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# Cyber Bullying Behaviors, Anonymity, and General Strain Theory: A Study of Undergraduate Students at a South Eastern University in the United States

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## Abstract

*Cyber bullying is an intricate and ever-evolving form of bullying. Little is known about how cyber bullying is perpetrated at the collegiate level. Applying a General Strain Theory framework, the current study aims to assess the role of six university-related strain elements as possible predictors for cyber bullying and cyber-victimization. Survey questionnaires were administered to 15 undergraduate classes at a southeastern university (N = 406). Additionally, the role of internet anonymity on cyber bullying and cyber-victimization is addressed. Being threatened with losing or actually losing a scholarship and being placed on probation are identified as significant predictors of cyber-victimization. Being threatened with losing or actually losing a scholarship are found to be significant predictors of cyber bullying. Anonymity is established as negatively associated with the frequency of cyber bullying and cyber-victimization.*

Keywords: General Strain Theory, Cyber bullying, Cyber Victimization, College Student.

## Introduction

Cyber Bullying is a relatively new growing phenomenon due to society's heavy reliance on advanced technologies (Crosslin & Golman, 2014; Washington, 2014). With the advent of the internet, and especially later, with the proliferation of smart phones and online social media venues, Cyber Bullying has emerged as a common form of bullying. Cyber Bullying has been defined as the repeated harassment through online technologies (Adams & Lawrence, 2011; Bryce & Fraser, 2013; Crosslin & Golman, 2014; Kraft & Wang, 2010). Moreover, Cyber Bullying has multiple elements such as aggression through mobile technologies towards another individual, and can incorporate other forms of technologies that do not necessarily include the use of the internet, such as text messages

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through cell phone technologies, with the intent to cause harm or intimidation (Crosslin & Golman, 2014).

The majority of past research regarding Cyber Bullying has focused on juvenile populations in the middle to high school age range (Hay, Meldrum, & Mann, 2010; Jang, Song, & Kim, 2014; Patchin & Hinduja, 2011; Sticca & Perren, 2013). This follows reason since these are the primary ages at which bullying is likely to occur (Jang et al., 2014; Patchin & Hinduja, 2011). However, while traditional forms of face-to-face bullying tend to fade away as the transition is made from high school to college, Cyber Bullying may have a unique likeliness to remain during the undergraduate years (MacDonald & Roberts-Pittman, 2010; Melander, 2010; Reynolds, Henson, & Fisher, 2012). Given that each successive generation is increasingly familiar with and reliant on technological devices and internet access, it stands to reason that the current traditional college student body is more immersed in online and social media culture than any generation before it (Zickuhr, 2011). In fact, since smartphones increasingly became the norm during the past decade, it could be said that the current college student body is one of the first to have grown up alongside a culture of near constant internet access. In other words, with past generations, an observed desistance from Cyber Bullying during college could have been simply due to having naturally less involvement with online social outlets than would high school counterparts. This affords an important opportunity to assess how Cyber Bullying has changed or remained uninterrupted when viewed in a college setting.

When discussing Cyber Bullying, it is necessary to include the subject of anonymity. Often, anonymity can lead to greater feelings of harm by victims of Cyber Bullying (Dredge, Gleenson & Piedad, 2014; Sticca & Perren, 2013). The fear of not knowing the orientation of an attacker along with not having the ability to confront said attacker can exacerbate feelings of vulnerability and helplessness. Equally as concerning, when a cyber bully attacks anonymously, it makes it that much more difficult to punish the responsible party.

Undergraduate college students are also unique in that they are experiencing stressors – often from many different sources – that they may be encountering for the first time. Between the less forgiving classroom climates, moving away from home, learning to live with peers of varying backgrounds, dealing with financial budgeting, trying to make new friends, searching for a job following graduation, and a slew of other sources of negative feelings, college has the potential to be one of the most trying periods of life. Naturally, these negative experiences can cause college students to act out. Agnew's (1992; 2001) General Strain Theory of crime and delinquency (GST) seeks to explain the link between stressful events and feelings – termed "strain" – and the harmful reactions they sometimes provoke. The current study aims to explore the nature of Cyber Bullying in college students, to identify which types of strain are most likely to be associated with undergraduate student Cyber Bullying perpetration and victimization, and to determine if anonymity has an effect on Cyber Bullying perpetration and victimization.

