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Lisa Melander

University of Nebraska at Lincoln, lisa.melander3@gmail.com

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EXPLAINING COLLEGE PARTNER VIOLENCE IN THE DIGITAL AGE:
AN INSTRUMENTAL DESIGN MIXED METHODS STUDY

By

Lisa A. Melander

A DISSERTATION

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EXPLAINING COLLEGE PARTNER VIOLENCE IN THE DIGITAL AGE:
AN INSTRUMENTAL DESIGN MIXED METHODS STUDY

Lisa A. Melander, Ph.D.

University of Nebraska, 2010

Adviser: Kimberly A. Tyler

Intimate partner violence is prevalent in contemporary society and certain groups of individuals such as college students are particularly at high risk for becoming involved in aggressive relationships. Despite the detailed body of literature that examines the risk factors for in-person partner violence, researchers have been criticized for their lack of attention to other behaviors that may be considered abusive. One new area of research is cyber aggression, which refers to the use of newer forms of technology (e.g., cell phones and computers) to facilitate repeated harassing behavior with the intention of harming others. Few scholars, however, examine these behaviors among young adult samples or note the relationship between the perpetrator and victim.

Because of the dearth of literature on cyber aggression among current and former intimate partners, a mixed methods research design was used to explore this topic using the routine activities theoretical perspective among male and female undergraduate students at a mid-sized Midwestern university. The purpose of this study was to use focus group data to explore participant views on cyber aggression among college intimates in order to develop a survey instrument. Additionally, quantitative analyses were used to examine the correlates of partner cyber aggression. Five themes emerged from the

qualitative data, and the data revealed specific aggressive cyber behaviors, potential rationale for using electronic devices to convey harassing messages, and how newer forms of technology may change the manner in which these communications are sent and received. The quantitative results revealed that 71 percent of respondents perpetrated and 75 percent were victimized by at least one aggressive cyber behavior during the past 12 months. Correlates of partner cyber aggression perpetration included athletic participation, increased time online, more text messages received, experiencing sexual abuse, lower self-esteem, being drunk more often, and more online guardianship; receiving more texts, experiencing more physical abuse, and more online guardianship were associated with cyber aggression victimization. The theoretical and policy implications of these findings were also discussed.

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CHAPTER 1: INTRODUCTION

The victimization of intimate partners is one of the most prevalent forms of violence in contemporary society (Wolfe and Feiring 2000). In the United States alone, almost 1.5 million women and approximately 835,000 men are physically assaulted and/or raped by an intimate partner each year, and 25 percent of women and 7.6 percent of men reported experiencing partner violence in their lifetime (Tjaden and Thoennes 2000a). Although violence, such as physical assault, occurs among all age groups, college students are at particularly high risk for being victimized by an intimate partner: college relationship violence estimates range from 14 percent (Forke et al. 2008) to 47 percent (Katz, Kuffel, and Coblenz 2002). Furthermore, recent research suggests that more violence may occur among dating couples, which is a common relationship status among college students, compared to marital unions (Straus 2004). Additionally, college students generally live in environments in which personal information (e.g., class schedules, phone numbers, and email addresses) is easily obtained, making them susceptible targets of interpersonal victimization (Finn 2004; Lee 1998). As such, college students are an important group to study with regards to the correlates and consequences of partner violence.

Research on partner violence generally focuses on a range of behaviors including physical, sexual, and psychological aggression as well as stalking (Barnett, Miller-Perrin, and Perrin 2005; Fisher, Cullen, and Turner 2000; Forke et al. 2008; Johnson and Ferraro 2000; Meloy 1996). Recent studies, however, have been criticized for their lack of attention to a wider range of actions that may be considered abusive for victims of partner violence (Southworth et al. 2007; Straus and Gelles 1990; Waltermaurer 2005). For

example, one new research area is cyber aggression, which is often referred to as cyberbullying among adolescents and cyberstalking or cyber harassment when the sample population includes young adult and/or adult individuals. In general, cyber aggression refers to the use of newer communication technologies such as social networking websites (e.g., Facebook) and text messaging to facilitate repeated harassing behavior by an individual or group with the intention of harming others (Aricak 2009; Juvonen and Gross 2008; Kowalski, Limber, and Agatson 2008; Sheridan and Grant 2007; Spitzberg and Hoobler 2002). There is an increasing body of literature detailing the negative aspects of adolescent cyberbullying (Kowalski and Limber 2007; Smith et al. 2008); however, few scholars focus on similar aggressive exchanges among young adult samples such as college students. Additionally, previous research on cyber aggression largely ignores the relationship between the perpetrator and victim and generally only notes whether the offender is either a person known or unknown to the target of the harassment. Several anecdotal accounts of cyber relationship aggression exist (Alexy et al. 2005; Reno 1999; Spitzberg and Hoobler 2002), but there is a dearth of information on the ways in which technology is employed to intimidate intimate partners (Southworth et al. 2007). As such, partner violence researchers who fail to incorporate measures of cyber aggression may be underestimating the actual extent of college couple violence.

In order to advance the partner violence literature, this study addresses cyber aggression among college intimate partners using the routine activities theoretical framework (Cohen and Felson 1979; Cohen, Kluegel, and Land 1981). Specifically, the purpose of this three-phase, exploratory sequential mixed methods design is to use focus group data to explore participant views on cyber aggression among college intimates in

order to develop a survey instrument. Additionally, the effects of personal characteristics (e.g., demographic factors and technology use) on intimate partner cyber aggression will be examined among students at a mid-sized Midwestern university.

The first phase of the study (fall 2009) included a qualitative exploration of college students' perceptions of various forms of cyber aggression among their dating peers. Instruments on cyber aggression among intimate partners are not currently available and little is known about how partners within this age group use technology to intimidate and threaten each other. As such, focus group data were collected from current undergraduates. During the second phase, a cyber aggression survey instrument was developed based on statements and/or quotes from the qualitative data collected in the first phase and constructs proposed by the routine activities framework. In essence, this instrument design phase connects the initial qualitative phase to the subsequent quantitative component of this mixed methods study. The third phase followed up on the qualitative phase to assess the reliability of the quantitative cyber aggression items and examined the personal characteristics that are associated with this form of intimate partner violence. In this phase, survey data was collected from undergraduate students enrolled in social science courses at a mid-sized Midwestern university. Determining the extent and correlates of cyber aggression among college intimates will perhaps inform future prevention and intervention efforts on college campuses and within the larger community.

The following dissertation includes seven chapters. In Chapter 1 (Introduction), the gap in the partner violence literature regarding cyber aggression and the main research questions for the study are introduced. Chapter 2 (Literature Review) reviews

the factors generally associated with face-to-face intimate partner violence among college students. This section is then followed with an overview of the literature on cyberbullying among adolescent populations and young adult and adult cyberstalking. Chapter 3 (Theoretical Framework) provides a description of the routine activities framework which informs this research project. In Chapter 4 (Methods), the data collection and analytic procedures used to empirically test the qualitative, instrument design, and quantitative research questions are described. The qualitative results are presented in Chapter 5 and the quantitative results are in Chapter 6. Finally, Chapter 7 (Discussion and Conclusion) summarizes the main findings of the study, discusses theoretical and policy implications, and provides suggestions for directions for future research.

CHAPTER 2: LITERATURE REVIEW

Intimate Partner Violence Among College Students

Definitional Issues

Research on violence between intimate partners is full of definitional ambiguities with regards to the behaviors that are included and the terminology that is used to label partner violence. Partner violence studies have traditionally included the threat or actual use of physical, sexual, and psychological aggression among romantic couples; however, researchers in this area have recently included stalking behaviors in their studies on couple violence (Baldry 2002; Barnett et al. 2005; Coleman 1997; Fisher et al. 2000; Langhinrichsen-Rohling et al. 2000; Logan, Leukefeld, and Walker 2000; Meloy 1996, 2002; Tjaden and Thoennes 2000a, 2000b). For example, in their study of partner violence among Mexican American college women, Coker and colleagues (2008) found that 20 percent of females were stalked by a current or former intimate partner within the past year. Even though some studies narrowly focus on only one form of violence, physical aggression, sexual violence, psychological abuse, and stalking have been found to co-occur (Baldry 2002; Coker et al. 2008; Coleman 1997; McHugh and Frieze 2006; Tjaden and Thoennes 2000a).

Additionally, researchers often use a variety of terms to refer to violence within couple relationships such as domestic violence, spouse abuse, and battering (McHugh and Frieze 2002). Recently, researchers have used the terms *intimate partner violence* and *dating violence* (Barnett et al. 2006). The term *intimate partner violence* is often reserved for describing aggression that occurs between cohabiting or married couples (Barnett et al. 2006; Coker et al. 2002) whereas *dating violence* generally refers to similar

incidents among unmarried individuals who may or may not have a sexual relationship (Forbes et al. 2006; Gover, Kaukinen, and Fox 2008; Harned 2002; Lewis, Travea, and Fremouw 2002; Straus and Ramirez 2004). Although much of the violence that occurs between college intimates could perhaps be classified as dating violence, some researchers adopt the more inclusive terms of *intimate partner violence*, *partner violence*, or *relationship violence* to refer to these abusive situations (Fang and Corso 2007; Forke et al. 2008; Halpern et al. 2004; Logan et al. 2000; Whitaker et al. 2007) to account for the constellation of relationships that exist among contemporary college coeds. Because of these definitional obscurities, this literature review will use the terms *intimate partner violence* and *dating violence* in accordance with the terminology used by the cited authors.

Partner Violence Risk Factors

Campus activities. Participation in certain campus activities such as athletics and Greek organizations have been found to be associated with partner violence, particularly sexual aggression, among male college students. Much of the research on the link between athletic participation and violence against women has found that male athletes are overrepresented among men engaging in both sexual (Crosset, Benedict, and McDonald 1995; Humphrey and Kahn 2000; Koss and Gaines 1993) and nonsexual assault (Crosset et al. 1996). Forbes and colleagues (2006), for example, conducted a study on freshman males at a private Midwestern university. They found that those who participated in aggressive high school sports (i.e., football, basketball, wrestling, and soccer) were more likely to engage in more physical violence, psychological aggression, and sexual coercion toward a female partner than those who did not participate in

aggressive high school sports. Conversely, Merten (2008) studied the acceptability of violence using couple interaction vignettes among undergraduate coeds and found that only the “need to win” was related to the acceptability of dating violence whereas sports participation and competition were not associated.

Other researchers have found associations between fraternity membership and sexual assault that may or may not occur within the context of a dating relationship (Brown, Sumner, and Nocera 2002; Humphrey and Kahn, 2000; Lackie and de Man 1997). Researchers have posited that the link between sexual aggression and fraternity and athletic team membership may be due to these groups frequently offering environments (e.g., party atmosphere) that are conducive to this form of violence (Humphrey and Kahn 2000; Koss and Gaines 1993). Additionally, fraternity members and athletes have been found to use more controlled substances, which is a risk factor for partner violence, than college students who are not affiliated with these groups (Ford 2007; McCabe et al. 2005; Park, Sher, and Krull 2008; Wechsler et al. 1997). Little is known, however, whether sorority membership is linked to dating violence. Although sorority members may be at high risk for experiencing sexual assault (Anderson and Danis 2007; Sawyer and Schulken 1997; Worth, Matthews, and Coleman 1990), it is presently unknown whether they experience more violence within the context of an intimate relationship. As such, more research is needed on the relationship between athletic team, fraternity, and sorority membership and college partner violence.

Child maltreatment. Because the family is often considered society’s most violent institution, it is important to look at the different forms of family violence simultaneously (Gelles 1997). One of the most consistent predictors of partner violence is a history of

child abuse which includes physical abuse, sexual abuse, and neglect. Both contact and noncontact sexual abuse have been found to predict later intimate partner violence (Gelles 1997; Whitfield et al. 2003; Yoshihama and Horrocks 2010). In addition, physical child abuse has been found to predict partner violence (Field and Caetano 2005; Foshee et al. 2004; Herrenkohl et al. 2004; Manseua et al. 2008; Rich et al. 2005; Straus 2004), both directly and indirectly through adolescent and adult problem behaviors (Fang and Corso 2007; Raskin White and Spatz Widom 2003; Swinford et al. 2000). Although not studied as frequently, neglect has been found to be a predictor of intimate violence as well (Fang and Corso 2007; Schwartz et al. 2006). As such, individuals who experience abuse within the family of origin may be vulnerable to re-victimization at the hands of an intimate partner.

Children are not only affected by experiencing violence; they may also be impacted by observing violent incidents that occur between their parents. Although some studies have not found a connection between witnessing interparental violence (Lavoie et al. 2002; Simons, Lin, and Gordon 1998), others have found an association between parental violence and partner violence perpetration and victimization (Brownridge 2006; Ehrensaft et al. 2003; Gover et al. 2008; Heyman and Slep 2002; Murphy and Blumenthal 2000; Rosen, Bartle-Haring, and Stith 2001; Stith et al. 2000; Whitfield et al. 2003). Despite strong empirical support for the association between witnessing parental violence in childhood and becoming involved in violent intimate relationships later in life, the findings in these studies are sometimes inconsistent. For example, in their study of male undergraduate students, Carr and VanDeusen (2002) found that although witnessing interparental violence did not predict sexual dating violence, observing violence between

parents predicted physical dating violence perpetration. Also, Gover and colleagues (2008) found that witnessing violence between parents did not have a significant impact on dating violence perpetration among college students, but observing father-perpetrated violence was significantly associated with physical dating violence victimization for females. Consequently, it is important to consider a myriad of family violence experiences when conducting research on dating violence predictors.

Self-esteem. Although researchers have found that lowered self-esteem is a negative outcome associated with experiencing partner violence (Anderson 2002; Zlotnick, Johnson, and Kohn 2006), others have found that decreased self-esteem may also be a risk factor for intimate aggression (Clements et al. 2005; Foshee et al. 2004; Hotelling and Sugarman 1986). Lewis and colleagues (2002) categorized their sample of female undergraduates in the following manner to examine correlates of aggression: non-violent, bidirectional aggression (both perpetrator and victim), perpetrator-only, and victim-only. They found that females reporting bidirectional dating aggression had significantly lower self-esteem than their non-violent counterparts. Interestingly, the victim-only group did not differ from the non-violent controls in terms of self-esteem (Lewis et al. 2002). There have been some other inconsistencies regarding the relationship between lowered self-esteem and relationship violence. For example, Forbes and Adams-Curtis (2001) examined personality factors associated with sexual coercion among college coeds. Contrary to their hypotheses, there was little evidence that self-esteem levels played a role in sexual coercion perpetration or victimization. Interestingly, these researchers found that lower childhood self-esteem predicted sexual victimization among females. Some researchers, however, have not found significant associations

between self-esteem and dating violence (Bird, Stith, and Schladale 1991; Follingstad et al. 1999). Because of these mixed findings, the impact of self-esteem on relationship victimization and perpetration remains largely unknown.

Substance use. Substance use, which includes alcohol consumption and illicit drug usage, has also been linked to physical, sexual, and psychological aggression and stalking behaviors in both general population and clinical samples (Drapkin et al. 2005; Flanzer 2005; Kilpatrick et al. 1997; Koss and Gaines 1993; Meloy 2002). Alcohol use is commonly cited as a risk factor for partner violence (Barnett et al. 2005; Follingstad et al. 1999; Mahlstedt and Welsh 2005; Logan et al. 2000; Swan and Snow 2003) and some suggest it is due to the role of alcohol either as a disinhibitor of social control or as a rationalization for violence (Flanzer 2005). Using a convenience sample of college students, Luthra and Gidycz (2006) found that women and men who reported alcohol use were five times more likely to perpetrate violence against a dating partner than those who did not use alcohol. Similarly, Abbey and colleagues (1996) conducted a study on sexual assault experiences among undergraduate women. Over half of their sample experienced some form of sexual assault with 46 percent of these assaults involving alcohol consumption by the male perpetrator, the victim, or both. College students have been found to have high rates of alcohol use with 40 percent of full-time college students aged 18-20 reporting a binge drinking incident within the past month (Substance Abuse and Mental Health Services Administration 2006). Consequently, it may be important to examine how drinking among this age group impacts the risk of partner violence victimization and perpetration.

In addition to alcohol use, others have found that intimate partner violence has been associated with illicit drug use (El-Bassel et al. 2005; Lipsky et al. 2005). Harned (2002), for example, found that more frequent alcohol and drug use was associated with an increased risk of physical dating violence victimization among a random sample of college students. General substance use, however, was not associated with physical perpetration or victimization among the male respondents. Similarly, among their sample of women seeking medical care at a family practice clinic, Coker and colleagues (2000) found that male partner's drug or alcohol use was strongly associated with current intimate partner violence independently of the women's substance use. Other studies, such as one conducted by Lewis and colleagues (2002), did not find an association between substance use in general and dating violence, perhaps because they did not measure substance use at the time of the violent incident. Although substance use may be a risk factor for intimate partner violence, it is important to recognize that using controlled substances is "not a primary *cause* of the violence" as it is possible that this relationship is mediated by social, cultural, and personality factors (Gelles and Cavanaugh 2005:177).

Demographic factors. One of the most controversial issues in intimate partner violence research surrounds the findings on gender as a predictor of victimization and perpetration. There have been mixed findings with regards to whether males or females are more likely to be perpetrators and/or victims of partner violence. Several researchers have found that females are victimized more often by an intimate partner than their male counterparts (Catalano 2007; Gover et al. 2008; Slashinski, Coker, and Davis 2003; Stets and Pirog-Good 1987; Tjaden and Thoennes 2000a, 2000b). According to Rennison and

Welchans (2000), women are victimized by intimates at approximately five times the rate of men. These findings that females experience more violence at the hands of their male partners support traditional notions of partner violence purported by feminist researchers (Johnson and Ferraro 2000).

Other researchers, however, contend that men and women use approximately equal levels of violence towards one another and report similar levels of victimization (Anderson 2002; Capaldi and Owen 2001; Harned 2002; Robertson and Murachver 2007; Straus 2008; Straus, Gelles, and Steinmetz 1981; Straus and Ramirez 2004). Using data from the 2000 National Household Survey on Drug Abuse, Cunradi (2007), for example, found that approximately the same proportion of men (3.1 percent) and women (3.2 percent) reported experiencing mutual intimate partner violence, which referred to situations in which the respondent both reported hitting or threatening a spouse or partner *and* was also personally hit or threatened with physical force within the past 12 months. Alternatively, some researchers report that women victimize men more often (Goldstein, Chesir-Teran, and McFaul 2008; Luthra and Gidycz 2006; Whitaker et al. 2007; Williams and Frieze 2005). In their convenience sample of college students, Gover and colleagues (2008) found that males were significantly less likely than females to perpetrate dating violence as being male decreased the odds of physical violence perpetration by 50 percent. It is important to note, however, that the males in their sample were also significantly less likely than the females to be physical violence victims. As such, females were both more likely to be both victims and perpetrators of partner violence than males (Gover et al. 2008). Other researchers have reported similar results (Fang and Corso 2007; Whitaker et al. 2007). Because of these divergent findings, it is difficult to

make generalizations about the relationship between gender and intimate partner violence.

The variation in gender differences and prevalence rates in partner violence may be attributed to several different factors. Researchers have been unable to reach a consensus on the definition of partner violence and estimates are therefore likely to vary depending on the behaviors examined (Barnett et al. 2005; National Center for Injury Prevention and Control (NCIPC) 2003). For example, although several researchers have found gender symmetry in the perpetration and/or victimization of physical and psychological partner violence (Anderson 2002; Capaldi and Owen 2001; Cunradi 2007; Straus 2008), women are more likely to be victims of other forms of violence such as stalking and sexual victimization (Forbes and Adams-Curtis 2001; Hamby 2005; Pathe and Mullen 2002; Tjaden and Thoennes 2000a). Even though women may engage in similar rates of violence, they also experience worse outcomes as a result of victimization such as higher rates of injury and poorer mental health outcomes (Clements, Ogle, and Sabourin 2005; Holtzworth-Munroe 2005; Romito and Grassi 2007; Sev'er 2002; Whitaker et al. 2007). Additionally, researchers who examine forms of violence separately are likely to report different estimates compared to those who combine physical, sexual, and psychological aggression in their measures (NCIPC 2003). Prevalence differences may be due to divergent samples used (e.g., convenience, general population, and shelter) or the level of data analyzed (e.g., couple level data versus single reporter). Additionally, women may be more willing to admit to perpetrating violence compared to males as men may be afraid of the negative stigma associated with

victimizing a woman in contemporary society (Gover et al. 2008; Gray and Foshee 1997; McHugh and Frieze 2002).

Age, race, and socioeconomic status are other commonly studied demographic characteristics that have been linked to intimate partner violence. For example, younger individuals are at higher risk of partner violence compared to older people (Barnett et al. 2005; DeMaris et al. 2003; Gelles 1997; Rennison and Welchans 2000). Females ages 20-24, an age group commonly found on college campuses, have the highest risk of nonfatal intimate partner violence (Catalano 2007). In terms of race, Asian and Pacific Islanders generally have the lowest rates of intimate partner violence whereas African Americans, American Indians, and Alaskan Natives have the highest rates (Johnson and Ferraro 2000; Tjaden and Thoennes 2000a). Weston and colleagues (2005) found that African American women experienced sexual aggression, threats of mild and severe intimate partner violence, and mild physical violence significantly more often than their Euro-American and Mexican American counterparts. Also, those from lower socioeconomic classes have been found to be at higher risk for partner violence (Coker et al. 2000; Drapkin et al. 2005; Frias and Angel 2005; Halpern et al. 2001; Stets and Straus 1990), though the findings are mixed (Gelles 1997). Violence occurs in every age, racial and ethnic, and sociodemographic group, however, extant research suggests that there are some individuals who are more at risk for partner violence than others.

