & Hazler, 1992; Melton et al., 1998).

6. More research is necessary to parse out the reasons for gender differences in online aggression. The current authors have a manuscript on this topic under peer review; please contact them for a copy of the manuscript.

7. Ordinary least squares regression requires many assumptions of the data, including a normally distributed dependent variable. Because we use a scale that represents the variety of delinquent behaviors participated in, (a measure that is highly skewed), the estimates may be biased. To test for any potentially problematic findings, the models were also estimated with a restricted maximum likelihood estimation which adjusts the standard errors for the nonnormality of the dependent variable. Additionally,

models were estimated using a binary dependent variable (yes/no participation in delinquency) using logistic regression. Results were substantively similar and as a result the easier to interpret OLS coefficients were presented. These additional models are available from the authors upon request.

8. Similar results were found when computing a recursive path model using Mplus. The indirect effect of cyberbullying victimization on delinquency through strain was statistically significant (std. estimate = 0.08;  $p < .05$ ).

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## APPENDIX

## Descriptive Statistics and Bivariate Correlations

Variables	Delinquency Scale	Strain Scale	Cyberbullying Victim Scale	Age	Male	White
Strain Scale	0.349**					
Cyberbullying	0.121**	0.227**				
Age	0.164**	0.031	0.109**			
Male	0.022	-0.066*	-0.003	0.027		
White	0.046	0.118**	0.048	0.076**	0.008	
Mean	1.60	3.82	1.50	14.71	0.50	0.80
Std. Dev.	1.88	2.15	1.78	1.77	0.50	0.40
Range	0-11	0-9	0-8	6-17	0-1	0-1
Cronbach's $\alpha$	0.71	0.66	0.76			

\*p &lt; .05; \*\*p &lt; .01; \*\*\*p &lt; .001