## Literature Review

### *General Strain Theory*

Agnew's general strain theory (1992; Agnew & White, 1992) argues that people, who experience strains, are more likely to engage in crime or deviant behavior. Strain can come in three different forms, which include the inability to obtain positive stimuli, threat or actual loss of positive stimuli, and the presentation of negative stimuli. These strains can

eventually manifest so that individual feeling the strain acts out against those who are causing the frustration. Crime is not directly related to the strain, but is a coping mechanism that strained individuals turn to (Agnew, 2001; Patchin & Hinduja, 2011).

The first form of strain is the failure or prevention from achieving positively valued goals (Agnew 1992). The essential strain at work here is the dissimilarity between what an individual hopes or is expected to achieve and what that individual is actually able to achieve. In the college setting, this may be found in grades, which were lower than anticipated by the student or in parental disapproval of major/career selection or disapproval of grades received. Additionally, a student who may compare his or her goals with a peer may not be as successful in achieving them, as that peer is when both parties apply similar effort. These misalignments between goals and actual achievements can lead to anger, resentment, and general unhappiness (Agnew, 1992).

The second form of strain is the loss, threat of removal, or removal of positively valued stimuli (Agnew, 1992). This can be seen in many aspects of college life. For example, moving away from friends or family is a loss of positive stimuli that may cause feelings of sadness and loneliness. Likewise, if a student is put on academic probation, he or she may feel discouraged. If that same student remains on academic probation for long enough, he or she may lose a scholarship or may be deemed ineligible to participate in university extracurricular activities. These are examples of a threat of removal, and ultimately, the removal of positively valued stimuli.

The third form of strains is the presence of harmful or negatively valued stimuli (Agnew, 1992). This may be thought of as a classic understanding of stressful life events. For a college student, this may take the form of professors or peers not treating that student with respect. This may also refer to fretting about money, student loans, or finding a job upon graduation. Similarly, this type of strain can also refer to environmental strains such as noisy or uncomfortable living conditions that might be brought about by loud roommates, broken air conditioners, high population density, etc.

### *Cyber Bullying and Strain*

Research has examined traditional bullying and Cyber Bullying through the lens of general strain theory. The role of strain in causing delinquency with a Cyber Bullying context sought to identify, among other things, whether previous bullying victimization – both traditional and cyber – was a reliable predictor of future delinquent activity (Hay et al., 2010; Jang et al., 2014; Patchin & Hinduja, 2011).

Additionally, evidence was found to suggest that there is a link between traditional bully victimization and Cyber Bullying perpetration. The youths who had experienced a traditional bully attack externalized their strain by becoming cyber attackers (Ak, Özdemir, & Kuzucu, 2015; Jang et al., 2014), and Cyber Bullying victimization, in turn, was significantly related to delinquency (Hay et al., 2010). Furthermore, these acts of delinquency included both externalized acts (acts committed against property or people), but also internalized acts, such as self-harm.

### *Cyber Bullying and Anonymity*

A firm relationship has been established by past research regarding online aggression, (e.g. trolling, harassment, misuse of personal info, and mocking) and anonymous status of those perpetrating the Cyber Bullying. Studies on Cyber Bullying and anonymity aimed

to find how anonymity is related to Cyber Bullying or online aggressiveness (Barlett, 2015; Moore et al., 2012; Wright 2013). Online posts maintaining the posters' anonymity were more likely to be aggressive to other forum users (Moore et al., 2012), and students were more likely to engage in Cyber Bullying when anonymity was present (Barlett, 2015). In a longitudinal study, due to learning about the anonymous nature of Cyber Bullying during the first survey phase, students were more likely to have exhibited online aggression during the period leading up to the second survey phase (Wright, 2013).

It should be noted that total online anonymity can be difficult to measure. Anonymity can be said to be the absence of identifying personal information. Some young people may spend some of their time on social media sites that encourage total identifying information to be made public, and some of their time on sites that foster anonymous participation. It is also possible that by visiting more than one online social media profile "owned" by the same person, a web user can start to piece together a slew of different types of information, effectively creating a relatively complete image of the subject. For this reason, only by measuring how much personal information a person discloses across their entire internet "stomping grounds" can a sense of their actual online anonymity be realized.