Although not examined as frequently as other demographic characteristics, relationship status is another important factor to consider in dating violence research. In general, cohabiters have been found to have the highest rates of violence followed by married and dating couples (Johnson and Ferraro 2000; Magdol et al. 1998; Stets and

Straus 1990). Exclusivity of a romantic relationship may also be an important factor in partner violence research. Harned (2002) found that having a greater number of casual dating partners was associated with an increased risk of sexual dating violence victimization among both male and female college students. Conversely, Gover and colleagues (2008) found that exclusively dating increased the risk of physical and psychological violence victimization and perpetration among college coeds. Others, however, have not found differences in rates of partner violence among exclusive and non-exclusive partners (Goldstein et al. 2008). Additionally, it is important to recognize that violence does not always end once a relationship is terminated; violence may also occur among former intimates (Baldry 2006; McHugh and Frieze 2006; Radosevich 2000; Sev'er 2002). For example, Coleman (1997) conducted a study on female undergraduate students to examine negative behaviors that occur after the dissolution of an intimate relationship. They found that those who were formerly in a relationship with men who were verbally and physically abusive during their partnership were more likely to be pursued in a harassing or violent manner after the relationship ended. As such, previous research indicates that it is important to consider the potential impact of a variety of relationship status factors when conducting partner violence research.

Summary

Previous research has identified important correlates of partner violence among college students. Individuals with certain demographic characteristics (i.e., young age, lower socioeconomic status, and racial or ethnic minority status) and who participate in certain college activities such as athletic or Greek organizations may be at higher risk for perpetrating or being a victim of partner violence. Negative experiences in the family of

origin including child maltreatment and witnessing interparental violence may also impact a person's susceptibility to relationship violence. Furthermore, partner violence has also been linked to lower self-esteem and controlled substance use. As such, it is important to consider these correlates when conducting college partner violence research.

Cyberbullying, Cyberstalking, and Cyber Harassment

Definitions and Unique Aspects of Technological Harassment

Although researchers have not examined cyber aggression among intimate partners, others have examined electronic harassment among adolescents and young adults in cyberbullying and cyberstalking studies. Before reviewing this body of literature, it is important to provide definitions of some of the key terms that are used in cyber aggression research. Broadly speaking, *cyber violence*¹ refers to the use of newer communication technologies such as social networking websites (e.g., Facebook) and text messaging to facilitate repeated harassing behavior by an individual or group with the intention of harming others (Aricak 2009; Juvonen and Gross 2008; Sheridan and Grant 2007; Spitzberg and Hoobler 2002). When these behaviors occur among adolescents, the term "cyberbullying" is generally used whereas the phrases "cyberstalking" and "cyber harassment" are reserved for older populations such as young adults and adults. The term *cyberspace* is used to describe an intangible location created by an international computer network to which people can gain access for communication, research, or other informational or leisure purposes (Chisholm 2006; Deirmenjian 1999). The terms

¹ The term "cyber violence" will be used interchangeably with "cyber aggression" throughout this paper and will refer to computer-based and other electronic forms of harassment. The terms "cyber," "online," and "electronic" will be used interchangeably as well.

“cyber,” “online,” “electronic,” and “virtual” are often used in conjunction with activities that occur in cyberspace through computer-based and other newer forms of technology.

There are a variety of electronic modalities used by individuals to communicate with others. *Social networking websites* have been defined as “web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system” (Boyd and Ellison 2007). Users generally include personal information on these websites, such as current relationship status, employment history, and photos, which people within their online network can view. Among the most popular social networking websites are Facebook, MySpace, and Twitter. *Instant messaging* (IMing) includes real-time communication through the Internet (Kowalski et al. 2008). Finally, *text messaging*, which is also known as Short Message Service, refers to messages that are sent between cell phone users (Kowalski et al. 2008; Thompson and Cupples 2008).

A debate exists among those conducting research on crimes committed using the Internet and other new forms of technology; some argue that violations committed in cyberspace represent completely new forms of crime with distinct patterns and driving forces whereas others contend that these innovations allow offenders to accomplish older forms of deviance such as theft and fraud through a new medium (Alexy et al. 2005; Beran and Li 2005; Bocij 2004; Denegri-Knott and Taylor 2005; Sheridan and Grant 2007; Yar 2005). This disagreement is far from being resolved; however, several researchers have highlighted unique elements of cyber aggression that may contribute to

or exacerbate victimization experiences and perhaps even increase the likelihood of cyber perpetration (David-Ferdon and Feldman Hertz 2007).

Communications in cyberspace often lack the physical and social cues that are present in face-to-face interactions (Dehue, Bolman, and Vollink 2008; Denegri-Knott and Taylor 2005; Ybarra and Mitchell 2004b). For example, the recipient of an electronic message cannot see the body language and facial expressions or even hear the tone of voice of the sender; they can only attempt to interpret the intended message from a known or unknown sender through a string of text, numbers, and symbols (Ellison 2001). A person who sends a harassing or intimidating message online is not immediately confronted with the recipient's reactions and therefore does not know the consequences of the negative communication (e.g., crying) or even whether the message was interpreted correctly (Dehue et al. 2008; Kowalski and Limber 2007; Slonje and Smith 2008). Moreover, those who use technological forms of communication tend to be less inhibited in their online interactions with others and may type or text things that they would not customarily say in "real life" (Bocij 2004; Chisholm 2006; Ellison 2001; Li 2006). Alternatively, those who feel threatened during in-person exchanges may feel empowered to strike back against a violent offender online, finding safety and security behind a computer screen (Hinduja and Patchin 2008).

There are other aspects of newer communication devices that may assist cyber offenders. These forms of technology are relatively easy to use and people are constantly accessible even if they are not located in the same geographic area (Burgess and Baker 2002; Radosevich 2000). With the advent of cell phones, personal computers, and other portable communication devices, people can be reached anywhere at any time which may

intensify a victim's perceptions of vulnerability (Kowalski and Limber 2007).

Furthermore, although some may regard technological exchanges as private conversations, these messages may also be dispensed very quickly to a wider audience as recipients can forward these messages to multiple technology users (Ellison 2001; Slonje and Smith 2008). Also, because there is a lack of formal, consistent policing that occurs online (Bocij 2004), some argue that digital crime occurs "simply because of the absence of a capable guardian" and that victims are often reluctant to report their victimization to the authorities (Graboski and Smith 2001:36). Each of these features of technology may have a role in cyberbullying, cyber harassment, and cyberstalking.

Cyberbullying and Cyber Harassment Among Adolescent Samples

Much of what we know about various forms of technological harassment comes from studies conducted on cyberbullying among adolescent peers. According to Juvonen and Gross (2008), cyberbullying refers to situations in which an individual or group insults or threatens someone using the Internet or other digital communication devices. Some examples of cyberbullying include threats sent through email or text messages and placing someone's picture on the Internet without permission (Dehue et al. 2008; Hinduja and Patchin 2008); instant messaging is the most common medium for cyber violence among adolescents (Beran and Li 2005; Kowalski and Limber 2007; Juvonen and Gross 2008; Smith et al. 2008) and the perpetrators often include people the adolescent met online (Dehue et al. 2008; Ybarra and Mitchell 2004b) or schoolmates (Smith et al. 2008).

Although the term “cyberbullying” is widely accepted among researchers in this area (Agatson, Kowalski, and Limber 2007; Dehue et al. 2008; Hinduja and Patchin 2007, 2008; Patchin and Hinduja 2006; Slonje and Smith 2008; Smith et al. 2008; Vandebosch and Van Cleemput 2008), others prefer to use the phrase “online harassment” or “Internet harassment” to refer to online victimization experiences among younger samples (Mitchell, Ybarra, and Finkelhor 2007; Ybarra, Espelage, and Mitchell 2007b) because the concept of bullying was largely developed to describe face-to-face peer interactions and does not apply to all forms of online aggression among this age group (Wolak, Mitchell, and Finkelhor 2007).² Estimates regarding the percentage of adolescents that have been victimized online range from 9 percent (Wolak, Mitchell, and Finkelhor 2006) to 72 percent (Juvonen and Gross 2008), depending upon the type of sample used, timeframe examined, and definition of cyberbullying employed.

As with other forms of adolescent victimization and perpetration, there are certain demographic factors associated with online aggression. Several studies have found that there are no significant gender differences in adolescent online perpetration and/or victimization (Beran and Li 2005; Hinduja and Patchin 2008; Patchin and Hinduja 2006; Slonje and Smith 2008; Smith et al. 2008; Williams and Guerra 2007); however, others have reported that these behaviors vary by biological sex. For example, researchers have found that boys are more likely to be cyber bullies than females (Dehue et al. 2008; Li 2006) and females are more likely to be victims of online aggression than males (Hinduja and Patchin 2007; Kowalski and Limber 2007; Ybarra, Diener-West, and Leaf 2007a). In

² Because researchers use different terms to refer to technological forms of harassment among adolescent samples, the terminology used by the researchers in the studies cited will be retained or these behaviors will be referred to as online aggression, perpetration, and victimization where appropriate as these are more neutral terms.

terms of race differences, Ybarra and Mitchell (2004b) found that whites were 46 percent more likely than non-whites to engage in online harassment in their nationally representative sample of adolescent Internet users. Conversely, Hinduja and Patchin (2008) did not find race differences in online perpetration and victimization among their sample of Internet users under 18 years of age who completed their online survey. Consequently, the findings regarding the impact of gender and race are largely mixed.

Age and family income have also been found to be associated with cyberbullying; however, it is difficult to make generalizations because the findings are inconsistent. Several researchers have found that older adolescents are more likely to be online perpetrators (Raskauskas and Stoltz 2007; Smith et al. 2008; Williams and Guerra 2007; Ybarra and Mitchell 2004b) and victims (Hinduja and Patchin 2008; Ybarra et al. 2007a) whereas other researchers did not report significant age differences (Beran and Li 2005; Patchin and Hinduja 2006; Slonje and Smith 2008). Few studies examine the effect of household income on online aggression. Using data from the national Second Youth Internet Safety Survey, Ybarra and Mitchell (2004b) found that those from high income households were more likely to report harassing others online than those with lower incomes, perhaps due to their greater access to a variety of forms of newer technology such as laptop computers and cell phones with Internet access.

Researchers have also uncovered other correlates of cyberbullying including personal technology use and psychosocial factors. Not only is heavy Internet use associated with online victimization and perpetration (Juvonen and Gross 2008; Smith et al. 2008; Ybarra and Mitchell 2007), but engaging in a wider variety of online activities also increases an adolescent's risk of being an online target or offender (Hinduja and

Patchin 2008; Patchin and Hinduja 2006). Additionally, engaging in cyberbullying has been found to increase the risk of personal online victimization (Patchin and Hinduja 2006; Wolak et al. 2007; Ybarra and Mitchell 2004a, 2004b; Ybarra et al. 2006). Cyber aggression is also associated with behavioral problems such as physical and sexual victimization (Ybarra et al. 2006), delinquency (Hinduja and Patchin 2007; Ybarra and Mitchell 2004b), and substance use (Mitchell et al. 2007; Ybarra et al. 2007b; Ybarra and Mitchell 2004a). Furthermore, researchers have also reported that middle school adolescents involved with cyberbullying (perpetrators, victims, or both) have lower self-esteem than those who are not involved (Kowalski et al. 2008). As such, a variety of personal factors have an impact on cyberbullying experiences.

Although this is a relatively new area of study, researchers have conducted several large scale studies to learn more about the connections between face-to-face bullying and cyberbullying in hopes of designing adequate prevention efforts (Kowalski et al. 2008). Several researchers have found associations between offline³ and online bullying behaviors (Juvonen and Gross 2008; Raskauskas and Stoltz 2007; Smith et al. 2008; Ybarra and Mitchell 2004b). For example, Hinduja and Patchin (2008) examined predictors of cyberbullying offending and victimization among their sample of Internet users aged 18 and younger. They found that offline bullying and victimization were independently associated with both being a cyber bully and a target of this behavior.

Others have compared the impact of online bullying to face-to-face bullying behaviors. In their comparison study of traditional bullying and cyberbullying among adolescents, Juvonen and Gross (2008) found that online bullying experiences were associated with elevated levels of distress much like traditional bullying encounters.

³ The term “offline” refers to in-person behaviors.

Online aggression has also been found to be associated with depressive symptoms for both targets and offenders (Mitchell et al. 2007; Ybarra and Mitchell 2004a, 2004b). Adolescents have reported a range of responses following their cyberbullying victimization, such as anger and frustration (Beran and Li 2005; Patchin and Hinduja 2006), and efforts to prevent future harassment such as staying offline and pretending to ignore the bully (Dehue et al. 2008; Patchin and Hinduja 2006). Unlike traditional bully victims, those who are cyberbullied are less likely to inform others of their victimization (Dehue et al. 2008; Juvonen and Gross 2008; Smith et al. 2008) which may prolong these episodes and preclude victims from obtaining effective resources. Because of these negative outcomes and others, it is important to learn more about cyber violence in general.

Cyberstalking and Cyber Harassment Among Young Adult Samples

Although there have been several studies on adolescents' use of cyberviolence, fewer researchers examine cyber aggression among older samples such as college students. One form of cyberviolence is cyberstalking which refers to repeated computer-based threats and/or harassment that would cause a reasonable person to be concerned for his or her safety (Bocij 2004; Finn 2004; Southworth et al. 2007). Examples of cyberstalking include sending unsolicited or threatening email, posting hostile Internet messages, and obtaining personal information about the victim without their consent (Burgess and Baker 2002; Deirmenjian 1999; Ellison 2001; Spitzberg and Hoobler 2002) and harassing offline behaviors have been found to overlap with aggressive online behaviors (Alexy et al. 2005; Radosevich 2000; Sheridan and Grant 2007). Much of what

is known about cyberstalking, which is often interchangeably referred to as cyber or online harassment (Bocij 2004; Ellison 2001; Finn 2004), comes from anecdotal reports (Alexy et al. 2005; Reno 1999; Spitzberg and Hoobler 2002). Estimates of cyberstalking are largely unknown (Bocij 2004; Reno 1999), however, Working to Halt Online Abuse (WHOA), one of the largest Internet safety organizations in the world, reported that they receive approximately 50-75 reports of online harassment per week (WHOA 2008). Because of the heightened accessibility to new technology and the rise in formal and anecdotal reports, researchers speculate that the prevalence of cyberstalking is increasing (Alexy et al. 2005; Ellison 2001; Finn 2004; Reno 1999).

Despite the growing interest in cyberstalking, few empirical studies have focused exclusively on this topic. Some of the first cyber harassment studies used data from larger projects that include only one or two items about this form of aggression (Fisher et al. 2000; Pathe and Mullen 1997). For example, Langhinrichsen-Rohling and colleagues (2000) conducted a study on stalking using a sample of college students who had either initiated or experienced the termination of a meaningful romantic relationship. They included a 26-item Unwanted Pursuit Behavior Inventory which included 1 item on cyber aggression. Respondents who terminated the relationship were asked how often their ex-partner sent them unwanted email or chat messages whereas breakup sufferers were asked the frequency with which they sent these messages. None of the relationship dissolvers reported receiving these messages; however, 2.5 percent of the breakup sufferers indicated that they sent unwanted email or chat messages (Langhinrichsen-Rohlin et al. 2000). Even though these initial studies did not explicitly focus on

cyberstalking and included limited measures, they provide evidence that these behaviors occur among older samples formerly in romantic relationships.

Spitzberg and Hoobler (2002) were the first to examine cyberstalking victimization within a social science framework among young adults in their three pilot studies of undergraduate students. The purpose of these initial analyses was to develop and empirically test measures of cyberstalking victimization that are suitable for older populations, which was referred to as the Cyber-Obsessional Pursuit (COP) Scale. The 24-item COP asked respondents to report, for example, whether anyone has ever undesirably and obsessively sent them sexually harassing messages and threatening written messages using a computer or other electronic means. These researchers then administered the COP to a sample of 235 undergraduate students at a large southwestern university. Almost one-third of Spitzberg and Hoobler's (2002) participants reported experiencing some form of computer-based harassment and those who had more technology exposure (e.g., how frequently the respondent actively participates in chat room discussion) were at higher risk for experiencing unwanted cyber pursuit. Even though these researchers concluded that most of these cyber communications were "relatively harassing but benign" (Spitzberg and Hoobler 2002:86), the results reveal that experiencing computer-based harassment is a relatively common experience among college students.

Other researchers have conducted studies on cyberstalking victimization among undergraduate college students and other older samples since Spitzberg and Hoobler's (2002) seminal article (Alexy et al. 2005; Aricak 2009; Bocij 2004; Finn 2004; Holt and Bossler 2009; Marcum 2008, 2009; Sheridan and Grant 2007). These studies have

provided some preliminary information about the demographic characteristics and technology use patterns of cyberstalking victims. Some researchers have not found gender differences in cyberstalking victimization (Arıcak 2009; Finn 2004; Sheridan and Grant 2007), but others have found that females are more likely to be victims and males are more likely to be perpetrators of this form of violence (Arıcak 2009; D'Ovidio and Doyle 2003; Mitchell, Becker-Blease, and Finkelhor 2005; Reno 1999; WHOA 2008). Conversely, Alexy and colleagues (2005) in their study of undergraduate students found that males were more likely to be cyberstalking victims. No significant age and race differences have been found among different undergraduate samples (Alexy et al. 2005; Finn 2004); however, using official New York City Police Department records between January 1996 and August 2000, D'Ovidio and Doyle's (2003) reported that over 75 percent of the victims and perpetrators were white and the average age of cyberstalking perpetrators was 24 whereas 32 was the average age for victims. Engaging in more online activities such as shopping, using chat rooms, and socializing via Internet websites have also been found to be associated with sexual and non-sexual online harassment (Marcum 2008, 2009). Because of the limited studies on the demographics and technology use of cyberstalking perpetrators and victims, more research needs to be conducted in this area.

Despite the tendency to focus on cyberstalking victimization, it is also important to understand more about the perpetrators of this form of violence. Research on cyberstalking perpetration is particularly limited; however, one recent study examined both perpetration and victimization behaviors among a sample of Turkish college students. In this study, Arıcak (2009) provided a definition of cyberbullying and asked the undergraduate students whether they had ever engaged in this behavior (i.e.,

perpetration) and if they had ever been exposed to it (i.e., victimization). Approximately 20 percent of the sample reported engaging in cyberbullying at least once and 54 percent reported being victimized online. Aricak (2009) examined different psychiatric symptoms as predictors of cyberbullying and found that hostility and psychoticism (e.g., feeling that something is wrong with one's mind) predicted being a perpetrator whereas interpersonal sensitivity (e.g., feeling inferior) and psychoticism were associated with being a victim of this form of aggression. Interestingly, being a cyber bully increased the likelihood of being victimized in cyberspace, which is perhaps due to increased online exposure. Although Aricak (2009) labeled these online perpetration and victimization experiences among older individuals as cyberbullying instead of cyberstalking, the findings suggest that it is important to consider both online perpetration and victimization experiences.

The relationship between the victims and perpetrators of cyberstalking may also be an important factor in creating adequate prevention and intervention efforts. Few cyberstalking researchers have asked respondents about how well they know their online offenders, but those who inquire about this relationship report mixed results. Consistent with the cyberbullying literature (Kowalski and Limber 2007; Wolak et al. 2007; Ybarra and Mitchell 2004b), some researchers have found that the highest proportion of cyberstalkers are strangers (Bocij 2004; Finn 2004) whereas others have found that cyber perpetrators were more likely to be individuals known to the victims such as former intimate partners (Alexy et al. 2005; Sheridan and Grant 2007). Despite the evidence that former partners are among those who frequently perpetrate online aggression, no study has specifically addressed cyber violence within the context of current or former intimate relationships (Southworth et al. 2007).

Summary

Technological advances have changed the ways in which people communicate in modern day society. There are many benefits of personal communication devices; however there is a darker side to technology use as people can send threatening and harassing messages at their convenience without being in close proximity to the recipient. Researchers who study cyberbullying among youth and cyber harassment among young adults have found that the correlates of this new form of aggression are similar to those in partner violence research including demographic characteristics (e.g., gender, age, and socioeconomic status). This is an emerging area of study, and it is important to learn more about specific online behaviors used and who is at risk of becoming a target of cyber aggression.