### Current Study Hypotheses

The current study is determined to test the relationship between certain types of strain that college students are likely to experience and Cyber Bullying behavior.

**Hypothesis 1** – College students who exhibit higher levels of strains (the failure or prevention from achieving positively valued goals, the loss of positively valued stimuli, and the presence of negatively valued stimuli) are more likely to engage in Cyber Bullying behavior than students who exhibit lower levels of strains.

Because the college students' strains can be linked to Cyber Bullying victimization as well as Cyber Bullying perpetration (Ak et al., 2015; Guo, 2016; Jang et al., 2014; Kowalski et al., 2014), the second hypothesis of this study is to test the relationship between college student's strains or stressor and Cyber Bullying victimization.

**Hypothesis 2** -- College students who exhibit higher levels of strains (the failure or prevention from achieving positively valued goals, the loss of positively valued stimuli, and the presence of negatively valued stimuli) are more likely to be victims of Cyber Bullying than students who exhibit lower levels of strains.

The current study also aims to assess the effect of anonymity on the Cyber Bullying behavior and victimization. The hypotheses to be tested are as follows:

**Hypothesis 3** - Anonymity has an effect on Cyber Bullying behavior.

**Hypothesis 4** - Anonymity has an effect on Cyber Bullying victimization.

### Methodology

#### Data

The current study utilized a multi-stage cluster sampling method. Survey questionnaires were administered at a large southeastern university in the U.S. A., during the fall 2015 semester. Eighteen classes were randomly selected from academic colleges' every section of all undergraduate courses being offered during the fall 2015 semester. In order to ensure that the sample courses were representative of the entire student body, the number of courses chosen from each college was stratified proportionally with the number of students majoring in disciplines offered by those colleges. After the selection of the courses,

instructors of the courses will be asked to allow their students as subjects the study and to encourage them to complete the survey. All students in the courses selected are asked to complete the survey. The total number of completed questionnaires was 406 from 15 out of 18 randomly selected courses (83 %). The participating university's Institutional Review Board (IRB) approved this study.

### **Measures**

#### *Cyber Bullying perpetration and victimization*

Six items from the 28 items of the revised Cyber Bullying Inventory (Brack & Caltabiano, 2014) were selected to measure Cyber Bullying perpetration and victimization. The respondents were asked, "How often have you done the six instances described to others" (perpetration), and "How often have the six instances described happened to you" (victimization). The six instances are: 1) threatening in online forums (like chat rooms, Facebook or Twitter), 2) insulting in online forums (like chat rooms, Facebook or Twitter), 3) sharing private internet conversations without the other's knowledge (such as chatting with a friend on Skype with other(s) in the room), 4) making fun of comments in online forums (such as Facebook), 5) sending threatening or hurtful comments through email or text messages, and 6) published online an embarrassing photo without permission. All items were on a 4-point scale: 1="Never," 2="Once," 3="Two or three times," and 4="More than three times." The mean for Cyber Bullying perpetration is 7.62, with a standard deviation of 2.27. Because the most respondents (65% to 95%) had not engaged in each Cyber Bullying behavior, the Cronbach's Alpha coefficient (.56) was low. More than half (51%) of the respondents reported they had never done the six-Cyber Bullying instances to others. About half (49.6%) of the respondents reported six-victimization instances never happened to them. The mean for Cyber Bullying victimization is 7.93 with a standard deviation of 2.97. Cronbach's Alpha coefficient was 0.74. A composite score was created to measure each Cyber Bullying perpetration and Cyber Bullying victimization.

#### *General strain variables*

Based the Smith et al. (2013) study on college student cheating and plagiarism, six strain variables were developed. The first strain variable, personal academic shortcomings, is a composite variable of four Likert-type items on a 4-point scale ranging 1="Strongly disagree" to 4="Strongly agree" (Mean=9.33, SD=2.29). These four items are 1) "I am a poor test taker," 2) "I tend to procrastinate when it comes to schoolwork," 3) "For some reason, I have a problem with class attendance," and 4) "I have a short attention span, which interferes with my academic life."

The second strain variable is the level of perceived injustice that students feel during their college careers. This variable is a composite variable of two Likert-type items on a 4-point scale ranging 1="Strongly disagree" to 4="Strongly agree" (Mean=5.65, SD=1.70): 1) "Students who cheat have an unfair advantage for getting a good job following graduation," and 2) "Students who cheat have an unfair advantage for getting into a graduate or professional school following graduation."

The third strain variable which addresses whether a student has ever been placed on academic probation while in college is a dichotomous variable coded 0 = no and 1 = yes. About 17 percent of the sample admitted to having been placed on academic probation at

some point during their college career, with a standard deviation of .37. The fourth strain variable that describes whether students felt like they had to sit through insipid classes (classes lacking meaning or interesting content for the respondent) was a 4-point Likert-type item. The mean for this variable is 2.17 with a standard deviation of .76.

The final two strain variables assessed how many students had been threatened with losing or had actually lost a scholarship or academic eligibility for university athletics or other extracurricular activities. These variables were dichotomous and were coded 0 = no, they had not been threatened with losing or actually lost the described privilege and 1 = yes, they had been threatened with losing or actually lost the privilege. About 21 percent of students admitted to having been threatened with losing or having actually lost a scholarship, with a standard deviation of .41. Only about five percent of students admitted to being threatened with losing or having actually lost academic eligibility for collegiate sports or other extracurricular activities, with a standard deviation of .22.

### *Anonymity*

The anonymity variable is intended to measure each student's overall online anonymity. The respondents were asked to indicate whether they disclosed eight separate items of personal information anywhere online. While the majority of students admitted that they disclosed three elements - age, gender, and pictures of themselves - the remaining five items were a vastly more polarizing. About half of students admitted to posting at least one of the remaining elements - their telephone number, goals/aspirations, sexual information, emotional/mental distresses, and family conflicts - somewhere online. Subsequently, the other half of the respondents did not post any of these five. The anonymity variable was coded as 0 = low anonymity and 1 = high anonymity. The low anonymity group includes those students that admitted to posting at least of the other five elements. The high anonymity group includes those students that did not post any of the other five elements, which offered them a higher level of online anonymity than the low anonymity group. About 49 percent of the sample falls into the high anonymity group, with a standard deviation of .50. The remaining 51 percent is classified as low anonymity.

### *Control variables*

Respondents were asked to write their age, in years. The minimum age was 18 with the maximum 54. It is worth noting that students were asked only to consent to complete the questionnaire if they were at least 18 years of age, and there were students in the sample classes that did not to fill out a questionnaire because they were younger than 18. The average age of the sample is 21.86 with a standard deviation of 4.38. The gender variable is dichotomous and coded 0 = male and 1 = female. The sample is about 58 percent female, with the remaining 42 percent identifying as male. The race variable had five categorical response options. White students consist of about 60 percent of the sample, African-American consist of about 21 percent, and Hispanic, Asian, and Other race consist of about seven percent, four percent, and five percent, respectively. For the classification variable, the freshman was coded 1, the sophomore was coded 2, the junior was coded 3, and senior was coded 4. About 18 percent of the sample indicated freshman, about 13 percent indicated sophomore, about 36 percent indicated junior, and about 33 percent indicated senior. The mean for this variable is 2.83 with a standard deviation of

1.08. The minimum Grade Point Average (GPA) is 1.70 and the maximum is 4.00. The average GPA is 3.27 with a standard deviation of .45.

**Table 1. Summary of Study Variables**

Variable	N	Min/Max	Mean	SD
<b>Dependent</b>				
Cyber Bullying perpetration scale	398	6-18	7.62	2.27
Victimization scale	385	6-24	7.93	2.97
<b>Independent</b>				
Academic shortcomings	395	4-16	9.33	2.29
Perceived injustice	402	2-8	5.65	1.70
Academic probation	404	0-1	.17	.37
Insipid classes	402	0-4	2.17	.76
Lose scholarship	404	0-1	.21	.41
Lose athletic eligibility	404	0-1	.05	.22
<b>Moderating</b>				
Anonymity	406	0-1	.49	.50
<b>Control</b>				
Age	401	18-54	21.86	4.38
Female	402	0-1	.58	.49
Race				
White	406		.60	.49
African American	406		.21	.41
Hispanic	406		.07	.25
Asian	406		.04	.21
Other	406		.05	.23
Classification	403	1-4	2.83	1.08
GPA	358	1.7-4.1	3.27	.45