Partner Violence Measurement

Notwithstanding the benefits of standardized scales such as the Conflict Tactics Scale (CTS) that are commonly used in partner violence studies, researchers have found that actions that are considered abusive by a victim of partner violence are not always available in common survey instruments (Straus and Gelles 1990; Waltermaurer 2005). Because recent technological innovations have permitted cyberbullying among adolescents and cyber harassment among young adult acquaintances, it is possible that these devices may be used to inflict intimate partner violence as well. Current measures of college partner violence, however, fail to incorporate technological forms of psychological aggression that are generally included in cyberbullying and cyberstalking research. Examining cyber aggression among individuals who are former or current

intimate partners is critical because most in-person stalking cases evolve from previous relationships where one person is trying to reestablish a relationship or exact revenge on a former partner (Coleman 1997; Meloy 1996, 2002; Pathe and Mullen 2002; Spitzberg and Hoobler 2002). Even though cyberstalking is not necessarily more benign than physical stalking and may even be a prelude to more serious violent behavior (Lee 1998; Radosevich 2000; Reno 1999), previous research has found that college students in particular may not perceive cyberstalking by acquaintances as harmful as similar actions by strangers (Lee 1998). Consequently, respondents may not be reporting online behaviors in surveys on intimate partner violence and researchers may be underestimating the actual extent of couple aggression.

It is important to consider the role of newer forms of electronic communication in aggressive college intimate relationships given undergraduates' high rates of technology use (Ching, Basham, and Jang 2005). For example, in a study conducted by Gemmill and Peterson (2006), 97 percent of their undergraduate sample had cell phones and 98 percent had Internet access at their campus residence. Furthermore, 90 percent of adults ages 18-29, an age range that encompasses traditional college students, reported using computers and the Internet in 2008 (U.S. Census Bureau 2009). Additionally, many of the cyberbullying and cyber harassment studies were limited in their focus on computer-based forms of communication and did not include items regarding newer forms of technology such as global positioning systems (GPS) technology (Southworth et al. 2007). The inclusion of these measures would perhaps allow for increased sensitivity to the unique experiences of young adults in general. As such, it is important to examine the

role of a variety of technological innovations in the perpetration of intimate partner violence.

Summary of Literature Review and Rationale for the Present Study

Partner violence is widespread in contemporary society and students on college campuses are not insulated from this form of aggression. A variety of personal factors are associated with partner violence, ranging from demographic characteristics such as gender and age to personal lifestyles (e.g., substance use). Despite the extensive body of literature on partner violence, researchers have recently been challenged to incorporate a broader spectrum of behaviors that may be considered aggressive by victims that are not included on standardized survey instruments. One newer form of violence that has been explored is cyber aggression, which refers to the use of newer communication technologies such as social networking websites and text messaging to facilitate repeated harassing behavior by an individual or group with the intention of harming others (Arıcak 2009; Juvonen and Gross 2008; Sheridan and Grant 2007; Spitzberg and Hoobler 2002). Despite the many benefits of newer forms of communication, research on cyberbullying among adolescents and cyberstalking among young adults reveals that there is a darker side of technology as these communication mediums can be used to stalk and harass certain individuals. Although former intimates have been found to be perpetrators of cyber aggression (Alexy et al. 2005; Langhinrichsen-Rohling et al. 2000; Sheridan and Grant 2007) and factors that are commonly associated with partner violence have also been linked to online aggression (e.g., gender and race), these topics have not been integrated to date. As such, failing to include cyber aggression measures may lead to an

underestimation of the extent of partner violence. Because of their high rates of couple violence and technology use, college students are an important group to study with regards to intimate partner cyber aggression. Learning more about the correlates of cyber aggression among college couples will greatly assist with prevention and intervention efforts.

CHAPTER 3: THEORETICAL FRAMEWORK

The Origins of Routine Activities Theory

Routine activities theory was originally drafted by Cohen and Felson (1979) to describe how changes in the social structure influence victimization patterns. This framework has been used to explain a wide variety of criminal offenses. In order to gain a broader understanding of routine activities theory, it is important to note the contributions of the lifestyle/exposure model (Hindelang, Gottfredson, and Garofalo 1978) to the development of contemporary victimization theories. According to the lifestyle/exposure model, a person's risk for victimization varies according to their lifestyle, which refers to "routine daily activities, both vocational activities (work, school, keeping house, etc.) and leisure activities" (Hindelang et al. 1978:241). As such, the structured and unstructured activities of individual lifestyles, which are contingent upon a person's social position, differentially expose people to risky or vulnerable situations by placing them in contact with potential offenders. Because variations in lifestyles are often socially determined by role expectations (i.e., cultural norms) and structural constraints such as economic resources and educational attainment, much of the early theoretical testing of this model examined the variability in victimization across a variety of demographic factors such as age, sex, and marital status. As such, the main premise of the lifestyle/exposure model is that demographic trends in victimization risk are largely due to lifestyle differences (Miethe and Meier 1994).

Instead of focusing on the social group variations in criminal victimization or the personal histories of offenders, routine activities theory was developed to explain the

changes in direct-contact, predatory crime (i.e., illegal incidents in which a person or property is intentionally harmed or confiscated) rate trends and cycles over time (Cohen and Felson 1979; Miethe and Meier 1994). In essence, routine activities theory is a situational approach that posits that there are three minimal elements that must be present in the same place and time in order for a crime to occur: a motivated offender, a suitable target, and the absence of a capable guardian to prevent criminal violations (Cohen and Felson 1979; Cohen, Felson, and Land 1980; Felson 2002). The absence of any one of these three elements is sufficient to hinder a legal violation.

Although researchers who apply the theory often assume the presence of someone motivated enough to commit a crime (Miethe and Meier 1994; Osgood et al. 1996; Yar 2005), considerable attention has been paid to describing features of suitable targets of crime in terms of their proximity, exposure, and attractiveness (Cass 2007; Cohen et al. 1981; Finkelhor and Asdigian 1996; Fisher, Cullen, and Turner 2002; Holt and Bossler 2009; Mannon 1997). The concepts of proximity and exposure seem quite similar; however, research identifies subtle distinctions. Whereas exposure refers to the visibility and accessibility of targets to offenders, proximity is defined as the physical distance between the location of desired persons or objects and areas in which large populations of potential perpetrators congregate (Cohen et al. 1981). The desirability of animate or inanimate objects and the perceived resistance of the person or property to becoming a target of a crime (e.g., portability) are features of attractiveness (Cohen et al. 1981; Cohen and Felson 1979). Furthermore, Cohen and colleagues (1981) distinguish target attractiveness based on whether the criminal motivation is *instrumental* with the crime committed to obtain a desired target or *expressive* as the criminal actions taken, such as

stealing property or attacking a person, serve as the only intrinsic reward. Finally, guardianship refers to the ability of persons or objects to prevent legal violations, either by their mere presence or by some direct or indirect action (Cohen et al. 1981; Miethe and Meier 1994). People can serve as guardians against crime either formally (e.g., security guards and police officers) or informally as private citizens can prevent illegal activities.

The convergence in space and time of these elements of direct-contact, predatory crime is altered by changes in the social structure that may lead to increasing crime rates such as those experienced in the 1960s and 1970s (Cohen and Felson 1979; Cohen et al. 1980; Miethe and Meier 1994). Macrolevel structural changes that have occurred through electronic innovations, for example, have impacted the criminal opportunities for potential offenders as many high-tech goods that are often attractive to criminals are more portable now than in the past (e.g., MP3 players and laptop computers) and “many technological advances designed for legitimate purposes... may enable offenders to carry out their work more effectively” (Cohen and Felson 1979:591). As such, offenders can conceal stolen goods easier and also utilize new forms of technology in the commission of crime. Furthermore, Cohen and Felson (1979) posit that microlevel changes that occurred in the United States in the aftermath of World War II such as the rise in married females in the workforce contributed to increasing crime rates; activities that traditionally occurred in private households were moved to the public domain which is characterized by decreased levels of effective guardianship. As such, changes in routine activities may lead to higher rates of victimization through increased opportunities for crime.

Routine activities theory was originally designed for explaining variations in stereotypical street crimes such as stranger assaults and burglaries (Finkelhor and Asdigian 1996); however, researchers have recently reformulated the theory to explain different forms of interpersonal victimization such as sexual assault among college students (Cass 2007; Logan et al. 2006; Schwartz et al. 2001) and domestic violence (Mannon 1997). For example, Finkelhor and Asdigian (1996) used a modified version of routine activities to explain youth victimization by nonfamily members and parents. Instead of conceptualizing guardianship, exposure, and proximity as components of routine activities, these aspects were considered environmental factors that differentially protect or place youth at risk for victimization. Additionally, in an attempt to avoid the victim-blaming connotations associated with target attractiveness or suitability (Logan et al. 2006), Finkelhor and Asdigian (1996:6) focused on “target congruence,” which refers to the individual characteristics of victims, such as small size or other physical qualities desired by the offender, that may increase their probability of victimization. Researchers have recently utilized the theory to explain other offenses such as stalking that may or may not involve interpersonal interaction (Ehrhardt Mustaine and Tewksbury 1999; Fisher et al. 2002). Tewksbury and Ehrhardt Mustaine (2003), for example, expanded the guardianship component of routine activities theory to encompass individual-level protective behaviors such as carrying mace or a knife for self-protection. These minor modifications enable researchers to apply the theory across more victimization domains.

Routine Activities Theory and Criminal Perpetration

In order to advance criminological theory, some scholars have proposed different ways to modify the routine activities framework to make it more broadly applicable, either by reconceptualizing the theoretical propositions and creating a new perspective known as structural choice theory (Miethe and Meier 1990, 1994) or extending the focus to delve into the motivations of criminal offenders (Anderson and Hughes 2009; Osgood et al. 1996). According to Miethe and Meier (1990), two central assumptions of victimization theories such as the lifestyle/exposure model and routine activities theory serve as the basis for the structural choice theory of victimization: (1) routine activities and lifestyles create opportunities for crime by increasing contact between motivated offenders and targets and (2) offenders consider both the personal value of a target and the extent of its guardianship when choosing a victim. The structural choice perspective emphasizes both the macrolevel processes emphasized by routine activities theory that impact criminal opportunities and the microlevel factors associated with victim selection that are central to the lifestyle/exposure model. As such, this theory distinguishes between structural factors such as proximity and exposure and the “choice” components of target attractiveness in terms of differential value or subjective utility and social and/or physical guardianship. Structural choice theory has been used to explain burglary, theft, and personal violence among a general population (Miethe and Meier 1990) and sexual victimization among homeless and runaway youth (Tyler et al. 2001).

Instead of focusing on victimization or aggregate crime rates, Osgood and colleagues (1996) propose that the three main elements of routine activities theory can be adapted to explain individual-level offending beyond direct-contact, predatory crimes by focusing on how situational factors influence criminal motivations. In order to apply the

theory to offending instead of victimization, these scholars propose that the motivated offender concept should be replaced with the notion that criminal motivation exists within deviant behavior. That is, by their very nature, some routine activities such as unstructured socializing by youth promote deviance. Furthermore, Osgood and colleagues (1996:639) contend that instead of identifying distinctive features of suitable targets, it is more appropriate to examine “the more general notion of situations in which a deviant act is possible and rewarding” when applying the theory to a broader range of deviant behaviors. As such, focusing more on the situational aspects of crime is more useful than describing the features of potential targets, which may vary by offender preference, when conducting research on criminal offending. Because the capable guardian concept in the original formulation of routine activities theory implies a relationship between the formal or informal crime inhibitor and the target instead of with the motivated offender, this element must be modified when applied to criminal perpetration. As such, the absence of an authority figure, which refers to someone who occupies a role in which they are obligated to exert social control when deviance occurs (e.g., parent, teacher, or store owner), is more applicable when explaining perpetration (Osgood et al. 1996).

There has been empirical support for extending the theory to criminal offending as unsupervised, unstructured socializing with peers has been found to be associated with criminal behavior, heavy alcohol use, drug use, and dangerous driving among a sample of young adults (Osgood et al. 1996). Additionally, using a national sample of adolescents, Anderson and Hughes (2009) found that access to private transportation and increased income, both of which may enable delinquent behavior and movement away from

authority figures, were associated with violent offending, heavy alcohol consumption, and marijuana use. Although they did not incorporate Osgood et al.'s (1996) reformulation of routine activities theory, Schwartz and colleagues (2001) examined whether the presence of male peer groups who legitimize the sexual exploitation of women provided motivation for male-perpetrated sexual assault. Male peer support for partner violence perpetration, which included associations with male peers who sexually assaulted women and/or promoted the assault of female partners under certain conditions, was associated with self reports of perpetrating sexual assault. Consequently, focusing more on both the motivations of offenders and the deviance inducing features of specific situations may provide more insight into criminal offending.

Routine Activities Theory and Cybercrime

Other scholars have examined the applicability of routine activities theory to crimes that do not involve physical contact between victims and offenders: cybercrimes. In a detailed theoretical analysis, Yar (2005) proposes that there are certain components of routine activities theory that may be adapted to crimes that occur in virtual environments whereas others apply strictly to physical settings. As with offline crimes, it is assumed that motivated offenders exist in cyberspace. Similarly, the concept of guardianship can be adapted to the virtual world as computer systems staff and firewalls replace police officers and home security systems found in terrestrial environments. Target suitability, however, may not transfer as easily to cyberspace. Although potential targets may be of similar value to those found offline and visible to the "largest possible pool of motivated offenders," Yar (2005:421) contends that it is difficult to conceive of

targets as having differential accessibility, making them more or less attractive to perpetrators. Because these differences are ones of degree rather than kind, it is suggested that the concepts can be adapted to suit cybercrimes rather than rejected on the basis of these slight divergences (Yar 2005). The major challenge in applying routine activities framework to cybercrime is the requirement that the minimal elements of crime must intersect in space and time as cyberspace is “chronically spatio-temporally disorganized” in that places do not have a fixed online location and targets cannot necessarily be located in certain areas at routine times (Yar 2005:424). Despite these challenges, researchers have been somewhat successful at applying the theory to online fraud victimization (Holtfreter, Reisig, and Pratt 2008) and cyber harassment (Holt and Bossler 2009; Marcum 2008, 2009). Please see Table 1 for a list of items used to measure each theoretical construct.

Applicability to the Present Study

According to routine activities theory, criminal violations are not randomly distributed in society but rather coincide with the lifestyles and daily routines of individuals (Cohen 1981; Cohen and Felson 1979; Hindelang et al. 1978; Miethe and Meier 1994). One environment in which individuals are particularly at risk for victimization is a college campus as “young people and their portable possession will, in general, always be incapable guardians and suitable targets, respectively, and a reserve army of motivated offenders will always be found among the ranks of college students” (Henson and Stone 1999:305). Once thought of as an isolated area impermeable by crime, recent research has found high rates of interpersonal victimizations, such as

intimate partner violence, on college campuses (Barnett et al. 2005; Fisher et al. 2000; Forke et al. 2008; Katz et al. 2002). Because there are abundant opportunities for leisure and other public setting events (Ehrhardt Mustaine and Tewksbury 1999), the lifestyles and recreational activities that frequently occur on campuses such as alcohol and drug use may increase the risk of partner violence perpetration and victimization.

There are unique features of campus life that may contribute to online aggression by placing them in closer proximity to aggressive partners and increasing their exposure. Living on campus, regular involvement in certain college activities, and attending class may place potential victims within close physical proximity to offenders including current and former intimate partners. For example, some individuals, such as sorority and fraternity members and athletes, may use controlled substances at higher rates than other undergraduate students (Ford 2007; McCabe et al. 2005; Park et al. 2008; Wechsler et al. 1997), which may increase their risk of partner violence perpetration and victimization.

Another routine activity of college students that has not been explored as frequently as a risk factor for victimization is technology use. Individuals who spend a lot of time online and use multiple electronic communication mediums (e.g., text messaging and social networking websites) may expose themselves as potential targets due to their increased accessibility and visibility to motivated offenders including those who are current or former intimates. Those who spend more time online may include more personal information in cyberspace, either by continuously updating their physical location on social networking websites or by providing extensive contact information. Providing this information online may place them at higher risk for victimization as aggressive partners are able to monitor them more closely. As such, newer forms of

technology may enhance the tools of an aggressive individual, providing more resources to monitor and harass their intimate partner. Because of their routine activities on campus and in cyberspace, college students may be at high risk for intimate partner cyber aggression.

Additionally, there are fewer guardians to monitor online activities. Electronic communications may be private, such as text and instant messaging, which decreases guardianship. Although Holt and Bossler (2009) suggested that guardianship online could be assessed by asking respondents about their usage of anti-virus and firewall software, there are other components of cyber communications that may be more indicative of guardianship. For example, asking college students whether their friends or family members have intervened in an online argument with a partner may serve as a proxy for guardianship. These online interventions may prevent future harassment.

Although it is difficult to conceptualize target attractiveness features when examining expressive crimes such as interpersonal violence (Miethe and Meier 1994), previous research has suggested that partner violence perpetration and victimization risk may vary by experiences with child maltreatment, witnessing interparental violence, self-esteem and substance use. For example, having lower levels of self-esteem (Forbes and Adams-Curtis 2001; Lewis et al. 2002) and engaging in more substance use (Drapkin et al. 2005; Flanzer 2005; Meloy 2002) have been found to be associated with increased partner violence. The risk of offline partner violence has been found to vary by demographic factors such as gender, age, and race. As such, it is important to consider these personal characteristics in cyber aggression research as they may impact an

individual's vulnerability to violence. The intersection of these factors in cyberspace, therefore, may lead to higher rates of cyber aggression among intimate partners.

Research Questions

In a mixed methods study, qualitative, quantitative, and mixed methods research questions are addressed (Creswell and Plano Clark 2007). Based upon the abovementioned literature review and the routine activities framework, the following research questions will guide the subsequent analyses.

Qualitative Research Question

Qualitative analyses were used to explore the phenomenon of cyber aggression among college intimates. As such, the following question was used as an overarching framework for the qualitative analyses:

1. What forms of cyber aggression occur among college students involved in intimate relationships?

Instrument Design Research Questions

The use of mixed methods calls for questions that will connect the qualitative and quantitative data. The major mixed methods research questions for this project were as follows:

1. Which cyber aggression items and scales represent the qualitative results?
2. Is the college cyber aggression instrument reliable and valid?

Quantitative Research Questions

Quantitative analyses were used to assess the reliability and validity of the intimate partner cyber aggression measures and examine the correlates of this form of relationship violence. The following quantitative research questions were addressed in the present study:

1. What proportion of college students experience intimate partner cyber aggression?
2. What personal characteristics (i.e., living arrangements, campus activities, technology use, child abuse histories, self-esteem, substance use, and demographic factors) are associated with cyber relationship aggression?
3. What is the strength of the relationship between cyber aggression and in-person aggression among college intimates?
4. How does cyber aggression impact face-to-face interactions between college students involved in intimate relationships?
5. How does intimate partner cyber aggression impact college students' perceptions of safety?

CHAPTER 4: METHODOLOGY

Mixed Methods Design

Rationale for Mixed Methods

Mixed methods research involves a combination of qualitative and quantitative approaches to research as well as distinct philosophical assumptions that influence the collection and analysis of data (Creswell and Plano Clark 2007; Tashakkori and Teddlie 1998). As such, the primary assumption of mixed methods research is that qualitative and quantitative research practices may be combined in order to address the aims of a particular study, providing a broader understanding than either source of data could alone. Mixed methods research also involves the “mixing” of qualitative and quantitative data in a single or multi-phase study whereby researchers relate the two forms of data either through merging by integration, embedding one type of data within the design of the other, or connecting when the analysis of one type of data necessitates the collection of another form of data (Creswell and Plano Clark 2007). Although some researchers may be opposed to combining qualitative and quantitative data because of their divergent philosophical assumptions, the use of mixed methods may be the most pragmatic approach to answering certain research questions, including those in the present study.

Combining qualitative and quantitative approaches allows the researcher to glean the benefits of each and simultaneously compensate for their limitations. For example, qualitative data provide rich, contextual information that is often absent from quantitative research but is restricted in its generalizability and comprehensiveness. Integrating these forms of data allows the researcher to limit these deficiencies and enhance the results. Mixed methods research also helps address topics that cannot be examined by relying

solely on qualitative or quantitative approaches. For instance, mixed methods researchers can qualitatively explore a new phenomenon for which no measures or instruments currently exist and then, based upon this data, construct quantitative variables to be administered to a larger group of respondents in a systematic way. The use of both qualitative and quantitative approaches may provide unique insight into unexplored areas of research.

Mixed Methods Design

This study utilizes a three-phase exploratory sequential design (Creswell and Plano Clark 2007). This design is distinguished from other mixed methods designs because qualitative data are collected prior to quantitative data and these phases are often connected through an instrument design stage. The first phase involved a qualitative exploration of college students' perceptions of intimate relationship violence through focus group interviews. The analysis of the qualitative transcriptions led to the second phase of the study. During this instrument design phase, the main themes derived from the focus group interviews were used to inform the creation of a series of quantitative cyber aggression questions. In essence, the instrument design phase connected the initial qualitative phase to the subsequent quantitative component of the study. In the third phase, the quantitative cyber aggression items were administered to a sample of college students in order to assess the reliability of these items and to examine the personal characteristics that are associated with this form of relationship violence. Please see Figure 1 (Appendix A) for a visual diagram of the design. The exploratory sequential design has been used by other researchers to develop and test quantitative survey

instruments (Kroman and Oetzel 2003; Mak and Marshall 2004; Vangelisti, Crumley, and Baker 1999).

Phase 1: Qualitative Data Collection

Permissions

The IRB at the principal investigator's (PI) institution approved the qualitative phase of this study prior to the collection of the data during the fall 2008 semester (IRB # 2008089147EP). Individual approval to audio tape the interviews and include their responses in subsequent data analyses was also obtained by asking each respondent to complete an informed consent form prior to participating in the focus groups. Each respondent consented to both being audio taped and having their data included in future analyses.

Rationale for Focus Group Interviews

During the first phase of the study, focus group interviews were conducted. Focus group interviews promote self-disclosure as each member is invited to explain his or her point of view with the goal of obtaining a wide range of opinions and ideas on a given topic (Berg 2004; Krueger and Casey 2000). One of the most valuable aspects of focus group research is the synergistic effect of this form of interviewing (Morgan 1992), which occurs because participants are encouraged to respond to others' comments, pose questions to the group, and elaborate on their own feelings about a topic. Additionally, focus group interviews present "a more natural environment" than occurs in individual interviews because participants may reciprocally influence each other by responding to

the ideas and comments of others as they would in daily conversations (Krueger and Casey 2000:11).

Sample for the Qualitative Phase

All undergraduate students currently enrolled at a mid-sized Midwestern university during the fall 2008 semester were eligible for participation in the study, but the respondents included only individuals enrolled in sociology and communication studies courses. Students were recruited in several different ways, but the main contact tool involved posting the details of the project on the university's communication studies website. Sociology and communication studies instructors were also emailed and asked to announce the details of this study to their classes and encourage interested individuals to contact the PI. Additionally, participants were recruited through snowball sampling as focus group participants were asked to inform other potential respondents about the study. Participation in the interviews fulfilled a course requirement for some individuals and others received extra credit from their respective instructors if available. For example, focus group participation was mandatory for students in an upper level sociology course during the fall 2008 semester; however, all participants reserved the right to have their responses not included in the formal analyses. As such, the qualitative data collection included both opportunistic and snowball sampling.

Focus group researchers have not reached a consensus with regards to how many interviews are sufficient for a given study; however, Krueger and Casey (2000) suggest planning three or four focus groups with any one type of participant and then determining whether saturation has been achieved. Theoretical saturation occurs when an interviewer has already heard the range of ideas and additional interviews are not providing any more

unique information (Corbin and Strauss 2008; Krueger and Casey 2000; Morgan 1996; Rubin and Rubin 2005). Because researchers generally recommend conducting focus groups with homogeneous individuals as the degree of disclosure may be inhibited when participants differ on certain characteristics (Krueger and Casey 2000; Morgan 1992, 1996), the focus groups were separated by gender. People tend to feel more comfortable speaking about sensitive topics with those whom they perceive to be similar to themselves (Morgan 1992) and this is especially important when conducting research on relationship violence.

For the present study, a total of five focus group interviews were conducted: three female-only and two male-only groups. Interviews lasted approximately 1 to 1 ½ hours and were conducted in a conference room located at the university's main campus. On average, 8 people attended each focus group interview session for a total of 39 participants.

Data Collection Procedures

Developing the interview protocol. Because previous research has not exclusively focused on intimate partner cyber aggression among young adults and researchers have mainly examined computer-based forms of harassment without including other forms of new technology (e.g., text messaging), it is important to understand college students' perceptions regarding this issue. Other researchers have examined students' perceptions of dating violence, noting that it is important to ensure whether current measures of dating violence adequately capture youths' understanding of this social problem (Lee 1998; Prospero 2006; Sears et al. 2006). Cyber aggression is a new area of study and it is imperative that researchers talk to a variety of individuals, both those with and without

histories of dating violence, in order to learn more about new forms of technology that can be utilized to stalk and harass others. These perceptions will perhaps provide more information about aggressive technological behaviors that occur among young adult couples.

The interview protocol for the qualitative component of this study was a modified version of one used by Sears and colleagues (2006). It consisted of a series of open-ended questions, beginning with general items and then transitioning to specific ones (please see Appendix B). Following the procedural model advocated by Krueger and Casey (2000), the interview protocol began with an introductory question regarding general *perceptions* of partner violence and then transitioned into questions specifically about college dating violence. The key questions included asking the participants about different forms of psychological aggression and how technology may be used in violent relationships. Finally, the respondents were asked to reflect on previous comments and if there was anything else they would like to discuss about college dating violence in the ending questions. The questioning route of the interview protocol provided structure for the interview but allowed for flexibility in probing when appropriate (Berg 2004; Krueger and Casey 2000; Rubin and Rubin 2005). Prior to conducting the first focus group, the protocol was pre-tested with four colleagues and slight modifications were made based on their suggestions. For example, one question regarding the types of settings in which dating aggression may occur was deleted and potential follow-up questions were included in other sections. These suggestions helped maintain the focus of the study and kept the interviews within the target time limit (i.e., between 1 and 1 ½ hours).

Interview process. Interested participants contacted the PI via email and provided the dates and times that they were generally available throughout the week. Once enough participants had similar dates of availability, an interview was scheduled and the participants were notified via email. On the day of the interview, the PI, who served as the moderator for the interviews, and the assistant moderator greeted the participants as they entered the room, offered light refreshments to create a conversational environment, and encouraged them to sit in their randomly assigned seats around the table. Seat designation was signified using nametags that displayed the respondents' first names. At the beginning of the interview, the moderator explained the purpose of the interview and asked participants to sign the consent form and complete a demographic information form. Prior to asking the questions on the interview protocol, the moderator reminded respondents to discuss only their *perceptions* of dating violence and refrain from discussing the details of actual incidents. The participants were then asked to introduce themselves by stating their first name and favorite television show. After the introductions, the moderator began asking the introductory question on the interview protocol and proceeded through the interview guide. The assistant moderator took detailed notes during the entire interview, writing down the first names of the respondents and comments about their verbal and nonverbal responses. At the end of the interview, the moderator thanked the respondents for their participation and gave them information cards to distribute to other potential participants. All of the interviews were audio taped and a professional transcriptionist later transcribed the tapes verbatim. Pseudonyms were used to refer to the respondents in the results section.

Qualitative Data Analysis and Validity Strategies

Data analysis. The qualitative data analyses were centered in the interpretive paradigm, which emphasizes the importance of viewing participants' subjective worlds and recognizes the existence of multiple realities (Lindlof and Taylor 2002). In order to add rigor to the qualitative analyses, the focus group transcriptions were imported into ATLAS.ti, a data management software program (Muhr 2004). The first step in the preliminary data analysis involved rereading each interview transcript in its entirety in order to gain a deeper sense of the data as a whole. At this point, it was determined that the data were consistent across males and females with regard to their perceptions of technological college dating violence so the transcripts were analyzed together. Next, the PI conducted an inductive analysis of the data, which refers to the process of moving from a specific set of observations to the discovery of an overall pattern that is best represented by the observations (Baxter and Babbie 2004; Braun and Clarke 2006). As such, open coding and memo writing procedures were employed and a codebook was created that listed all of the codes. In order to make a connection between the codes, axial coding then occurred and more generalized themes were developed (Corbin and Strauss 2008; Lindlof and Taylor 2002). Finally, following Braun and Clarke's (2006) thematic analysis approach, emergent themes were examined for "keyness," which refers to how well a particular theme captures an important aspect of a research question (p. 82). In vivo codes, which refers to using the respondents' terms and phrases, were also used to delineate these themes (Lindlof and Taylor 2002).

Validity strategies. The findings were validated in two different ways. The first validation strategy employed involved engaging in a collaborative data conference with other colleagues who have experience in interpretive data analysis. The findings were

discussed and the analyses were refined based on these conversations. The second validation strategy used involved member checking procedures (Lindlof and Taylor 2002). The PI met with participants from the first two focus group interviews to discuss the preliminary data analyses in order to verify the accuracy of the findings. The other study participants also gave the PI permission to contact them regarding the findings via email to ensure their accuracy.

Phase 2: Instrument Design

The following eight steps, which are adapted from DeVellis (1991), were followed during the instrument design phase of this mixed methods dissertation project.

Step 1: Assess Topic of Measurement and Theoretical Considerations

First, the PI made decisions regarding what concepts should be measured. Because of the dearth of literature on cyber aggression among current and former romantic partners, the investigator decided to address this topic in the survey instrument. Additionally, recent partner violence research has focused on respondents as both targets and offenders of violence. As such, the investigator decided to ask the participants about their victimization and perpetration experiences. Furthermore, the PI also chose the routine activities theoretical perspective and specific themes that emerged from the preliminary qualitative analyses to guide the creation of the quantitative items and subsequent analyses.

Step 2: Generate an Item Pool

The first mixed methods research question (e.g., determining which cyber aggression items represent the qualitative results), was addressed in the second step.

Thirty-four cyber aggression items were developed to represent the five themes that emerged from the qualitative analysis of the focus group transcripts. Quantitative items were created based on previous literature on cyber violence, the routine activities framework, and the following qualitative themes: *controlling communication, unfiltered communication, violent resistance, quick and easy violence, and private becomes public*. Twenty-two of these items were developed to measure specific cyber aggression behaviors and ask respondents to indicate their experiences as a victim and perpetrator of cyber aggression. There are also three questions regarding the respondents' and their partners' reasons for engaging in aggressive cyber behaviors and their responses to cyber aggression, and nine items about the effects of this form of violence. These short survey items were created to represent a reading level that is appropriate for first year undergraduate students, and each item only asks the respondent a single question.

Step 3: Determine Scale of Measurement and Instrument Construction

The third step in the instrument development phase involved a determination of the scale of measurement (DeVellis 1991). The first section of the measures includes 22 items regarding the respondents' victimization and perpetration experiences with 11 different cyber aggression behaviors. For each behavior, the respondents were asked to indicate whether they perpetrated intimate cyber aggression and if they were victimized by it. Respondents, for example, were asked whether they have ever sent their current or former partners persistent, unwanted text messages and whether their partner has ever done this to them (0 = no, 1 = yes). The nine items regarding the effect of cyber aggression are also dichotomous indicators (0 = no, 1 = yes). Finally, the response categories for the three items about the respondents' cyber aggression motives and

reactions also had dichotomous response categories (0 = no, 1 = yes). Specific codes and respondent quotations were used in the development of some of these response categories. Please see the quantitative measures section for a more detailed description of these measures.

Step 4: Include Validated Items from Other Instruments

Many of the cyber aggression items were self-designed with the assistance of Dr. Kimberly Tyler. In the fourth step, the PI examined the measures that were included in previous cyberbullying and cyberstalking studies in order to ascertain whether these validated items could be included within the partner cyber aggression measures. As a result, some of the cyber aggression items are modified versions of items used in previous research projects. Please see Table 2 for the sources of the cyber aggression measures.

Step 5: Subject Instrument to Expert Review

The cyber aggression measures were evaluated by experts during the fifth step. Prior to the pilot study, the cyber aggression items were reviewed by members of the PI's dissertation committee and other individuals within the department of sociology who are currently conducting research on intimate partner violence. The reviewers assessed the questions for content validity by determining whether the items are measuring the construct of cyber aggression and also examined the relevance, specificity, representativeness, and clarity of the items. At the suggestion of these experts, some of the response categories were modified and six of the items were condensed into three items. For example, instead of including two separate items on threatening or harassing

messages conveyed through text messaging and online communications, a single question was used that incorporated both of these technological forms of correspondence.

Step 6: Administer Instrument

In the sixth step of the instrument design phase, the instrument was administered to a sample of college students for validation.

Permissions. In order to conduct the quantitative phases for this project, IRB approval was obtained (IRB # 2009069743EP). A waiver of consent for permission to administer the survey to students under 19 was granted because the purpose of the project is to examine cyber aggression among college intimates which may include those under the age of consent. Those under 19 may also be experiencing this new form of partner violence and it is important for campus officials and other policy makers to understand more about cyber aggression among college students of all ages. Each respondent was asked to fill out a consent form, informing them of their rights as a research participant and explaining that they have the right to withdraw from the study at any time. All students also received pertinent information regarding partner violence counseling services at the university and within the larger community.

Quantitative pilot study sample. The cyber aggression measures were piloted among a sample of fifty undergraduate students enrolled in two introductory level sociology summer courses in 2009. Each participant signed a consent form prior to completing the survey and received information regarding partner violence counseling services. The survey took approximately 20 minutes to complete. Sixty-two percent were female ($n = 31$) and 38 percent were male ($n = 19$). The majority of the respondents were White (80 percent) with remaining respondents self-identifying as Black, Hispanic,

Asian, and multiracial. On average, respondents were 21 years old and in their sophomore year of college. Forty-eight percent reported perpetrating cyber aggression whereas 46 percent were victims of online harassment.

Step 7: Item Evaluation

The seventh step of the instrument development phase included an evaluation of the reliability and validity survey items from the pilot data in order to address the second mixed methods research question. Descriptive statistics were examined and items that were highly skewed were transformed or recoded for subsequent analyses. Exploratory factor analyses were used to assess the dimensionality of the index. As expected, the cyber aggression indices were multidimensional. Exploratory factor analyses revealed that there were three factors for the cyber perpetration and three factors for cyber victimization items.⁴ The instrument was assessed for construct validity, which refers to the extent to which a measure is related to the underlying construct (Groves et al. 2004), by specifying and testing the linkages between the theoretical and empirical frameworks and determining what the instrument scores mean. For example, the cyber aggression subscales were coded such that a higher score indicates that the respondent has experienced more forms of cyber aggression. Responses ranged from 0 to 3 for cyber perpetration and 0 to 4 for victimization.

Finally, discriminate and convergent validity were assessed by correlating the cyber aggression items with items from the Revised Conflict Tactics Scale (CTS2) (Straus et al. 1996), which is a reliable partner violence instrument. Cyber aggression

⁴ Due to the small sample size, four items were deleted for the cyber perpetration factor analyses (i.e., spreading rumors online, posting private photos online, sending threatening messages, and using GPS technology to track a partner's location). Four items were also deleted for the cyber victimization factor analyses: spreading rumors online, creating a harassing Facebook group, sending sexually harassing messages, and using GPS technology to track a partner's location.

perpetration and victimization were positively associated with offline partner violence. That is, perpetrating more cyber aggression was associated with more offline partner violence perpetration ($r = .53$) and victimization ($r = .31$). Similarly, experiencing more partner cyber aggression was associated with more in-person partner violence perpetration ($r = .48$) and victimization ($r = .37$). These high correlations provide evidence of convergent validity.

Step 8: Refine Scale Length

During the final step, the instrument was revised based on item performance and reliability checks. Modifications were made based on the respondents' commentary regarding the survey items. For example, additional response categories were added for the race and ethnic group question and the sorority/fraternity participation item. The IRB approved these modifications prior to the final data collection phase.

Phase 3: Quantitative Administration of the Instrument

Rationale for Survey Research

After the psychometric properties assessment, the cyber aggression instrument and related items were included on a larger survey. As such, survey research was used to collect quantitative data for the third phase of this study. The primary reason why the quantitative data was collected in this manner is because it is important to assess the reliability and validity of the cyber aggression items among a larger sample of college students. Additionally, survey research provided a systematic, cost effective, and efficient way to examine a multitude of correlates of this form of partner violence. Because many of the survey items include sensitive topics such as victimization and perpetration

experiences, it was anticipated that collecting the quantitative data via self-administered survey methods would decrease social desirability bias, which refers to the tendency to represent oneself favorably (Groves et al. 2004), and encourage respondents to provide more accurate answers.

Sample

The sample used for the current analyses consisted of a convenience, nonprobability sample of undergraduate students currently enrolled in certain courses during the fall 2009 semester. In the summer of 2009, the PI contacted all instructors via email in the department of sociology and selected instructors in the children, youth, and family studies; communication studies; and psychology departments who are teaching courses during the fall 2009 semester and asked their permission to administer the survey in their classrooms. The PI then scheduled a date and time to administer the survey in the classrooms of the instructors who granted their permission. The survey was administered in the following classrooms: (1) introduction to sociology, (2) nationality and race relations, (3) social problems, (4) marriage and family, (5) sociology of crime, and (6) introduction to sociological research. Because a waiver of informed consent was received, all students including those under the age of 19 were eligible to participate in the current study. Despite this waiver, all participants were asked to sign a consent form and also received a copy of this document which included information about the study and contact information for local relationship violence services. The total sample used for the current analyses was $n = 607$. Each survey was assigned a unique code number for data entry purposes. Because the respondents were only asked to provide their initials, the

responses cannot be linked to individual participants and remained confidential.

Respondents completed the survey in approximately 20 minutes.

Forms of Data Collected

The quantitative data was collected using paper, self-report survey questionnaires that were administered in university classrooms during scheduled class times. The survey consisted mainly of demographic and personal characteristics items that have been used and validated in other social science investigations. Although many of the cyber aggression items were based on the five qualitative themes and were self-designed with the assistance of Dr. Tyler, some are modified versions of questions administered in previous cyberbullying and cyberstalking studies (Finn 2004; Hinduja and Patchin 2008; Mitchell et al. 2007; Raskauskas and Stoltz 2007; Spitzberg and Hoobler 2002).

Dependent Variable Measures

Cyber aggression between intimate partners. Respondents were asked 22 questions about their perpetration and victimization experiences with intimate partner cyber aggression within the past 12 months. *Cyber aggression perpetration* was created using 11 items that asked respondents, for example, if they had ever sent a partner persistent, unwanted text or online messages; posted private information, photos, or videos online without their partner's permission; and accessed a partner's online accounts without permission. Response categories included 0 = no and 1 = yes. A count scale was created using these variables that ranged from 0 to 10. Due to skew, however, this variable was collapsed with a final range of 0 to 5. The *cyber aggression victimization scale* included items that asked respondents whether they had been victimized by the

same behaviors as those used in the perpetration scale. This item was created in the exact same manner as the scale above (range = 0 to 6). Please see Table 2 for the sources of the cyber aggression measures.

Independent Variable Measures

Proximity. Proximity, which refers to the physical distance between potential targets and offenders (Cohen et al. 1981), was measured by examining respondents' place of residence, their involvement in athletic organizations, as well as their affiliation with fraternities and sororities. *Respondent's residence* included four dichotomous variables: off campus apartment or house, campus housing, Greek housing, and at home with parents. Living off campus in an apartment or house was used as the reference group.

Athletic participation was measured using a single item indicator that was coded such that 0 = no participation in organized sports, 1 = participation in community recreational sports teams, 2 = participation in UNL intramural or club sports teams, and 3 = participation in official UNL athletic teams with a higher score indicating more risk.

Finally, respondents were asked to identify the extent of their *affiliation with sororities and fraternities* on campus. Response categories included 0 = I am not a member and I never attend fraternity and/or sorority events, 1 = I was a member of a fraternity or sorority but I am no longer a member, 2 = I am not a member but I occasionally attend fraternity and/or sorority events, 3 = I am not a member but I regularly attend fraternity and/or sorority events, and 4 = I am a member of a fraternity or sorority. This item was dichotomized such that 0 = not a member and do not regularly attend events and 1 = regular event attendance or fraternity or sorority member. This measure was a modified version of an item used by Park, Sher, and Krull (2008).

Exposure. Exposure, which includes the visibility and accessibility of targets to offenders (Cohen et al. 1981), was measured by asking respondents about their time spent online, texting, and online dating. Respondents were asked *how much time they spend online* in an average day which ranged from 0 = I never go online to 7 = online for 6 hours or more. The average time spent online was between two and three hours (mean = 3.31). Text messaging behavior was measured by asking respondents to indicate *how many texts they receive* during an average day. Response categories included 0 = none, 3 = 11 to 25, 5 = 51 to 75, and 7 = more than 100 (mean = 4.02, indicating that on average, respondents receive between 26 and 50 messages per day). Finally, *online dating* was measured using two items. Respondents were asked if they ever met a dating partner online within the past 12 months and if they met their current partner online (0 = no, 1 = yes). These two items were combined into a single item that was coded 0 = have not dated online in the past 12 months and 1 = dated online during the past 12 months.

Attractiveness. Attractiveness/vulnerability, which refers to the desirability of a target to an offender (Cohen et al. 1981; Cohen and Felson 1979), was assessed by asking respondents about their experiences with family violence (e.g., physical abuse, sexual abuse, neglect, and parental violence), self-esteem, and substance use. *Physical abuse* was measured using six individual items from the Conflict Tactics Scale (Straus, Hamby, Finkelhor, Moore and Runyan 1998). Respondents were asked to reflect upon abusive experiences that occurred prior to age 18 and asked how frequently their caretaker, for example, shook them, threw or knocked them down, and slapped them on the face, head, or ears. Responses ranged from 0 = never to 6 = more than 20 times. Because of skew, the response categories were collapsed such that 0 = never, 1 = once, 2 = twice, 3 = 3 to 5

times, and 4 = 6 times or more. A mean scale was created and a higher score indicated more physically abusive experiences. These items have been found to have high internal reliability among college student samples (Shook, Gerrity, Jurich and Segrist 2000), and Cronbach's alpha = .77 for the current sample.

Sexual abuse was measured using four items adapted from Whitfield and colleagues (2003) and Wyatt (1985). Respondents were asked to indicate whether they had sexual experiences with someone at least 5 years older than them prior to the age of 18. For example, respondents were asked whether a relative, family friend, or stranger ever touched or fondled their body in a sexual way or had any type of sexual intercourse with them. Response categories included 0 = no and 1 = yes. These four items were summed together such that a higher score indicated more sexual abuse (Cronbach's alpha = .88). Because of skew, the final item was dichotomized such that 0 = no sexual abuse and 1 = experienced at least one form of sexual abuse.