## Results

Multiple regression was utilized to examine the predictive effects of general strain and anonymity on the Cyber Bullying perpetration and victimization. The results of the multiple regression analysis of the study variables for predicting Cyber Bullying perpetration ( $R^2 = .116$ ,  $df = 15$ ) is shown in Table 2. After controlling for all study variables, the status of gender as a significant predictor of Cyber Bullying perpetration remains stable ( $\beta = -.158$ ,  $t = -2.890$ ,  $p < .01$ ). Female students are shown to be less likely to frequently engage in Cyber Bullying than male students are.

Of the strain variables, personal academic shortcomings ( $\beta = .105$ ,  $t = 1.087$ ,  $p < .10$ ) and being threatened with losing or actually losing a scholarship ( $\beta = .102$ ,  $t = 1.770$ ,  $p < .10$ ) are significant predictors of Cyber Bullying perpetration. Perceived injustice ( $\beta = -.065$ ,  $t = -1.216$ ) and being threatened with losing or actually losing academic eligibility ( $\beta = -.032$ ,  $t = -.546$ ), being placed on academic probation ( $\beta = .077$ ,  $t = 1.189$ ), and experiencing insipid classes are not significantly predicted Cyber Bullying perpetration. Lastly higher internet anonymity remains strongly associated with lower levels of

cyberbully perpetration frequency ( $\beta = -.168$ ,  $t = -3.110$ ,  $p < .01$ ). After controlling for all study variables, students with higher internet anonymity are much less likely to engage in Cyber Bullying often when compared with students with lower internet anonymity.

**Table 2. Multiple Regression of General Strain and Anonymity on Cyber Bullying Perpetration (N = 341)**

Variable	B	SE	Beta	t
<b>Controls</b>				
Age	.001	.030	.003	.046
Female	-.709**	.245	-.158	-2.890
Race (White = ref.)				
African American	-.300	.305	-.054	-.982
Hispanic	-.510	.456	-.060	-1.118
Asian	-.706	.641	-.059	-1.102
Other	.079	.525	.008	.151
Classification	-.065	.126	-.029	-.514
GPA	-.263	.331	-.054	-.792
<b>Blocked Goals</b>				
Academic shortcoming	.101*	.056	.105	1.807
Perceived injustice	-.085	.070	-.065	-1.216
<b>Present (-) Stimuli</b>				
Academic probation	.463	.389	.077	1.189
Inspid classes	.069	.168	.023	.409
<b>Remove (+) Stimuli</b>				
Lose scholarship	.544*	.307	.102	1.770
Lose athletic eligibility	-.313	.573	-.032	-.546
<b>Anonymity</b>	-.744***	.239	-.168	-3.110
<b>Constant</b>	8.742***	1.696		5.154
<b>R<sup>2</sup> (df)</b>	.116 (15)			

\*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .10$

Table 3 shows the results of the multiple regression analyses for cyber-victimization ( $R^2 = .099$ ,  $df = 15$ ). The only statistically significant control variable is Hispanic comparing with White ( $\beta = -.151$ ,  $t = -2.733$ ,  $p < .01$ ). Being female ( $\beta = -.070$ ,  $t = -1.248$ ), being African American ( $\beta = -.083$ ,  $t = -1.458$ ) or Asian ( $\beta = -.040$ ,  $t = -.735$ ), being of a higher classification ( $\beta = -.066$ ,  $t = -1.129$ ), and having a higher GPA ( $\beta = -.020$ ,  $t = -.281$ ) are not significantly associated with the cyber-victimization scale.



Within the strain variables, being threatened with or actually losing a scholarship is a statistically significant predictor of being cyberbullied more frequently ( $\beta = .121$ ,  $t = 2.054$ ,  $p < .05$ ). Students who have experienced these strains are still more likely to be cyber-victimized more often than students who have not experienced the strains, even while controlling for all other study variables. Being placed on academic probation is newly found to be a significant predictor as well, after controlling for other variables ( $\beta = .137$ ,  $t = 2.060$ ,  $p < .05$ ). Students who have been placed on academic probation are more likely to be the victim of Cyber Bullying more often than students who have not been placed on academic probation.