Neglect was assessed using three items from a supplementary scale within the Parent-Child Conflict Tactics Scale (CTSPC) (Straus et al. 1998). Respondents were asked, for example, how many times their caretaker wasn't able to give them food, clothing, or other basic things that they needed, with the response categories ranging from 0 = never to 6 = more than 20 times. These individual items were dichotomized due to skew (0 = no neglect and 1 = experienced at least once) and then summed together such that a higher score indicated that the respondent experienced more neglect. Cronbach's alpha was .71. Because of skew, the final neglect item was dichotomized such that 0 = no neglect and 1 = experienced at least one form of neglect once.

Witnessing interparental violence was assessed using a modified question from Ehrensaft and colleagues (2003). Respondents were asked whether they had seen or heard a physical fight between their parents or their parent and his/her partner when they were growing up. Response categories included 0 = I never saw or heard a physical fight, 1 = once, 2 = twice, 3 = 3 to 5 times, 4 = 6 to 10 times, and 5 = more than 10 times (mean = .99, indicating that, on average, respondents witnessed interparental violence once).

Self-esteem was measured using Rosenberg's (1989) 10-item self-esteem scale which has been demonstrated to have high internal reliability and validity among a variety of samples (Baranik et al. 2008). Respondents were asked, for example, to indicate how much they agree with the following statements: (1) I feel that I have a number of good qualities, (2) I am able to do things as well as most other people, and (3) I certainly feel useless at times. Responses ranged from 1 = strongly agree to 4 = strongly disagree. Certain items were reverse coded such that a higher score indicates that the respondent has higher self-esteem. A mean scale was created using these items. Cronbach's alpha was .89.

Respondent substance use was assessed by asking three questions about their alcohol and other drug use. *Drunk* was a single item indicator that asked respondents how many days they get drunk in an average week. Response categories included 0 = I do not get drunk, 1 = 1 day, 2 = 2 days, 3 = 3 days, 4 = 4 to 6 days, and 5 = every day. Due to skew, this item was recoded such that 0 = I do not get drunk and 1 = I get drunk one day or more per week. Respondents were also asked whether they have used *marijuana* in the past six months (0 = no, 1 = yes). Finally, respondents were asked whether they have

used other *illegal drugs* such as cocaine, inhalants, and amphetamines in the past six months (0 = no, 1 = yes).

Guardianship, which refers to the ability of people or objects to prevent criminal acts (Cohen et al. 1981; Miethe and Meier 1994), was measured using two indicators of *online guardianship*. Respondents were asked whether other people ever joined in an online argument between them and their partner and if their friends or family members ever intervened in an online argument that respondents had with their partner. Response categories included 0 = no and 1 = yes. These two items were summed together but the final indicator was dichotomized due to skew. The final response categories were 0 = no one has ever joined in an online argument and 1 = other people, friends, and/or family have intervened indicating some level of guardianship.

Demographic measures. Respondents were asked to provide the following demographic information: gender, race, age, parental education, and relationship status. *Gender* was coded 0 = male and 1 = female. Respondents were also asked to self-identify their *racial/ethnic identity* and selected from the following categories: 1 = White, not of Hispanic origin, 2 = Black or African American, 3 = Hispanic or Latino, 4 = American Indian or Alaskan Native, 5 = Asian, 6 = Native Hawaiian or Pacific Islander, 7 = biracial, 8 = multiracial, and 9 = other. Because approximately 86 percent of the sample was White, this variable was recoded such that 0 = nonwhite and 1 = White. *Age* was coded such that 1 = 18 years of age or younger, 2 = 19 years of age, 3 = 20 years of age, 4 = 21 years of age, 5 = 22 years of age, 6 = 23 years of age, 7 = 24 years of age, and 8 = 25 years of age or older. *Parental education* was assessed by asking the respondents to identify the highest level of education for their mother and father. Responses ranged from

1 = less than high school to 7 = completed a graduate degree. The mother and father responses were averaged and coded such that a higher score indicates higher parental education. Finally, *relationship status* included four dichotomous variables: not currently in a relationship, casually dating, exclusively dating, and cohabiting or married. Not currently in a relationship was used as the reference group.

Offline partner violence. The *respondent perpetrated offline partner violence scale* included 7 items from the CTS2 (Straus et al. 1996) to assess the amount of partner violence inflicted by the respondent during the past 12 months. Respondents were asked to identify, for example, how many times they did the following things to their partner or previous partner: pushed, shoved or slapped; slammed against a wall; and punched, kicked, or beat up. Response categories ranged from 0 = never to 4 = very often. These 7 individual items were dichotomized due to skew and a count scale was created that ranged from 0 to 7. Because this scale was skewed, the item was collapsed with a resulting range of 0 to 4. The *partner perpetrated offline violence scale*, which included the same 7 items from the CTS2, was calculated in the exact same manner as the scale above with the exception that the introduction to the questions asked respondents how often their partner inflicted violence. For the crosstabs analyses, the physical and psychological perpetration and victimization measures were dichotomized. Response categories included 0 = no partner violence and 1 = at least one form of partner violence.

Offline partner sexual aggression was measured using 10 modified items from the Sexual Experiences Survey (Koss and Oros 1982) which has been widely used among college samples (Kimble et al. 2008; Koss and Gaines 1993; Koss, Gidycz, and Wisniewski 1987; Voller, Long, and Aosved 2009; Yeater et al. 2008). These items were

revised such that both male and female respondents were asked about their sexual aggression victimization and perpetration experiences with their partners. Respondents were asked to report whether or not they had, for example, engaged in sexual activities with a partner even though they did not want to because he or she threatened to end their relationship. A count scale was created using five victimization items. This scale was then dichotomized due to skew (0 = never experienced partner sexual victimization; 1 = experienced at least one form of partner sexual victimization). Respondents were asked whether they perpetrated the same five sexually aggressive behaviors. The partner sexual perpetration measure was calculated in the same manner as the victimization item (0 = never perpetrated partner sexual aggression; 1 = perpetrated at least one form of partner sexual aggression).

Stalking victimization was measured using 5 items from the 20-item National Violence Against Women Survey (Tjaden and Thoennes 1998). Respondents were asked, for example, whether a current or former partner ever followed or spied on them or showed up at places they had no business being to keep track of or bother the respondent. Responses were coded such that 0 = no and 1 = yes. These items were combined into a count scale that was then dichotomized due to skew (0 = has not been stalked; 1 = experienced at least one form of stalking victimization).

Respondents were also asked seven questions about the *effects of partner cyber aggression*. For example, respondents were asked if any of their negative communications through technology resulted in a face-to-face argument or forced physical contact (0 = no, 1 = yes). Two of these items, which asked respondents whether they felt threatened by cyber aggression or scared for their safety, were adapted from

previous cyberbullying studies (Hinduja and Patchin 2008; Mitchell et al. 2007).

Respondents were also asked how they respond to cyber harassment which is an item adapted from the work of Patchin and Hinduja (2006) and Dehue and colleagues (2008).

Finally, respondents were asked two self-designed questions about their reasons for sending threatening or harassing online messages and their perceptions of why their partner sent these messages. Response categories reflected the focus group interview transcriptions (e.g., It's quicker than communicating in person). Each of these 10 items was a single item indicator. None of the variables used in the analyses were skewed.

Quantitative Data Analyses

Quantitative data analyses were conducted using SPSS. The data were entered and double checked by the PI to ensure accuracy and then cleaned through recoding, labeling, and transformation procedures. Once the variables were created, the initial data analyses commenced by examining distributional characteristics, item variability, and missing data patterns. Descriptive statistics on the core study measures were calculated and general trends in the data were examined. Ordinary least squares regression (OLS) was the primary analytic technique used to answer the quantitative research questions regarding the correlates of intimate partner cyber aggression. Tables and figures were used to present the data and augment the results of the data analysis. The qualitative results are presented in Chapter 5 followed by the quantitative results in Chapter 6.

CHAPTER 5: QUALITATIVE RESULTS

Sample Characteristics

A total of five focus group interviews were conducted: three female-only and two male-only groups. Participants included a convenience sample of undergraduate students enrolled in sociology and communication studies courses. Approximately 8 people attended each session for a total of 39 respondents. The respondents received course credit for their participation in the 1 to 1 ½ hour focus group interviews. Ages ranged from 18-23 years (mean = 20.34 years) and participants had an average of 3 years of college education. The majority of the sample was White (87 percent) with the remaining participants self-identifying as Black, Hispanic, Asian, and biracial.

Partner Violence in Cyberspace

The research question guiding the qualitative analysis was: What forms of cyber aggression occur among college students involved in intimate relationships? The focus group participants discussed a wide variety of psychologically aggressive behaviors that occurred via technology such as stalking in cyberspace, posting incriminating photos and videos, and texting harassing messages. Five interrelated themes emerged from the focus group discussions: (1) *controlling communication*, (2) *unfiltered communication*, (3) *violent resistance*, (4) *quick and easy violence*, and (5) *private becomes public*. These thematic categories describe the types of cyber violence that may occur among couples, rationale for using electronic devices to convey harassing messages, and how newer forms of technology may change how these messages are conveyed. As such, the themes provided more insight into the role of technology in intimate relationships.

Controlling communication: "I'm always in your inbox." One of the most common themes that emerged from the qualitative data was controlling communication which includes frequently contacting their partner and monitoring his/her behaviors. Although a partner may not engage in physical violence using technology, intimate partners can use controlling techniques by communicating via cell phones, social networking websites, and other electronic devices. Continuously sending a partner unwanted or excessive text messages is one way that partners can exert control. Becky and Natalie discussed how a partner can maintain control through constant communication and monitoring behaviors:

Becky: I think it's probably a really big intimidation thing. Maybe it's not so much, oh, I'm standing right here telling you what to do or hitting or whatever, but I'm always in your inbox or your Facebook or whatever, telling you things or messaging you or texting you or whatever it might be. I think it's probably a huge thing. It's another way to control people, too.

Natalie: Yeah, it's checking who you've been calling. "Who did you get messages from?" "Who are you talking to online?"

In addition, Michael mentioned that constant communication occurs whether or not a person is directly speaking to their partner: "Whether you turn your phone off or not, you know those messages are coming and it's the psychological bombardment of negativity." Although the partners discussed above were not in the same physical location, they maintained control through constant communication.

Another form of controlling cyber behavior that the participants discussed was when one partner would constantly monitor the location and activity of the other partner. Some respondents mentioned that partners have used electronic devices such as a LoJack (Ryan) or GPS technology (Sarah) to track the physical location of their partners. For example, Kellie described the following situation that includes control through monitoring behavior:

Or like if you're out with friends one night and someone is just, like, constantly texting you, like, "Where are you at," "What are you doing," "Who are you with," "I know you're with someone else." Like, it's just, like, being controlling, you know, like, they're trying to act like they care about you, but it's still, like, they're being controlling over the situation.

Similarly, Paula described an extreme situation when a boyfriend monitored the online activities of his former girlfriend:

After they broke up, he had access to her banking records on the Internet... He could go online, and he changed her mailing address so her mail went to him. I mean, it completely controlled all this because he could do it because of the Internet. And he had access to her bank records, and he knew her passwords, so her privacy was completely blown out of the water. I mean, it took her forever to rebuild something because of a bad relationship.

Although the level of psychological violence exerted in the situations described by Kellie and Paula seem to be much different, the underlying desire of one partner to monitor the activities of another is a form of cyber aggression.

Partners can also monitor the social networks of their loved ones. Amy and Amanda described a situation in which one partner decided with whom the other partner could communicate:

Amy: I've heard of, like, you have 25 guys in your phone book. "Who are they?"...

Amanda: Like, go through every single one.

Amy: Like, go through every single one and, like, "Who is this, because if it's not your cousin, then you better delete them." No, I'm serious. One of my really good friends in high school, straight up, her boyfriend looked through her phone and was like, "Who is this?" She was like, "Oh, a friend from . . ." And he'd hit delete, and he would delete it right in front of her. Yeah, it's crazy.

In this instance, the boyfriend controlled who his girlfriend could communicate with using her cell phone. Similar situations, such as those mentioned by Justin, may also isolate partners from their networks of opposite-sex friends.

My friend, his girlfriend, she was -- she was terrible in the fact that she would -- she always wanted to see his phone because she liked to read the text messages and stuff... He told me that they got in a fight because he went to the bathroom and his phone was there, and she, like, went through all of his text messages. And if there was just like one girl, like, "Hey, what's up?" Even if they were just friends, she would just flip out. And it was -- their relationship, that's kind of why it didn't really work is because

she didn't want -- wouldn't let him see her phone, but she wanted to see his.

In the abovementioned relationship, text messages from females other than a girlfriend preceded a particular conflict. Although it is unclear what type of argument ensued and whether emotional or physical violence occurred, others such as Sam speculated that “reading your partner’s text messages from somebody else could lead to a violent situation, more verbal, I guess would be a big one.” As such, different forms of technology such as cell phones enable people to monitor their loved one’s private conversations. These monitoring behaviors may spark a violent altercation. Interestingly, these participant quotes highlight an overlap in online and offline harassment. Although the messages from other people were sent electronically, the actual arguments between partners occurred in person. Because controlling communication through frequent contact and monitoring behaviors are ways in which partners can exert continuous control, the abovementioned situations are potential examples of cyber aggression.

Unfiltered communication: “You can say anything.” The second theme regarding cyber aggression among college students focused on the notion that intimate partners may communicate differently using technology than they normally would when interacting in person. Because the individuals engaged in a cyber argument were not speaking face-to-face, many of the visual cues such as facial expressions and body language that convey how the message is being interpreted were absent. For example, Kayla said:

I think another huge thing is that you can say anything. Like a lot of things that you wouldn't have the guts to say to them in person you can type and not have to worry about what they would do back to you. I think that's

probably one of the biggest ones just because you don't have as much of a filter because you don't have this big of a consequence.

Not only can individuals say things that they would not normally say in person, but they do not have to worry about the immediate repercussions. Amanda echoed these sentiments as “it doesn't feel like you're actually being that mean because you're just typing it and not actually thinking about what you're saying.” Richard also spoke of the ease with which individuals can engage in an argument through text messaging: “You don't have to deal with them after that because they're not directly speaking to you.” Although “it's just a message” (Richard), arguments that occur through new forms of technology may escalate and be considered emotional abuse. Because these heated arguments arise due to the unfiltered communication between conflicting couples, these examples could be considered forms of cyber aggression.

Violent resistance: “Something you can hide behind.” The focus group participants also talked about potential motivations for harassing intimate partners using technology, including retaliating against a violent partner. These situations closely resemble behaviors that Johnson (1995, 2006) describes as violent resistance. According to Johnson (2006), violent resistance refers to situations in which one partner is violent and controlling and the other partner responds with violence in a manner akin to self defense (Johnson 2006). Although it may be very difficult to envision situations in which a victim of violence may use technological means to combat against a violent perpetrator, a few respondents talked about situations in which this may occur. For example, Michelle mentioned that a few of her acquaintances used social networking websites such as Facebook to end their aggressive relationships:

I know a couple of girls who have been in bad relationships and they used Facebook to be like, I don't want to see you anymore. And, like, it sounds so sixth grade, but they just couldn't bring themselves to do it in person, and they didn't know what else to do.

Amy also discussed how different forms of technology may allow a victim of violence to retaliate from a safe distance away from an aggressive partner:

It's like a wall, something you can hide behind, you know. Like, sure, I said it, and sure, there's, like, documentation that I said it, but you can't hit me through my computer screen or through my cell phone. You know, what are you going to do about it?

Although Michelle did not elaborate on what her acquaintances said on Facebook when ending their bad relationships, these situations and the one Amy described could potentially involve insults and threats that violence researchers would consider psychological aggression. From the perceptions of both of these participants, these were potential situations in which victims responded to a partner's violent and controlling behaviors using newer forms of technology.

Quick and easy violence: "It's so easy." The participants also perceived the speed and ease with which partners can send and receive harassing messages to be an important component of cyber aggression. Several participants discussed how technology allows individuals to stay connected throughout the day. When asked why someone would use technology to perpetrate partner violence, Alexis responded:

I think that's easier, like you said; like, not only is it constant, you can do it all the time, you know. If I had a thought during the day that I wanted to

do something, you can text them right away. You don't have to wait till you see them... It can just be right away.

This participant perceived the speed with which text messages can be sent to be an attractive feature for abusive partners. Amy also believed that using technology to convey aggressive messages “triggers things much more quickly.” For these participants, the speed of communication may have important implications for the role of technology in college partner violence.

Many respondents spoke about how easily individuals may use many forms of technology and how this might be an important consideration for partner violence research. According to Richard, “It’s a lot easier to harass people because it’s pretty easy to send a text message or an email or something.” Not only are newer communication devices simple to use, there are also more options available. For example, Elizabeth mentioned the following when asked to reflect on technology’s role in college partner violence:

It makes it kind of easier. Okay. Well, before text messaging or something, if somebody wanted to say something to you, you had the choice of when you wanted to talk to them or not. You could just not answer your door or whatever. But they could still be sending you those text messages and stuff like that.

Other participants such as Alan mentioned that people can operate newer forms of technology such as cell phones effectively even when under the influence of substances:

We were talking about how, you know, alcohol, like, plays into, like, emotional abuse. And I mean, it's pretty easy, just if, you know, you get,

you know, pissed off, you know, just to do a little drunk dial or drunk text.

It's pretty dangerous... Probably like 30 years ago or, you know, like 50, you didn't see a lot of like drunk letter writing.

Consequently, the advent of new technological innovations has changed not only the ways in which aggressive messages may be conveyed but also the speed with which they are received.

Because technology is so easy to use and access, some respondents such as Maria assert that there may be an increase in psychological aggression among college couples in the future:

I think it's a little more prevalent in our generation and the coming generations that are going to be in college in the next few years just because we are the digital generation. We have all these different types of technologies at our disposal, and they're so easy to access, and they're so easy for us to use that it's very easy to get into a fight over Instant Messenger or on your Wall on Facebook or anything like that. So I think you might see an increase in violence, as far as verbal abuse, with this coming generation just because of that, because I think past generations just didn't have that technology advantage.

As such, this participant highlighted the importance of considering the speed and ease of communication methods when conducting partner violence research among younger generations.

Private becomes public: “You can make it sting a lot more.” The final theme illustrated how arguments between couples become public domain and the consequences

associated with this exposure. Some forms of interpersonal communication via technology are more private than others. For example, arguments that occur through cell phone calls are more confidential than insults posted on Facebook. Several participants discussed how disgruntled partners used Internet sources such as social networking websites to harass and embarrass their partner. For example, Josh discussed how former partners used these communication methods: “Just like with Internet bullying, I guess...I'm sure that can be used to degrade somebody, like saying all this stuff about them ... maybe saying those insulting terms online... where everyone can see it, I guess.”

Similarly, when asked whether insulting comments posted online constitute partner violence, Susan said, “Yeah...I mean, it's definitely, you know, insulting and embarrassing, and it's public embarrassment. Definitely.” April also mentioned, “When you post something on the Wall, it's, like public. Everybody can see it, so it's not good.” From the perceptions of these participants, therefore, arguments that occurred online became public knowledge, which perhaps adds another dimension to college partner violence.

Not only can friends and family members of a couple in conflict learn about their fight online, but they even join in the argument. Laura and Maria both talked about what happened when partners posted negative comments about each other online:

Laura: I think, like, what Facebook does is, you can make it sting a lot more, like by posting something, you know, an insult, whatever it might be, but knowing that, you know, 50 people are going to go to that site and see what you said. Like, I think you can really hurt people, maybe not worse... but definitely hurt people, yeah.

Maria: I think it can do a lot more damage, because, again, it's, you know, this person breaks up with this person because they were cheating or something, so then the person who was cheated on, their brother gets into the fight over Facebook and starts posting things on the Wall, and the sister gets into it, and their friends get into it, and you've got 15 people coming at one person because of one mistake that they made that, previously to Facebook, would have been a week thing and then diffused, and life could go on. As opposed to now it's a two-month thing, and it's just over and over again because once you delete that one post on your Wall, they put another one up.

Additionally, Maria explained, "I've seen postings like that that are made public, and they can get pretty nasty pretty quick and involve a lot of people that shouldn't even be included in the fight." As such, these respondents specifically mentioned the snowball effect of online postings and how arguments escalated and lasted longer when conducted through social networking websites. Although it is unclear whether the disgruntled partners in the scenarios described by Laura and Maria solicited others to participate in the argument, Susan described a situation in which a female recruited others to harass her former boyfriend:

A couple that I knew broke up, and the girl started a Facebook group, which is- - or, like, something like "So and So is a Big Slut," ...and, like, had all their friends join it. And I don't even know because it was just so ridiculous that I would not have even registered that as actually dating violence, but, like, I have seen that happen.

According to the participants, psychologically aggressive exchanges that once took place privately between feuding couples became public domain and may constitute emotional violence. Additionally, other interested parties got involved in the conflict when private conversations become public.

In summary, these five interrelated themes, which included *controlling communication, unfiltered communication, violent resistance, quick and easy violence,* and *private becomes public*, represented the participants' perceptions of the role of technology in college partner violence. These thematic categories highlighted how electronic devices may be used to perpetrate partner violence and how certain features of psychological aggression have changed with the introduction of newer forms of technology. Although it may be overlooked, emotional violence could be as damaging online as it is in person. The quantitative results, which complement the qualitative results in this chapter, are presented in Chapter 6.

CHAPTER 6: QUANTITATIVE RESULTS

Sample Characteristics

The sample characteristics are presented in Table 3. Because the focus of the current project was on partner cyber aggression, only those who reported being in an intimate relationship during the past 12 months were retained for the subsequent analyses (n = 490). Sixty percent of the sample was female (n = 296) and approximately 40 percent were male (n = 194). The majority of the sample was White (86 percent). Four percent of respondents were Hispanic, 4 percent were Asian, and 3 percent were Black. The remaining respondents self-identified as American Indian or Alaskan Native, Native Hawaiian or Pacific Islander, biracial, and multiracial (results not shown). Selection categories for age ranged from 18 or younger to 25 or older with an average age of 21. On average, respondents' parents had attended some college. Almost half of respondents lived on campus (approximately 7 percent in Greek housing and 43 percent in other campus housing). Twenty-one percent of participants reported either being a member of a fraternity or sorority or regularly attending fraternity and/or sorority events. Although the majority of respondents did not participate in organized sporting activities (52 percent), approximately 4 percent participated in community recreational sports programs, 34 percent played on university intramural athletic teams, and 11 percent were members of official university sports teams (results not shown).

Respondents reported low levels of family violence and moderate levels of substance use. Approximately 9 percent reported that they were sexually abused or neglected during their childhood and, on average, respondents experienced physical abuse once. Although a majority of respondents did not witness interparental violence (66

percent), 24 percent of respondents saw or heard a physical fight between their parent and his/her partner between 1 and 5 times while growing up. Additionally, only 6 percent reported that they had used illegal drugs whereas 27 percent used marijuana at least once during the past six months. The average respondent also reported being drunk one time during an average week.

In terms of technology use, the average time spent online per day was between two and three hours. It is interesting to note that almost 22 percent reported spending between 3 and 4 hours online and 21 percent spend 4 hours or more during a typical day. On average, respondents reported that they receive between 26 and 50 texts per day. Seventeen percent, however, report that they receive 51-75 text per day, 8 percent receive 76 to 100 texts, and 15 percent receive more than 100 texts per day. Furthermore, 6 percent reported that they dated online during the past year (see Table 3).

Respondents were also asked to indicate why they used technology to send threatening or harassing messages to their current or former partners (results not shown). The majority of respondents reported that they did not send these messages to their partners (92 percent, $n = 433$), and the remaining respondents provided a variety of reasons for engaging in this behavior. For example, approximately 4 percent ($n = 17$) of respondents said that they sent threatening or harassing electronic messages because it is easier and 3 percent ($n = 15$) said it is quicker than communicating in person. The remaining respondents reported sending these messages because they did not have to see their partner's reaction (2 percent, $n = 9$) or hear their partner's response (2 percent, $n =$

8) or because they wanted to embarrass their partner because others could see their postings (1 percent, n = 4).⁵

Some respondents also provided qualitative reasons for perpetrating partner cyber aggression. The rationale for engaging in partner cyber aggression varied. For example, one white female respondent wrote, “I was threatened with physical violence by his current girlfriend so I texted him saying if he ever called me or she threatened me I would call the police.” Another female college junior respondent wrote, “He hurt me emotionally. I just wanted to hurt him too. I’ve grown up...” According to these respondents, communications via technology may provide a way to retaliate against a partner.

Additionally, respondents were asked to speculate why their partner sent them threatening or harassing electronic messages. Although 87 percent reported that their partners did not send these messages to them (n = 408), 5 percent (n = 24) reported that their partner sent these messages because doing so is easier than communicating in person. Approximately 3 percent (n = 15) reported that their partner sent threatening or harassing electronic messages because it is quicker than communicating in person. Similarly, some respondents also believed that their partners sent these messages because their partner did not have to see their reaction (3 percent, n = 15) or hear their response (3 percent, n = 13). One percent (n = 6) reported that their partners sent threatening or harassing messages in order to embarrass the respondents.

Twelve respondents also provided other reasons that they believed their partners sent them threatening or harassing messages. Four respondents mentioned that it was likely that their partners engaged in cyber aggression due to the physical distance

⁵ The total of these responses is over 100% due to rounding.

separating them. For example, one Hispanic female respondent provided the following response: “We weren’t around each other, that was my only way of communicating.” Some respondents mentioned that certain features of online communication may have appealed to their partners. A nineteen year old female respondent wrote, “He didn’t like arguing in person; I feel he could stick to his arguments better that way.” As such, the physical separation may have made it easier for this partner to communicate harassing messages. Others cited specific relationship problems that may have contributed to their partners’ preference for cyber harassment. One white female respondent wrote that her partner sent harassing electronic messages “to hurt my feelings and break me down.” These responses provide more insight into the motives behind partner cyber aggression.

Proportion of Sample with Cyber Aggression Experiences

The first quantitative question was: What proportion of college students experience intimate partner cyber aggression? In order to answer this research question, the proportion of college students that experienced partner cyber aggression perpetration and victimization was examined. Seventy-one percent of respondents reported perpetrating at least one aggressive cyber behavior (e.g., accessed online accounts without permission and sent threatening or harassing text messages) against a partner during the past 12 months. Similarly, 75 percent of respondents reported experiencing partner cyber aggression within the past year. On average, respondents reported perpetrating one form of cyber aggression and experiencing two forms of cyber aggression.

Frequencies for each individual cyber aggression perpetration and victimization item are presented in Table 4. In terms of perpetration, almost 50 percent of respondents reported that they checked a partner's cell phone to see who he/she had been talking to or texting, and 43 percent said that they sent their partners repeated electronic messages asking where they were at or what they were doing. Almost 9 percent said that they sent their partner persistent, unwanted text or online message whereas 16 percent of respondents admitted to accessing their partners' online accounts (e.g., email or Facebook) without permission. Only two percent of respondents reported sending sexually harassing messages online or via a cell phone.

In terms of victimization, 57 percent reported that their partners checked their cell phone to see who they had been talking to or texting. Approximately 53 percent reported that their partner sent them electronic messages asking them about their activities or location, and 18 percent said that their partners sent them unwanted text or online messages. Additionally, 14 percent said that their partners accessed their online accounts (e.g., email or Facebook) without permission. Finally, a small percentage of respondents reported receiving sexually harassing messages online or via a cell phone (almost four percent).

Gender differences were also examined using crosstab and t-test procedures to see whether males and females significantly differed in their use of cyber aggressive behavior (results not shown). Results for chi square comparisons revealed that there were significant differences for only three perpetration and three victimization items. For perpetration, females were more likely than males to report checking a partner's cell phone to see who he/she was talking to or texting ($\chi^2 = 13.646^{***}$). Males, however,

were more likely to report creating a Facebook or MySpace group that posts negative information about his partner ($\chi^2 = 4.267^*$) and posting private information, photos, or videos of their partner online without his/her permission ($\chi^2 = 3.975^*$) than females. The last two gender differences should be interpreted with caution due to the small cell sizes. For victimization, males were more likely to report that their partner accessed their online accounts without permission than females ($\chi^2 = 5.895^*$). Additionally, males were more likely than females to report that their partners created an online group that posts negative information about them ($\chi^2 = 5.667^*$) and posted private information, photos, or videos of them without permission ($\chi^2 = 4.942^*$). Again, the last two gender differences should be interpreted with caution due to the small cell sizes. T-tests comparisons were used to compare the means of females and males on the continuous cyber aggression perpetration and victimization scales. There were no significant gender differences when using these continuous items (results not shown).

Correlates of Cyber Relationship Aggression

The following section examines the second quantitative research question: What personal characteristics (i.e., living arrangements, campus activities, technology use, child abuse histories, self-esteem, substance use, and demographic factors) are associated with cyber relationship aggression? OLS regression was used to examine both cyber perpetration and victimization, and the standardized beta coefficients (β) are presented below for each model. The results of the OLS regression analyses for partner cyber aggression perpetration and victimization are presented in Tables 5 and 6, respectively. For both perpetration and victimization, the variables were entered in five separate blocks

to examine the individual effects of each group of variables. The variables were grouped by theoretical construct in order to determine the unique effect of each construct such that the proximity items were in Model 1, the exposure variables were added in Model 2, the attractiveness items were included in Model 3, and the guardianship variables were added in Model 4. In Model 5, the demographic variables were included.

Partner Cyber Aggression Perpetration

The results for perpetration in Table 5 reveal that although none of the proximity variables were significant in Model 1, living on campus was associated with cyber aggression perpetration in Model 2. Compared to those who live off campus, those who reside in campus housing were less likely to be perpetrators of cyber aggression ($\beta = -.11$). Two of the exposure variables were also significant in Model 2: those who spent longer time online ($\beta = .15$) and received more text messages ($\beta = .15$) were likely to perpetrate more cyber aggression against a partner. This model explains 7 percent of the variance in cyber aggression perpetration and the F test reveals a significant improvement in model fit from Model 1 to Model 2 ($F \text{ Change} = 8.007, p \leq .001$).

Attractiveness and vulnerability items were included in Model 3. Those with lower self-esteem were likely to perpetrate more cyber aggression ($\beta = -.11$). Alcohol use was positively associated with cyber aggression perpetration: those who report getting drunk at least once a week were likely to perpetrate more cyber aggression ($\beta = .15$). Amount of time online and number of texts received remained significantly associated with cyber aggression perpetration. Living on campus, however, was not significantly associated in this model. Twelve percent of the variance in cyber aggression perpetration

was explained in Model 3 and there was a significant improvement in model fit with the addition of the attractiveness and vulnerability variables (F Change = 3.309, $p \leq .001$).

Guardianship was included in Model 4 and was positively associated with cyber aggression perpetration. Those who reported having online guardianship, which refers to having friends or family members who intervened and/or joined in an online argument that they were having with a partner (Cohen and Felson 1979; Cohen et al. 1980; Felson 2002), were likely to perpetrate more cyber aggression ($\beta = .25$). Living on campus was negatively associated with cyber aggression perpetration ($\beta = -.11$). All other variables from Model 3, with the exception of self-esteem, remained significantly associated with cyber aggression perpetration in this model. These variables explained 17 percent of the variance in cyber aggression perpetration in Model 4 and there was a significant improvement in model fit with the addition of the guardianship measure (F Change = 26.507, $p \leq .001$).

The demographic variables were included in the final model. Gender and race were significantly associated with cyber aggression perpetration. Compared to males and Whites, females and non-Whites were likely to perpetrate more cyber aggression ($\beta = .13$ and $\beta = -.10$, respectively). Athletic activity participation was associated with cyber aggression perpetration in this model. Those who participate in more competitive athletic activities were likely to perpetrate more cyber aggression ($\beta = .11$). Sexual abuse was also significantly associated with cyber aggression perpetration. Those who experienced sexual abuse were less likely to perpetrate cyber aggression compared to those who have not been sexually abused ($\beta = -.10$). Self-esteem was also negatively associated with cyber aggression perpetration ($\beta = -.10$). With the exception of campus housing, all of the

Model 4 variables remained significantly associated with cyber aggression perpetration. Model 5 explained 21 percent of the variance in cyber aggression perpetration and there was a significant improvement in model fit with the addition of the demographic variables (F Change = 2.493, $p \leq .05$).

Partner Cyber Aggression Victimization

Similar to the perpetration models, the variables for the victimization models were entered in five separate blocks that were grouped by theoretical construct (i.e., proximity, exposure, attractiveness, guardianship, and demographic characteristics). In Table 6, the results for cyber aggression victimization revealed that none of the proximity variables were significantly associated with cyber aggression victimization in Model 1 or any of the other models. In Model 2, all of the technology exposure variables were significant. Those who spent longer time online ($\beta = .15$) and received more text messages ($\beta = .17$) were likely to experience more cyber aggression victimization. Compared to those who have not dated online, those who dated online in the past year were likely to experience more cyber aggression victimization ($\beta = .10$). This model explains 8 percent of the variance in cyber aggression victimization and the F test reveals a significant improvement in model fit from Model 1 to Model 2 (F Change = 10.149, $p \leq .001$).

Attractiveness and vulnerability items were included in Model 3. Those who experienced more physical abuse ($\beta = .17$) and had lower self-esteem ($\beta = -.10$) were likely to experience more cyber aggression victimization. Compared to those who did not get drunk, respondents who reported getting drunk at least once in an average week were likely to experience more cyber aggression victimization ($\beta = .14$). Although amount of

time and number of texts received remained significantly associated with cyber aggression victimization, dating online was not significantly correlated with victimization in this model. Seventeen percent of the variance in cyber aggression victimization was explained in Model 3 and there was a significant improvement in model fit with the addition of the attractiveness and vulnerability variables (F Change = 5.946, $p \leq .001$).

Guardianship was included in Model 4 and was positively associated with cyber aggression victimization. Those who reported online guardianship were likely to experience more cyber aggression victimization ($\beta = .29$). With the exception of self-esteem, all other variables from Model 3 remained significantly associated with cyber aggression victimization. These variables explained 23 percent of the variance in cyber aggression victimization and there was a significant improvement in model fit with the addition of the guardianship variable (F Change = 39.428, $p \leq .001$).

Finally, the demographic variables were included in Model 5. None of the demographic characteristics were significantly associated with cyber aggression victimization. Time spent online, number of texts received, physical abuse, getting drunk in an average week, and online guardianship remained significant correlates of experiencing cyber aggression victimization. Although there was not a significant improvement in model fit with the addition of the demographic variables, Model 5 explained 24 percent of the variance in cyber aggression victimization (F Change = .576, $p = .776$).

Partner Violence: Cyber Aggression and Offline Violence

Crosstabs and correlations were used to examine the third quantitative research question: What is the strength of the relationship between cyber aggression and in-person aggression among college intimates? Table 7 displays the results of the crosstabs between cyber aggression perpetration and psychological, physical, and sexual aggression. Column 1 displays the overlap between cyber aggression perpetration and psychological aggression. Although roughly 18 percent of the sample reported that they did not perpetrate either form of aggression, 45 percent perpetrated both cyber and psychological aggression against a partner. A higher percentage of the sample reported perpetrating cyber aggression only than psychological aggression only (26 percent and 11 percent, respectively). Cyber aggression and physical aggression perpetration are presented in Column 2. Perpetrating physical aggression only is much less common than perpetrating cyber aggression only: approximately 2 percent of the sample was physically aggressive only toward a partner whereas 57 percent of respondents harassed a loved one via electronic communications only. Fourteen percent of the sample, however, perpetrated both cyber and physical aggression. Finally, Column 3 displays cyber aggression and sexual aggression perpetration. Only about 5 percent of the sample reported perpetrating both cyber and sexual aggression, 1 percent engaged in sexual aggression only, and 66 percent harassed their partners online.

The results of the crosstabs between cyber aggression victimization and psychological, physical, and sexual victimization are displayed in Table 8. Column 1 displays the overlap between cyber aggression and psychological aggression victimization. Almost half of the sample reported being victims of both cyber aggression

and psychological aggression, and 16 percent reported that they did not experience either form of aggression. Interestingly, 26 percent of respondents were only victims of cyber aggression whereas 9 percent reported experiencing psychological aggression only. The overlap between cyber and physical aggression victimization is displayed in Column 2. Similar to perpetration, more respondents reported experiencing cyber aggression victimization only compared to physical violence only (62 percent and almost 2 percent, respectively). Thirteen percent of respondents reported being victims of both cyber and physical aggression. A combined psychological and physical victimization variable was also compared to cyber aggression (results not shown in Table 8). These results reveal that almost half of the sample reported experiencing both cyber aggression and physical/psychological violence, 26 percent were victimized by cyber aggression only, and 9 percent were victims of physical/psychological violence only.

Cyber aggression and sexual aggression victimization are examined in Column 3. Only 1 percent of respondents experienced sexual aggression only, but 63 percent were victims of cyber aggression only and 12 percent experienced both forms of violence. Finally, Column 4 displays the overlap in cyber aggression and stalking victimization.⁶ The majority of respondents (54 percent) were victims of cyber aggression only; however, almost 22 percent experienced both stalking and cyber aggression. Only 3 percent were stalking victims only, and 22 percent did not experience either form of aggression.

In order to assess the strength of the relationship between cyber aggression and offline partner violence, bivariate correlations were examined (please see Table 9). The

⁶ Unfortunately, the survey only included stalking victimization items. Respondents were not asked whether they stalked their former or current partners.

correlations between cyber aggression perpetration and offline partner violence are displayed in Column 1. A single measure of psychological and physical aggression was used for these analyses because they are both CTS2 subscales and are often combined in partner violence studies (Gonzalez-Mendez and Hernandez-Cabrera 2009; Kaura and Allen 2004; Noland et al. 2004; Wekerle et al. 2009). Cyber aggression perpetration was positively associated with all of the offline forms of partner violence. That is, perpetrating sexual partner violence ($r = .172$) and more physical and/or psychological aggression ($r = .394$) were associated with perpetrating cyber aggression. In Column 2, the correlations between cyber and offline victimization are presented. Similar to perpetration, cyber aggression victimization was positively associated with offline victimization. Those who experienced more psychological and/or physical violence ($r = .436$) and were stalked more ($r = .518$) were likely to experience cyber aggression victimization. Additionally, those who experienced sexual partner violence were also likely to be victims of cyber aggression ($r = .373$).

Cyber Relationship Aggression and Offline Interactions

Cyber aggression also impacted respondents' face-to-face interactions with their partners, and this was examined to answer the fifth quantitative research question (i.e., "How does cyber aggression impact face-to-face interactions between college students involved in intimate relationships?"). Twenty-six percent of respondents reported that their negative online communications resulted in an in-person argument with their significant other. Fewer respondents reported that negative communications through technology resulted in forced physical (3 percent) or sexual contact (2 percent).

Additionally, online communications led to physical or verbal confrontations among college couples. Approximately 27 percent of respondents reported that they got into a fight because they communicated with someone online or via a cell phone that their partner did not want them to talk to. Also, 24 percent reported that they got into a fight with their partner because of something the respondent or someone else said online (results not shown).

Cyber Relationship Aggression and Perceptions of Safety

Experiencing relationship aggression online may also impact college students' perceptions of safety, and this was examined in the sixth quantitative research question (i.e., "How does intimate partner cyber aggression impact college students' perceptions of safety?"). Five percent of respondents reported that they felt worried or threatened because their partner was harassing them online or through other communication devices during the past year. When asked about their perceptions of vulnerability, 2 percent reported that they were scared for their safety due to something their partner said to them online or through a text message. Those who experience partner aggression online may respond to this harassment in a variety of ways, especially those who are fearful of their intimate partner. Although 81 percent of respondents said that they have not experienced cyber harassment, 6 percent reported that they altered their behaviors by staying offline. Others responded to partner cyber harassment by telling their partner to stop these communications (5 percent), telling someone else such as an online friend or family member about these exchanges (4 percent), or harassing or threatening their partner (1 percent). Five percent said that they do nothing in response to cyber harassment;

however, approximately one percent of respondents reported to the police that their partner was harassing them online.⁷

⁷ The total of these responses is over 100% due to rounding.

CHAPTER 7: DISCUSSION AND CONCLUSION

The victimization of intimate partners is widespread and certain groups of individuals, such as college students, are particularly at high risk (Forke et al. 2008; Katz et al. 2002). Although there is a wide body of literature that examines the risk factors for physical, sexual, and psychological partner violence among this age group (Harned 2002; Fang and Corso 2007; Foshee et al. 2004; Lewis et al. 2002; Luthra and Gidycz 2006; Raskin White and Spatz Widom 2003), recent studies have been criticized for their lack of attention to a wider range of behaviors that may be considered abusive to victims of partner violence (Southworth et al. 2007; Straus and Gelles 1990; Waltermaurer 2005). One new research area that examines negative behaviors that may occur between intimates is cyber aggression, which refers to the use of newer communication technologies (e.g., text messaging) to facilitate repeated harassment with the intention of harming others (Arıcak 2009; Juvonen and Gross 2008; Kowalski et al. 2008; Sheridan and Grant 2007; Spitzberg and Hoobler 2002). Although several anecdotal accounts of cyber aggression among intimate partners exist, little is known about how electronic devices may be utilized to stalk and harass intimate partners.

Because there is a dearth of information on cyber aggression among intimate partners, a mixed methods design is used in the present study. Cyber aggression is a relatively new research topic and no quantitative measures exist to assess this phenomenon among intimate partners. Therefore, it is beneficial to understand more about the scope of the problem using qualitative research methods prior to constructing formalized survey instruments to gain broader knowledge about the topic (Creswell and

Plano Clark 2007). Consequently, the purpose of this three-phase, exploratory sequential mixed methods design is to use focus group data to explore participant views on cyber aggression among college intimates in order to develop a quantitative survey instrument based on these analytic themes. Quantitative analyses are then performed to determine the proportion of college students that experience intimate partner cyber aggression and the personal characteristics (e.g., child abuse histories and technology use) that are correlated with cyber aggression. Additionally, the strength of the relationship between cyber aggression and in-person violence among intimate partners and the impact of these negative communications on offline interactions and perceptions of safety are also examined. The specific qualitative and quantitative findings and implications for future research are presented in the subsequent sections.