Anonymity remains a significant predictor when controlling for all study variables ( $\beta = -.127$ ,  $t = -2.307$ ,  $p < .05$ ). Students with higher anonymity are less likely to be cyber-victimized more often than students with lower anonymity are.

**Table 3. Multiple Regression of General Strain and Anonymity on Cyber Bullying Victimization(N = 332)**

Variable	B	SE	Beta	t
<b>Controls</b>				
Age	-.003	.040	-.004	-.064
Female	-.413	.331	-.070	-1.248
Race (White = ref.)				
African American	-.600	.412	-.083	-1.458
Hispanic	-	.611	-.151	-2.733
	1.671***			
Asian	-.659	.896	-.040	-.735
Other	.565	.689	.046	.820
Classification	-.193	.170	-.066	-1.129
GPA	-.125	.446	-.020	-.281
<b>Blocked Goals</b>				
Academic shortcoming	.062	.075	.050	.829
Perceived injustice	.083	.096	.048	.867
<b>Present (-) Stimuli</b>				
Academic probation	1.086**	.527	.137	2.060
Insipid classes	-.145	.228	-.037	-.638
<b>Remove (+) Stimuli</b>				
Lose scholarship	.856**	.417	.121	2.054
Lose athletic eligibility	-.198	.808	-.015	-.245
<b>Anonymity</b>	<b>-.746**</b>	<b>.323</b>	<b>-.127</b>	<b>-2.307</b>
Constant	8.748***	2.256		3.877
R <sup>2</sup> (df)	.099 (15)			

\*\*\*p < .01, \*\*p < .05, \*p < .10

## Discussion

The current study first aimed to assess the role that strain would have in predicting Cyber Bullying perpetration and victimization. In the analysis phase, being threatened with losing or actually losing a scholarship and academic shortcomings have significant positive relationships with having cyberbullied in the past. Academic shortcomings and being threatened with losing or actually losing a scholarship are highly correlated since academic shortcomings are likely to lead to lower grades, which would cause the loss of a scholarship. It is no wonder, then, that these two strains work in conjunction to help predict Cyber Bullying perpetration. As students become frustrated with school, it is not out of line to assume that Cyber Bullying tendencies may arise more frequently. It is also believed that the effect of GPA on the Cyber Bullying behaviors is spurious. Because students who were receiving worse grades would almost definitely be at greater risk of having scholarships revoked, and would, therefore, interfere with the relationship between losing a scholarship and having cyberbullied.

Another aim of the current study was to observe the effects of internet anonymity on Cyber Bullying perpetration and victimization. It was observed that when anonymity is high, students are less likely to engage in Cyber Bullying perpetration. It would seem that increased anonymity, that is to say, with less personal information disclosed online, is less likely to cause students to cyberbully. This is interesting because it contradicts previous literature that finds that anonymity increases the likelihood of Cyber Bullying (Barlett, 2015; Moore et al., 2012; Wright, 2013).

Given the tightly knit nature of the relationship between Cyber Bullying perpetration and victimization, it is logically sound to believe that college students' strain will be an impact on both Cyber Bullying perpetration and victimization. It might indicate that Cyber Bullying and cyber-victimization occur as events stemming from the same incident, if not simultaneously (Gamez-Guadix, Gini & Calvete, 2015). As found by Ak et al. (2015), being the victim of Cyber Bullying causes an increase in the felt strain of the victim, and that strain will, in turn, lead to delinquent coping, which manifests in the form of Cyber Bullying perpetration. We may anticipate that Cyber Bullying victims externalized their negative experiences and emotions by becoming cyberbullies. Because of this relationship, being placed on academic probation and being threatened with losing or actually losing a scholarship as college students' strain factors are significantly related to Cyber Bullying victimization.