Qualitative Findings

The results of the qualitative data analysis provide more insight on the forms of cyber aggression that may occur among college students involved in intimate relationships. Five interrelated themes emerge from the focus group discussions, and these thematic categories describe specific aggressive cyber behaviors, potential rationale for using electronic devices to convey harassing messages, and how newer forms of technology may change the manner in which these communications are sent and received. From the perspective of the focus group respondents, there are important similarities and differences between cyber aggression and other offline forms of partner violence.

Two of the themes, *controlling communication* and *unfiltered communication*, highlight the different behaviors that intimates may engage in online. For example, those involved in intimate relationships may text one another harassing messages or post incriminating photos without permission. According to the focus group respondents, individuals who engage in cyber aggression can maintain control and contact with their partners and also monitor their location and activities. Consistent with previous research (Bocij 2004; Chisholm 2006; Ellison 2001; Li 2006), the respondents also mention that they are often less inhibited when sending electronic messages and may type or text things they would not generally say in person. These negative communications may escalate the online aggression or even impact offline interactions.

Although these behaviors are similar to those perpetrated in person, there are unique aspects of aggressive messages conveyed by technological means. By using newer forms of technology, people are constantly accessible even if they are not located in the same geographic area (Burgess and Baker 2002). In modern society, people can be reached anywhere at any time via cell phones, personal computers, and other portable communication devices, and receiving constant, harassing messages may intensify a victim's perceptions of vulnerability (Kowalski and Limber 2007). Furthermore, communications in cyberspace often lack the visual social cues (e.g., facial expressions) that are present in offline interactions (Dehue, Bolman, and Vollink 2008; Denegri-Knott and Taylor 2005; Ybarra and Mitchell 2004b), and those who send hurtful online messages are not immediately confronted with their partner's reaction and the consequences associated with the negative communication (Dehue et al. 2008; Kowalski and Limber 2007; Slonje and Smith 2008). As such, each of these aspects of newer forms

of communication may impact the interpretation and content of the correspondence, potentially leading to increased online or offline harassment.

The focus group respondents also discuss potential motivations for engaging in cyber harassment with an intimate partner in the themes entitled *violent resistance* and *quick and easy violence*. Some respondents describe situations in which intimates ended bad relationships online or preferred to send messages electronically in order to retaliate against a partner from a safe distance. These descriptions are consistent with previous literature that finds that individuals who feel threatened during in-person exchanges may feel empowered to strike back against a violent offender online, finding safety and security behind a computer screen (Hinkuja and Patchin 2008). Others mention that the speed and ease with which aggressive messages are sent may be an attractive feature for those who perpetrate cyber aggression. Not only are intimate partners more accessible, but the medium for sending these communications are readily available as well.

For the final theme, *public becomes private*, the focus group participants discuss how newer forms of technology change how and with whom intimates communicate. Although some may regard technological exchanges as private conversations (e.g., cell phone calls), these messages may also be dispensed very quickly to a wider audience because recipients can forward these electronic communications to multiple technology users. Additionally, the respondents also describe situations in which other people, such as family members and friends, became involved in online arguments that were posted on social networking websites. As such, heated arguments and aggressive exchanges no longer necessarily occur behind closed doors (Straus et al. 1981), but partners may harass and embarrass their partners in the public arena. Although psychological aggression that

is conveyed through electronic communications is similar to other forms of partner violence, these themes also direct attention to the differences between various forms of relationship aggression, such as the ease with which harassing messages can be sent from anywhere at any time, which may change how relationship violence occurs among younger generations due to their high rates of technology use. These qualitative quotes and themes, which explore the different forms of cyber aggression among dating college students, are used to create a quantitative survey instrument. A summary of the quantitative results are presented in the next section.

Quantitative Findings

Consistent with previous adolescent cyberbullying and young adult cyber harassment research (Aricak 2009; Beran and Li 2005; Hinduja and Patchin 2007; Juvonen and Gross 2008; Spitzberg and Hoobler 2002), a large proportion of respondents report experiencing different forms of partner cyber aggression. Seventy-one percent of college students report perpetrating at least one aggressive cyber behavior, such as spreading rumors online, against a partner during the past 12 months. Additionally, 75 percent indicate that they experienced at least 1 form of cyber aggression victimization. For example, respondents frequently report that they engaged in online monitoring activities such as sending persistent, unwanted text or online messages asking a partner his/her location (43 percent) and accessing a partner's online accounts without permission (16 percent). Although these estimates are consistent with other cyber aggression research, it is important to note that these proportions are higher than other offline forms of partner violence (Forke et al. 2008; Katz et al. 2002; Rennison and

Welchans 2000; Tjaden and Thoennes 2000a). Because a high proportion of college students reported cyber aggression, it is important to examine the correlates of online perpetration and victimization.

Correlates of Cyber Aggression Perpetration

There were several correlates of cyber aggression perpetration revealed in the multivariate models which are informed by the routine activities perspective. These models focus on the effects of proximity, exposure, attractiveness, and guardianship on online partner aggression. Living arrangements, athletic activities, and affiliation with fraternities and/or sororities are the indicators of proximity (i.e., physical distance between a target and offender) that are used in the present study. Although living arrangements and location have been found to be associated with other forms of crime victimization (Ehrhardt Mustaine and Tewksbury 1999; Tewksbury and Ehrhardt Mustaine 2003), none of the housing variables in the present study are significant in the perpetration model. Housing location may not be an important factor in cyber aggression research perhaps because the use of technology enables perpetrators to maintain contact with victims without necessarily occupying the same physical space (Hinduja and Patchin 2008; Patchin and Hinduja 2006; Slonje and Smith 2008). Similarly, involvement in fraternity and sororities is also not significantly associated with partner cyber aggression perpetration, which is contrary to some research on sexual assault (Brown et al. 2002; Humprey and Kahn 2000; Lackie and de Man 1997). Consequently, living arrangements and physical separation does not prevent an intimate from perpetrating cyber aggression.

Therefore, the predicative value of these proximity variables may not transfer as well to crime perpetration in cyberspace compared to in-person crime.

Although involvement in certain campus activities such as fraternities and sororities is not correlated with cyber aggression, athletic team affiliation is associated with cyber aggression perpetration which is consistent with previous offline partner violence research (Crosset et al. 1995, 1995; Forbes et al. 2006; Humphrey and Kahn 2000; Koss and Gaines 1993). That is, respondents who participate in more competitive athletic activities are likely to perpetrate more cyber aggression. This is perhaps because many sporting activities (e.g., football and basketball) promote hostile and dominating attitudes towards rivals (Crosset et al. 1995, 1996; Humphrey and Kahn 2000; Koss and Gaines 1993), and the aggression on the field or in the midst of play may transfer to other non-competitive environments including online and in-person interactions with intimates.

Three measures of exposure, which refers to the visibility and accessibility of targets to offenders (Cohen et al. 1981), are included in the cyber aggression perpetration models: amount of time spent online, number of text messages received, and online dating experiences. Among these indicators, both the amount of time spent online and the number of texts received are associated with cyber aggression. Those who spend an increased amount of time online and receive more text messages in an average day are more likely to perpetrate cyber aggression. These findings are consistent with previous research on adolescent cyberbullying (Juvonen and Gross 2008; Smith et al. 2008; Ybarra and Mitchell 2007) and young adult cyber harassment (Spitzberg and Hoobler 2002). Individuals who spend more time engaging in online activities could have more opportunities to send harassing or threatening electronic messages to their partners and

others. Some researchers also propose that frequent Internet users may lash out against others and send harassing online messages as a result of what they term “web-rage,” which refers to a person’s frustration and impatience with web navigation difficulties and delays (Ybarra and Mitchell 2004:333). Dating online, however, is not a significant correlate of cyber aggression perhaps due to the small number of those who met a romantic partner online: only six percent dated online during the past year. Also, it is unknown how much contact information the respondents’ online dating partners shared with them (e.g., online passwords and email addresses) as this may reduce their opportunities to perpetrate cyber aggression.

The relationship between target attractiveness, which refers to the desirability of a target to an offender (Cohen et al. 1981; Cohen and Felson 1979), and cyber aggression perpetration are also examined. Three attractiveness variables are correlated with cyber aggression perpetration among intimate partners: sexual abuse, self-esteem, and alcohol use. Individuals who experienced childhood sexual abuse are less likely to perpetrate cyber aggression against a partner compared to those who have not been sexually victimized. This finding is perhaps attributed to the notion that individuals who have personally experienced violence would not want to inflict pain on others. Previous research has found an association between experiencing childhood sexual abuse and partner violence; however, many of these studies focus on partner victimization (Whitfield et al. 2003; Yoshihama and Horrocks 2010), which could also account for the current results. Other forms of family violence (i.e., physical abuse, neglect, and parental violence) are not significant correlates of cyber aggression perpetration in the present study. Although these family violence variables have been found to be significantly

correlated with partner violence in other studies (Brownridge 2006; Fang and Corso 2007; Rich et al. 2005; Straus 2004; Whitfield et al. 2003), it is possible that these negative family dynamics factors are better predictors of face-to-face contact instead of communications that occur in cyberspace.

Although research on the relationship between self-esteem and offline partner violence has produced inconsistent findings (Bird et al. 1991; Clements et al. 2005; Follingstad et al. 1999; Forbes and Adams-Curtis 2001), college students with lower self-esteem are likely to perpetrate more cyber aggression in the present study. It is possible that individuals who report lower levels of self-esteem may also be jealous and insecure in their romantic relationships and lack the assertiveness and social skills necessary to effectively resolve a conflict with a partner (Lewis et al. 2002). Because they lack these negotiation resources, communicating via technology may provide these individuals an outlet in which they can convey their anger and frustration more easily. These personal and social deficits may contribute to a person's susceptibility of perpetrating aggressive cyber behavior.

Finally, individuals who report becoming drunk at least once during an average week are more likely to perpetrate intimate partner cyber aggression which is consistent with previous research on offline partner violence (Barnett et al. 2005; Follingstad et al. 1999; Mahlstedt and Welsh 2005; Logan et al. 2000; Swan and Snow 2003) and cyber harassment (Ybarra et al. 2007b; Ybarra and Mitchell 2004a). Individuals who use substances such as alcohol in excess may be more likely to be aggressive due to feelings of social disinhibition (Flanzer 2005) which may be enhanced when communicating using electronic means. Those who communicate in cyberspace are generally less

constrained in their online interactions with others (Chisholm 2006; Ellison 2001) and may type or text things that they would not generally say when interacting in person (Bocij 2004; Chisholm 2006; Ellison 2001; Li 2006). Furthermore, they are less aware of the emotional reactions of the victim and the consequences associated with their negative messages (Kowalski and Limber 2007; Slonje and Smith 2008). In combination, using alcohol in excess and having electronic communication devices available may place an individual at higher risk for perpetrating cyber aggression against an intimate partner.

Guardianship, which refers to the ability of a person or object to hinder a legal violation (Cohen et al. 1981; Miethe and Meier 1994), is also a correlate of cyber aggression among college intimates. Individuals who reported that their friends or family members intervened and/or joined in an online argument that they were having with a partner are more likely to perpetrate cyber aggression than those that did not report online guardianship. Previous research on hostile online communications has posited that there are few social controls in cyberspace (Bocij 2004; Graboski and Smith 2001; Patchin and Hinduja 2008), and the results of the present study support these findings: the protection afforded by the online guardians is not adequate to deter the respondent from perpetrating cyber aggression. The actions and responses of the friends, family members, and other people the college students were referencing when responding to these items may have even encouraged subsequent partner cyber aggression. As the focus group respondents indicate in the first phase of this study, online arguments between partners may escalate and last longer when friends and/or family members become involved in these intense online communications.

Finally, the relationship between certain demographic characteristics (i.e., gender, race/ethnicity, age, parental education, and relationship status) and cyber aggression perpetration are examined. Gender and race/ethnicity are significant correlates of online partner aggression. Females are at an increased risk of perpetrating more partner cyber aggression compared to males, a finding that is consistent with some previous offline partner violence research (Fang and Corso 2007; Goldstein et al. 2008; Gover et al. 2008; Luthra and Gidycz 2006; Whitaker et al. 2007; Williams and Frieze 2005). These findings could be attributed to the contention that women may be more willing to admit to using different forms of aggression compared to males as men may be afraid of the negative stigma associated with being aggressive towards a woman (Gover et al. 2008; Gray and Foshee 1997). Although women report victimizing their partners more often, the context of the violence is unknown and it is possible their use of cyber aggression was in retaliation for violence directed at them. Also, as the respondents in the qualitative portion of this study indicate, females may feel more empowered to send aggressive messages via electronic means where they do not have to fear an immediate physical retaliation.

Consistent with previous offline partner violence research (Johnson and Ferraro 2000; Tjaden and Thoennes 2000a; Weston et al. 2005), non-Whites were also more likely to perpetrate partner cyber aggression than the White respondents in this study. These differences may reflect varied experiences of partner violence and/or the propensity for respondents of these different racial and ethnic groups to perceive and report their own behavior as abusive (Frias and Angel 2005). None of the other demographic variables (i.e., age, parental education, and relationship status) are

significant correlates of cyber aggression perpetration. These demographic factors may not be related to cyber aggression perpetration because the sample was largely homogenous on these characteristics and their access to these forms of technology does not vary based on these personal traits.

Correlates of Cyber Aggression Victimization

The multivariate victimization models also focus on the effects of proximity, exposure, attractiveness, and guardianship on cyber aggression experiences. In contrast to the perpetration models, none of the proximity variables (i.e., housing location, engaging in fraternity and sorority activities, and athletic affiliation) are associated with online victimization. Although housing location and participation in certain campus activities such as athletics and Greek organizations may place college students at risk for certain kinds of offline violence such as physical and/or sexual assault by intimates and non-intimates (Brown et al. 2002; Crosset et al. 1995; Forbes et al. 2006; Humphrey and Kahn 2000; Koss and Gaines 1993), these proximity factors are not correlated with online victimization. Much of the research on the association between athletic participation and fraternity involvement focuses on perpetration experiences (Crosset et al. 1996; Forbes et al. 2006; Humphrey and Kahn 2000; Lackie and de Man 1997); consequently, affiliation with these groups may not be related to cyber victimization. It is also possible that housing location and campus activities are not predictors of online forms of partner violence because offenders can remain in constant contact with victims through communication devices no matter where they reside or what activities they participate in.

As such, all college students may be equally at risk for becoming a victim of partner cyber aggression.

Similar to the perpetration models, there are two exposure measures that were significantly correlated with cyber aggression victimization: the amount of time spent online and the number of text received. Accordingly, individuals who routinely spend more time online and receive more text messages during an average day are at an increased risk of experiencing cyber aggression. These findings are consistent with previous research on cyberbullying and cyber harassment (Hinduja and Patchin 2008; Kowalski and Limber 2007; Patchin and Hinduja 2006; Spitzberg and Hoobler 2002). Individuals who spend more time online are at an increased risk of experiencing cyber aggression by an intimate partner due to their heightened exposure and access online. Dating online is also a significant correlate in the second model but drops to nonsignificance in subsequent models, perhaps due to the small percentage of those who report engaging in these activities during the past year.

The relationship between target attractiveness (i.e., family violence, self-esteem, and substance use) and experiencing partner cyber aggression is also examined. Childhood physical abuse is the only attractiveness variable that is a significant correlate of cyber aggression victimization. As such, those who experience more childhood physical abuse are more likely to encounter more cyber aggression which is consistent with previous partner violence research (Field and Caetano 2005; Foshee et al. 2004; Herrenkohl et al. 2004; Manseau et al. 2008; Rich et al. 2005; Straus 2004). It is possible that young adults who experience physical abuse learn that this type of behavior is an acceptable and appropriate way to interact with people they love and are thus likely to be

more accepting of aggression when it occurs. Experiencing sexual abuse and neglect and witnessing interparental violence, however, are not significant correlates of cyber aggression. Previous research on cyber aggression has not examined the impact of family violence on online victimization so the impact of these offline experiences is largely unknown. The lack of significant findings may be attributed to the small percentage of respondents who reported these experiences. As such, it is possible that experiencing physical abuse is a more salient correlate of partner cyber aggression victimization than other types of family violence.

Consistent with some previous research on partner violence (Bird et al. 1991; Follingstad et al. 1999), self-esteem is not a correlate of partner cyber aggression. Studies that do find an association between self-esteem and partner violence, however, generally focus on more severe forms of assault such as forcefully grabbing, slapping, or beating up a partner (Clements et al. 2005; Foshee et al. 2004; Lewis et al. 2002). These forms of violence are much different than the indirect forms of aggression included in the present study and thus may account for this discrepancy. Finally, only one of the substance use variables (i.e., being drunk at least once during an average week) was significantly associated with online partner aggression. This finding is consistent with the offline partner violence literature as alcohol use has been cited as a risk factor for relationship victimization (Abbey et al. 1996; Logan et al. 2000; Swan and Snow 2003). Because targets of online violence are not necessarily in the same location as their intimate partners, the victims' current activities such as drug use may not be as salient of a correlate for online violence as it is with in-person victimization.

Similar to the perpetration models, online guardianship is a significant correlate of partner cyber aggression victimization. College students who report that their friends, family members, or other individuals intervened and/or joined in an online argument that they were having with their partner are more likely to be victimized online compared to those who did not report online guardianship. Although these individuals reported having some form of online guardianship, the presence of relatives or friends monitoring their Internet activities is not enough to deter a partner from sending harassing electronic messages. These findings are generally supportive of previous cyber aggression research that details the lack of effective online guardians (Bocij 2004; Graboski and Smith 2001; Marcum 2008, 2009; Patchin and Hinduja 2008).

Finally, none of the demographic characteristics are significantly associated with cyber aggression victimization. The lack of significant demographic correlates is consistent with some previous research. For example, although researchers have found that females are more likely to be victims of violence, others have not noted gender differences in offline partner violence (Anderson 2002; Capaldi and Owen 2001; Cunradi 2007; Straus and Ramirez 2004) or cyber aggression research (Aricak 2009; Beran and Li 2005; Finn 2004; Hinduja and Patchin 2008; Sheridan and Grant 2007; Slonje and Smith 2008; Williams and Guerra 2007). Certain demographic factors such race and age may also be less relevant correlates of aggression that occurs in an environment where interpersonal communication occurs predominantly through a string of electronic text (Hinduja and Patchin 2008). Few studies have examined the relationship between socioeconomic status and online harassment (see Ybarra and Mitchell 2004b as an exception). Parental education is not associated with cyber aggression in the current

study, perhaps because technological forms of communication are so readily accessible on college campuses. Finally, current relationship status is not a significant correlate of partner cyber aggression which indicates that individuals who are not currently in relationships are at similar risk for partner aggression online compared to those who are dating and cohabiting. This may be due to the accessibility of victims to perpetrators: college students have continuous access to technological forms of communication because they either personally own these devices or can access them at school. Although none of the demographic variables are associated with cyber aggression, it is possible that different forms of offline violence may be correlated with online aggression, which is addressed in the next section.

Relationship between Cyber and Offline Aggression

The relationships between partner cyber aggression and different forms of offline partner violence perpetration (e.g., psychological, physical, and sexual aggression) are also examined in the current study. These results reveal that there is an overlap between online and offline aggression perpetration, which is consistent with the larger body of partner violence literature that finds that individuals who experience one form of violence are at risk for experiencing other types of aggression (Coker et al. 2000; Halpern et al. 2001; Sev're 2002; Thompson et al. 2006). Cyber aggression research has also found a relationship between online and offline aggression (Alexy et al. 2005; Hinduja and Patchin 2008; Mitchell et al. 2007; Raskauskas and Stoltz 2007; Williams and Guerra 2007). Forty-five percent of respondents in the current study report perpetrating both cyber aggression and psychological aggression, and almost 50 percent were victimized by

both forms of violence. Despite the high correlation between these measures, it is important to note that almost 26 percent reported perpetrating cyber aggression only and 11 percent perpetrated psychological aggression only, which is similar to the findings on victimization. The harassing and monitoring behaviors that are captured in the cyber aggression measures are similar to more traditional measures of psychological aggression but there is not a complete overlap.

Physical and sexual aggression and stalking behaviors are also highly correlated with cyber aggression victimization and perpetration even though the percentage of overlap for these measures is not as high as for the psychological aggression items (physical aggression perpetration = 14 percent, victimization = 13 percent; sexual aggression perpetration = 5 percent, victimization = 12 percent; stalking victimization = 22 percent). As such, these findings suggest that cyber aggression is another type of partner assault that is associated with other forms of violence. Also, these cyber aggression items also detect some behaviors that were not previously captured by the psychological, physical, and sexual aggression measures. It is possible that the threatening and harassing behavior escalates online and continues when the partners are in close physical proximity; alternatively, partners may be abusive in-person and extend their control through the use of technology (Beran and Li 2005; Hinduja and Patchin 2008).