The final objective of the current study is to address the effect of anonymity might have on cyber-victimization. A higher level of internet anonymity was shown to reduce cyber-victimization. One plausible explanation is that students who have a higher level of internet anonymity do not actively engage in cyberspace, and do not post, in turn, much personal information online simply because they do not make social media or communication with others a major purpose for utilizing the internet. Because they do not frequent social media sites, which prompt users to post revealing information, they have a high level of internet anonymity. The other consequence to this is that they do not find themselves in a situation where they are likely to be a cyberbully or victim of Cyber Bullying. This finding questions the previous interpretation of anonymity's ability to hold water (Barlett, 2015; Wright 2013).

## Conclusion

The results of the current study cannot be boiled down to general, sweeping conclusions. The strain was, in some instances, found to be a significant predictor of both cyberbully perpetration and cyber-victimization, but the majority of the types of strain measured in the current study were not shown to be significantly associated with both, or even either. In light of the findings regarding strain's impact on Cyber Bullying and cyber-victimization, universities should seek to offer counseling or other therapy-based activities in which students can enroll that are specifically focused on students who have lost a scholarship or been placed on academic probation. Further action should be taken by universities to educate students about the trend that posting more information online could put them at a greater risk for cyber-victimization.

Future research on the matter should aim to further explore the relationship between strain and various elements of Cyber Bullying. The current study only sought to measure how university-related strain would act as a predictor for Cyber Bullying and cyber-victimization. This leaves many other facets of strain that should be explored to paint a complete picture of how strains that pertain to other portions of university students' lives can be linked to perpetration and victimization. Additionally, future research should try measuring anonymity in ways other than what is stated in the current study, as it is possible that there are better ways to assess levels of online anonymity of college students.

## Limitations

One notable limitation is the relatively low reliability scores of two of the scale variables used in the analysis. Scales with greater reliability would indicate greater validity, and would possibly have yielded stronger results, especially in the interaction term analysis phase. In future studies, greater effort should be taken to ensure that the strain and Cyber Bullying scale variables are representative of what they are intended to measure.

Another notable limitation of the current study is the inability of the data to help explain certain relationships between variables, such as those which portray race, gender, or anonymity as reliable predictors of perpetration and victimization. For this reason, it is difficult to assign causation in instances where variables show significant relationships with the dependent variables, but are not highly correlated with many, if any, other variables. These singular relationships with the dependent variable, such as the relationship between anonymity and the two scale dependent variables, can only be contextualized if they align with past research. However, in instances where the relationships seem contrary to previous findings (as seen in the current study), there are not many conclusions that can be drawn about them without extraneous indicators within the data. The only possible conclusion is that future research of Cyber Bullying in college students would need to address questions that specifically aim to understand the relationship between anonymity and Cyber Bullying perpetration and victimization.

One final limitation is the limited way with which anonymity was actually measured with the survey questionnaire. While it is helpful to a certain extent to know how much of the students' personal information can be found online, it would be even more helpful to know if students cyberbullied or were cyber-victimized on the social media outlets where sensitive information can be found. If it was found that students post personal information on one site, but are bullied on a different site, research could then work to better explain the relationship that anonymity has with Cyber Bullying and victimization.

As it stands, the current study can only confidently conclude that students who post less information online are less likely to cyberbully or be cyber-victimized more often, but the relevance of this relationship to the possible moderating effects of anonymity is rather narrow.

## References

- Adams, F. D., & Lawrence, G. J. (2011). Bullying victims: The effects last into college. *American Secondary Education, 90*(1), 4–13.
- Agnew, R. (1992). Foundation for a General Strain Theory of crime and delinquency. *Criminology, 30*(1), 47–87.
- Agnew, R. (2001). Building on the foundation of General Strain Theory: Specifying the types of strain most likely to lead to crime and delinquency. *Journal of Research in Crime and Delinquency, 38*(4), 319–361.
- Agnew, R., & White, H. R. (1992). An empirical test of General Strain Theory. *Criminology, 30*(4), 475–500.
- Ak, S., Özdemir, Y., & Kuzucu, Y. (2015). Cyber-victimization and Cyber Bullying: The mediating role of anger: Don't anger me! *Computers in Human Behavior, 49*, 437–443.
- Barlett, C. P. (2015). Anonymously hurting others online: The effect of anonymity on Cyber Bullying frequency. *Psychology of Popular Media Culture, 4*(2), 70–79.
- Brack, K., & Caltabiano, N. (2014). Cyber Bullying and self-esteem in Australian adults. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 8*(2), article 7. doi: 10.5817/CP2014-2-7.
- Crosslin, K., & Golman, M. (2014). Maybe you don't want to face it: College student's perspectives on Cyber Bullying. *Computers in Human Behavior, 41*, 14–20.
- Dredge, R., Gleeson, J. M., & de la Piedad, G., X. (2014). Risk factors associated with impact severity of Cyber Bullying victimization: A qualitative study of adolescent online social networking. *Cyberpsychology, Behavior and Social Networking, 17*(5), 287–291.
- Guo, S. (2016). A meta-analysis of the predictors of Cyber Bullying perpetration and victimization. *Psychology in the Schools, 53*(4), 432–453.
- Gamez-Guadix, M., Gini, G., & Calvete, E. (2015). Stability of Cyber Bullying victimization among adolescents: prevalence and association with bully-victim status and psychosocial adjustment. *Computers in Human Behavior, 52*, 140–148.
- Hay, C., Meldrum, R., & Mann, K. (2010). Traditional bullying, cyber bullying, and deviance: A General Strain Theory approach. *Journal of Contemporary Criminal Justice, 26* (2), 130–147.
- Hinduja, S., & Patchin, J. W. (2012). Cyber Bullying: Neither an Epidemic Nor a Rarity. *European Journal of Developmental Psychology, 9*(5), 539–543
- Jang, H., Song, J., & Kim, R. (2014). Does the offline bully-victimization influence Cyber Bullying behavior among youths? Application of General Strain Theory. *Computers in Human Behavior, 31*, 85–93.
- Kraft, E., & Wang, J. (2010). An exploratory study of the Cyber Bullying and cyberstalking experiences and factors related to victimization of students at a public liberal arts college. *International Journal of Technoethics, 1*(4), 74–91.

- Kowalski, R. M., Giumetti, G., Schroeder, A., & Lattanner, M. (2014). Bullying in the digital age: a critical review and meta-analysis of Cyber Bullying research among youth. *Psychological Bulletin*, *140*, 1073–1137.
- MacDonald, C., & Roberts-Pittman, B. (2010). Cyber Bullying among college students: Prevalence and demographic differences. *Social and Behavioral Sciences*, *9*, 2003–2009.
- Melander, L. A. (2010). College students' perceptions of intimate partner cyber harassment. *Cyberpsychology, Behavior and Social Networking*, *13*(3), 263–268.
- Moore, M. J., Nakano, T., Enomoto, A., & Suda, T. (2012). Anonymity and roles associated with aggressive posts in an online forum. *Computers in Human Behavior*, *28*(3), 861–867.
- Patchin, J. W., Hinduja, S. (2011). Traditional and nontraditional bullying among youth: A test of General Strain Theory. *Youth and Society*, *43*(2), 727–751.
- Reyns, B. W., Henson, B., & Fisher, B. S. (2012). Stalking in the twilight zone: Extent of cyberstalking victimization and offending among college students. *Deviant Behavior*, *33*(1), 1–25.
- Smith, T. R., Langenbacher, M., Kudlac, C., & Fera, A. G. (2013). Deviant reactions to the college pressure cooker: A test of General Strain Theory on undergraduate students in the United States. *International Journal of Criminal Justice Sciences*, *8*(2), 88–104.
- Sticca, F., & Perren, S. (2013). Is Cyber Bullying worse than traditional bullying? Examining the differential roles of medium, publicity, and anonymity for the perceived severity of bullying. *Journal of Youth and Adolescence*, *42*(5), 739–750.
- Washington, E. W. (2014). An overview of Cyber Bullying in higher education. *Adult Learning*, *26*(1), 21–27.
- Wright, M. F. (2013). The relationship between young adults' beliefs about anonymity and subsequent cyber aggression. *Cyberpsychology, Behavior and Social Networking*, *16*(12), 858–862.
- Zickuhr, K. (2011). Generations and their gadgets. *Pew Research Center*. Retrieved from <http://pewinternet.org/Reports/2011/Generations-and-gadgets.aspx>.