Impact of Cyber Aggression on Relationships and Perceptions of Safety

Negative communications in cyberspace may have far reaching effects that not only impact college students' relationships with intimate partners but also their

perceptions of personal safety in general. A sizable proportion of the respondents in the present study report that their negative communications via technology resulted in a face-to-face argument with their partner (26%) and/or report that they had gotten in a verbal or physical fight with a partner because of something they or someone else said online (24%). Some also reported that their negative electronic communications with a partner resulted in forced physical or sexual contact. These quantitative findings complement the qualitative themes regarding the ways in which monitoring behaviors may spark in-person violence and are also consistent with previous cyber aggression research that finds an overlap in online and offline harassment (Alexy et al. 2005; Beran and Li 2005; Dehue et al. 2008; Raskauskas and Stoltz 2007; Williams and Guerra 2007). As such, sending and receiving threatening and/or harassing online messages may have broader implications than just the harm associated with the interpretation of the initial text as they may impact offline interactions.

Although some people may not consider cyber aggression to be harmful because it does not necessarily involve direct physical contact, victims may be negatively impacted by these harassing and monitoring behaviors (Hinduja and Patchin 2007; Juvonen and Gross 2008; Patchin and Hinduja 2006). Few respondents in the present study, however, report that experiencing cyber aggression impacted their perceptions of safety. For example, only five percent indicate that they felt worried or threatened because their partner was harassing them online or through other electronic communications devices. Previous research on cyberbullying among adolescents has also found that incidents of online harassment were not distressing to victims (Beran and Li 2005; Mitchell et al. 2007; Wolak et al. 2007). Sending and/or receiving hostile messages

may be normative behavior in contemporary society as people are less reflective about these communications and tend to attach less significance and weight to electronic correspondence (Beran and Li 2005; Ellison 2001; Patchin and Hinduja 2006).

A high proportion of the college students in this study report experiencing partner aggression, but these individuals may not experience the same detrimental outcomes as those reported by younger adolescents because they have more ways to cope with cyber aggression and more informal and formal sources of support on campus. Additionally, the subjective interpretation of the incidents of cyber aggression may be that these messages are benign, which may be partially attributed to the textual nature of online communications that is generally devoid of the physical and social cues that are present in offline communications which can affect the recipient's impression of the seriousness of the message (Dehue et al. 2008; Deirmenjian 1999; Denegri-Knott and Taylor 2005). Consequently, these negative communications would not impact their sense of safety, even if the intent of the message was more sinister than their interpretation. The following section discusses the implications of the quantitative results for the routine activities framework.

Theoretical Implications

The current study finds mixed support for the applicability of the routine activities framework to intimate partner cyber aggression perpetration and victimization.

According to this theoretical perspective, a person's risk for victimization is contingent upon their lifestyle, which refers to the structured and unstructured activities in which they routinely engage (Hindelang et al. 1978). The main tenet of routine activities theory

is that in order for a crime to occur, three minimal elements of a crime must converge in space and time: a motivated offender, a suitable target, and the absence of a capable guardian (Cohen and Felson 1979; Cohen, Felson, and Land 1980; Felson 2002). Much of the previous criminological research has been devoted to examining features of suitable targets of crime in terms of their proximity, exposure, and attractiveness (Cass 2007; Cohen et al. 1981; Finkelhor and Asdigian 1996; Fisher, Cullen, and Turner 2002; Holt and Bossler 2009; Mannon 1997) and characteristics of effective guardianship (Cass 2007; Ehrhardt Mustaine and Tewksbury 1999; Holt and Bossler 2009). This theory is primarily used to explain crime victimization; however, it has also recently been used in studies on criminal offending (Anderson and Hughes 2009; Osgood et al. 1996).

Although the routine activities framework postulates that individuals who are in closer proximity to motivated offenders such as disgruntled romantic partners are at higher risk for victimization, there is limited support for this notion when examining cyber aggression. None of the proximity measures, which included housing location, athletic participation, and fraternity/sorority membership, are associated with cyber aggression victimization and only athletic participation is correlated with perpetration. Because college students can remain in constant contact with their partners via technology despite physical separation (Hinduja and Patchin 2008; Patchin and Hinduja 2006; Slonje and Smith 2008), these indicators may not be as salient for research on cyber aggression perpetration and victimization. Because “everyone, everywhere and everything are always and eternally just a click away” (Yar 2005:415), there are no geographical barriers to social interaction and thus it is more difficult to meaningfully

depict the convergence in space and time of offenders and targets that is described in routine activities theory.

Exposure, however, is a concept from routine activities theory that may be more easily adapted to cyber environments as online exposure places intimate partners at increased risk for cyber aggression perpetration and victimization. Individuals who spend a lot of time online and continuously communicate via text messages may expose themselves as potential targets due to their increased accessibility and visibility to motivated offenders including those who are current or former intimates. Those who spend more time online may include more personal information in cyberspace, placing them at higher risk for victimization as aggressive partners are able to monitor them more closely. Additionally, newer forms of technology may enhance the tools of an aggressive individual, providing more resources to threaten and harass their intimate partner. Because of their routine activities on campus and in cyberspace, college students may be at high risk for intimate partner cyber aggression.

There is also mixed support for the utility of target attractiveness in the cyber aggression victimization and perpetration models. Similar to research on offline partner violence, having lower self-esteem and becoming drunk during an average week places an individual at higher risk for cyber aggression perpetration and/or victimization (Clements et al. 2005; Follingstad et al. 1999; Mahlstedt and Welsh 2005; Lewis et al. 2002; Luthra and Gidycz 2006; Swan and Snow 2003). Family violence is also associated with cyber aggression: those who are sexually abused in childhood are at lower risk for perpetrating cyber aggression whereas those who experience more physical abuse are likely to experience more forms of cyber aggression. Because current and former intimate

partners may have contact with each other online and offline, it is not surprising that certain attractiveness measures such as substance use and self-esteem are associated with cyber aggression. As such, specific aspects of target attractiveness may transfer to cyberspace.

Effective guardianship also has implications for online and offline partner violence research. According to routine activities theory, the absence of a capable guardian could contribute to the commission of a crime in situations where there is a suitable target and a motivated offender. Although there are fewer formal guardians to monitor online compared to offline activities, the current study finds that informal guardians such as family and friends may affect partner cyber aggression. Individuals who report that these informal guardians intervened or joined in an online argument they were having with their partner are more likely to perpetrate and be victimized by more forms of cyber aggression. It appears that the protection provided by the informal online guardians, however, is not enough to prevent online perpetration or victimization. It is possible that the presence of more formal online guardians, including individuals who are in a policing capacity or new forms of computer software, may reduce the occurrence of partner cyber aggression (Yar 2005). Finally, with the exception of gender and race/ethnicity in the perpetration model, none of the demographic characteristics (e.g., relationship status and parental education) are associated with cyber aggression. These findings are consistent with routine activities theory, which posits that when an individual's lifestyles and characteristics are accounted for, demographic variables will no longer be associated with criminal behaviors (Ehrhardt Mustaine and Tewksbury 1999). Accordingly, other correlates of cyber aggression, such as measures of proximity,

exposure, and attractiveness, may be more important predictors of this form of online partner violence.

Limitations and Strengths

There are some limitations to the present study. For the qualitative data, respondents were asked to refrain from speaking about their own experiences and report only on their perceptions of partner cyber aggression. Many of the focus group respondents were talking about their friends' experiences, and they may not have complete information about the harassing situations they described. Consequently, their subjective interpretation may not accurately reflect the actual events. Although these perceptions provided insight into specific harassing and monitoring behaviors that may be considered abusive by college students, the personal experiences of actual cyber aggression victims and perpetrators are not captured in the present study. Also, only students in the sociology and communication studies departments participated in the focus groups, and it is unknown whether their responses would differ from individuals from other disciplines.

There are also limitations associated with the quantitative data. Because the quantitative data for this study are a convenience sample of college students, these results cannot be generalized to a larger population. Additionally, inferences about causality cannot be made due to the cross-sectional study design. The retrospective nature of some of the variables (e.g., child maltreatment) may make some of the estimates unreliable due to memory loss (Hussey, Chang, and Kotch 2006). Additionally, some respondents may be reluctant to report on sensitive topics such as partner violence victimization and

perpetration due to social desirability bias, which refers to the tendency to represent oneself favorably (Groves et al. 2004). Similarly, the respondents were asked to report on their partners' violence toward them, which may result in over- or under-reporting of some of the behaviors. Finally, refusals to participate were not systematically reported and the sample was limited in terms of racial or ethnic diversity.

Despite these limitations, there are several strengths of this research. First of all, the current study utilizes both qualitative and quantitative data in a mixed methods approach. Combining both sources of data allows a researcher to glean the benefits of each approach and provide unique insight into unexplored areas of research. Second, previous research on online harassment has not examined whether these behaviors occur among those currently or formerly involved in intimate relationships and partner violence research has not incorporated technological forms of cyber aggression. As such, this project integrates and advances both areas of research. Third, new cyber aggression measures were created based off of the focus group conversations which may broaden current conceptualizations of partner violence in contemporary society beyond merely asking respondents whether they have experienced cyber harassment. As such, these measures would be more encompassing to include respondents who do not recognize that they have experienced partner cyber aggression. Finally, this study examines the applicability of the routine activities framework to a new area of online deviance.

Future Research

The findings of this study have several implications for future research. The current study qualitatively explores college students' perceptions of violence; however, it

is important to know more about the context of actual cyber harassment among intimates. Although many of the online harassing and monitoring behaviors are similar to those that occur in the offline world, it is largely unknown whether the subjective impact of partner aggression varies according to the medium by which it is conveyed. It is possible that receiving repeated harassing messages may intensify a victim's feelings of vulnerability (Kowalski and Limber 2007). Alternatively, only receiving harassing texts or emails may lessen a person's sense of fear because there is no imminent danger and electronic communications may even mitigate the threat of physical violence. Future studies should examine cyber harassment among victims and/or perpetrators of this form of violence using diverse samples of respondents. Additionally, the respondents in the present study discuss the overlap between online and offline partner violence which should be explored in greater detail in future studies.

Another direction for future research is to examine additional correlates of partner cyber aggression. Researchers who adopt a routine activities framework to investigate online aggression may benefit by including expanded, complementary measures of online proximity, exposure, and guardianship. Instead of including proximity measures on physical location and activities that are traditionally used to determine where targets and offenders may intersect in offline research, it may be more important to consider where the victims and perpetrators of partner cyber aggression are accessing and using technology. For example, those who access the Internet via personal computers may have different levels of monitoring compared to those who must rely on public locations and devices. Additionally, future research may want to examine whether cyber aggression perpetration and victimization is affected by how technologically savvy the respondent is

as this may impact their online exposure. Although online guardianship is measured by asking respondents whether friends or family members ever intervened in an online argument that they were having with a partner, there may be other relevant sources of guardianship. For example, additional online guardianship questions could ask more specifically about the online intervention, including how many online guardians they have and how they people intervened in the online arguments (e.g., posted online comments or confronted the partner offline). Also, future researchers should ask respondents how much personal information they post online, such as email addresses, phone numbers, or physical locations, as this information could affect their level of guardianship.

Not only is it imperative to understand more about the predictors associated with cyber aggression, but future studies should also examine the consequences associated with this form of partner harassment. Utilizing longitudinal research designs may provide more insight into the negative outcomes associated with partner cyber aggression including depressive symptoms and offline victimization. It is also important to consider more proximate consequences of partner cyber aggression as victims may modify their communication patterns by changing their phone number, email address, or social networking website account information to dissuade subsequent harassment. It is also unknown how harassing and monitoring online behaviors impact a victims' future intimate relationships. Finally, future research should examine partner cyber aggression among other populations such as younger adolescents. Because youth generally begin dating between the ages of 12 and 13 (Wekerle et al. 2009), it is important to assess whether these detrimental online activities are occurring among younger adolescent

populations as well. These proposed directions for future research projects not only complement the current research endeavor but also expand the body of literature on intimate partner cyber aggression.

Conclusion

Overall, the findings from the current study extend and integrate the partner violence and cyber aggression literature. The qualitative results reveal that there are a wide range of harassing and monitoring cyber behaviors that may be considered aggressive by college students and that there are important similarities and differences between online and offline partner violence. According to the quantitative results, a large proportion of the respondents report perpetrating and/or experiencing online aggression and certain personal factors, such as technology use and self-esteem, are correlated with these behaviors. Additionally, partner cyber aggression may impact offline interactions as it is associated with other forms of offline violence including psychological, physical, and sexual aggression.

In general, cyber aggression is a serious social problem that is increasing in prevalence (Ellison 2001; Radosevich 2000), and the findings of this study may have implications for prevention and intervention efforts. Because partner cyber aggression is a common experience among this sample of students, college campuses may want to take measures in providing adequate resources to help victims of this form of partner violence. Additionally, service providers need to have an increased awareness of these harassing and monitoring online behaviors as they may contribute to or compound the negative impact of offline partner violence victimization and/or increase the likelihood of

perpetration. College students may also benefit from public service announcements similar to those promoted in the “That’s Not Cool” campaign, which is targeted at educating young teens about unhealthy cyber communications (Family Violence Prevention Fund 2010). These efforts may assist young adults with adequately identifying partner cyber aggression and provide them with resources to effectively cope if it occurs. Service announcements and educational initiatives may decrease the occurrence of partner cyber aggression and perhaps also reduce the risk of offline partner violence.

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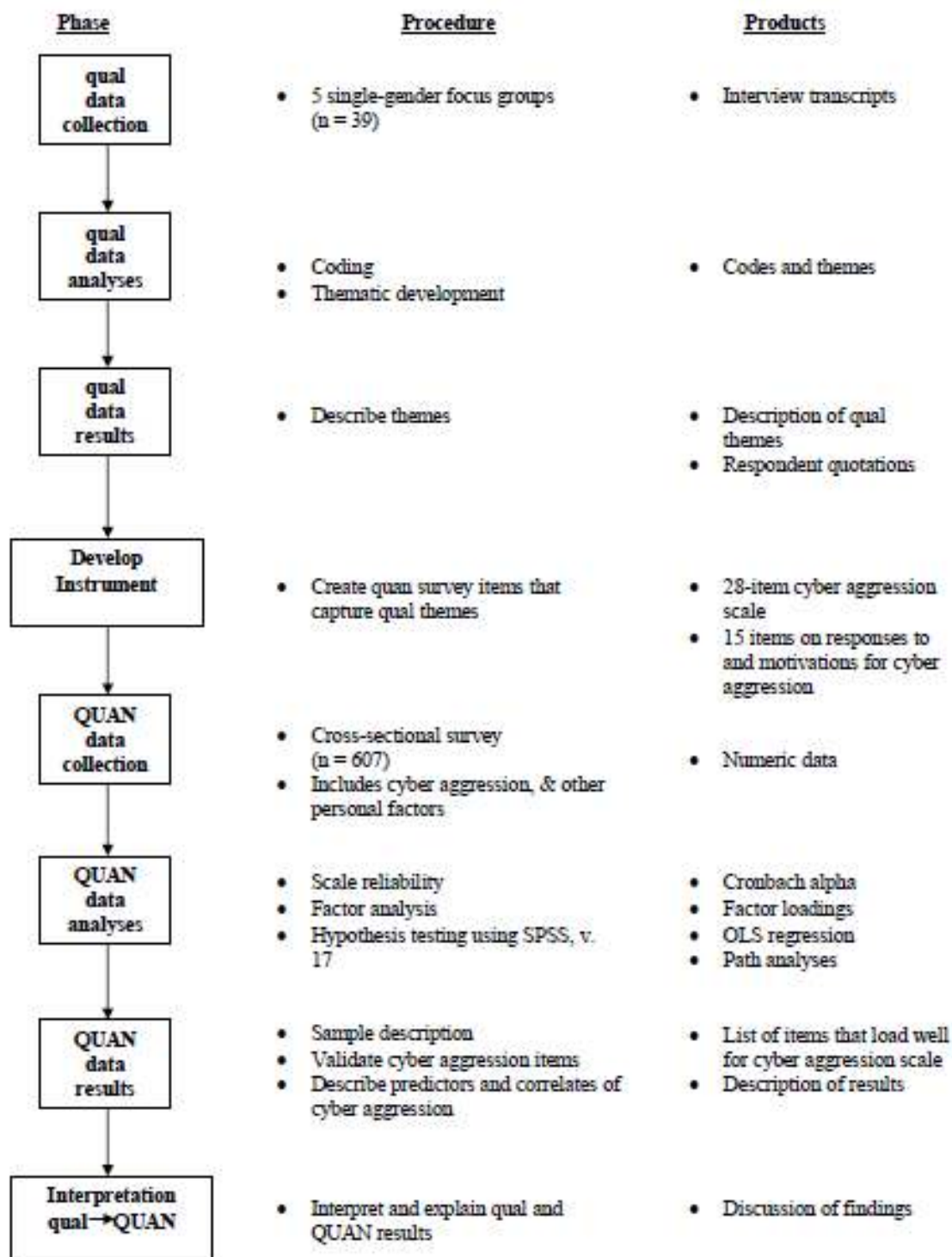
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Appendix A

Figure 1. Visual diagram for cyber aggression mixed methods sequential exploratory design



Appendix B. Qualitative Interview Guide

Introductory Question

1. We are meeting to talk about your views, opinions, and feelings about dating violence. Remember, we ask you to refrain from discussing your own experiences with dating violence or providing identifying information about other specific people or instances. To begin, when I mention “dating violence,” what kinds of things do you think about?

Transition Question

2. Recently, there has been a lot of discussion about the kinds of violence that occur in relationships, including college dating relationships. Are there things that go on between dating college students that you would label violence?

Key Questions

3. One type of dating-related problem that is frequently discussed is psychological aggression. This term is often associated with particular behaviors between partners including insults, threats, controlling, pressuring, yelling, and destroying the property of a partner. Let’s discuss these one at a time: (a) insulting one’s partner, (b) controlling one’s partner, (c) pressuring one’s partner, (d) yelling at one’s partner, (e) destroying a partner’s property.
4. Describe the types of settings in which psychological aggression may occur.
5. What potential role does technology play in dating aggression?
6. How would you explain the finding that boys and girls are about equal in their use of emotional abuse in dating relationships?

Ending Question

7. Given everything we discussed during the past hour or so, what stands out as most important to you? Is there any point you would have liked to comment on further?

Summary

8. A summary of the group’s main points is provided. Is my summary of our discussion accurate or are there important points that I have not mentioned?

Final Question

9. Is there anything we have missed? Are there other questions that need to be discussed in reference to psychological aggression?

Table 1. Measures of Theoretical Concepts

Theoretical Concepts	Measures	Sample Questions
Proximity	<ul style="list-style-type: none"> • Housing location • Athletic participation • Fraternity/Sorority involvement 	To what extent are you affiliated with a campus fraternity or sorority?
Exposure	<ul style="list-style-type: none"> • Time spent online • Number of text messages received • Online dating history • Number of different types of technology used 	On average, how many hours do you spend online per day?
Attractiveness/Vulnerability	<ul style="list-style-type: none"> • Child maltreatment (physical, sexual, neglect) • Witnessing interparental violence • Self-esteem • Substance use (drinking, marijuana, other drugs) 	How often do you get drunk in an average week?
Guardianship	<ul style="list-style-type: none"> • Others joining or intervening in online argument with a partner 	Have your friends or family members ever intervened in an online argument that you had with a partner?
Demographics	<ul style="list-style-type: none"> • Gender • Race • Age • Relationship status • Parental education 	What is the highest level of education your mother/father completed?

Table 2. Sources of Cyber Aggression Measures

Cyber Aggression Item^a	Source^b
Checked cell phone to see who talking to or texting	Self-designed
Sent repeated online messages asking location or activities	Self-designed
Sent persistent, unwanted text or online messages	Langhinrichsen-Rohling et al. 2000; Sheridan & Grant 2007
Spread rumors or posted negative comments online	Hinduja & Patchin 2007; Ybarra et al. 2007a, 2007b
Created a Facebook group that posts negative information	Self-designed
Posted private information online without permission	Juvonen & Gross 2008; Raskauskas & Stoltz 2007; Spitzberg & Hoobler 2002
Accessed online accounts without permission	Juvonen & Gross 2008
Sent threatening or harassing text or online messages	Finn 2004; Spitzberg & Hoobler 2002; Ybarra & Mitchell 2004b
Sent sexually harassing messages online or via a cell phone	Ybarra et al. 2007b
Used GPS technology to track location without permission	Self-designed
Sent unwanted online messages asking location or activities	Self-designed

Note: ^a Each of these items is in reference to a partner.

^b Measures were either self-designed based on focus group responses, modified versions of existing measures, or both.

Table 3. Sample Characteristics (n = 490)

Dichotomous Variables	N	%	Continuous Variables	Mean	S.D.
Gender			Age	21.00	1.70
Female	296	60.4	Parent education	3.30	.93
Male	194	39.6	Athletic participation	1.03	1.14
Race			Time online	3.31	1.48
White	421	85.9	Number of texts received	4.02	1.89
Non-white	69	14.1	Physical abuse	.59	.79
Relationship status			Parental violence	.99	1.58
Casual dating	65	13.3	Self-esteem	3.36	.52
Exclusive dating	221	45.1	Cyber perpetration	1.31	1.27
Cohabiting	30	6.1	Cyber victimization	1.70	1.56
Not in relationship	174	35.5			
Residence					
Campus housing	211	43.1			
Greek housing	33	6.7			
Parents' house	34	6.9			
Off campus housing	212	43.3			
Greek activity participation					
Yes	103	21.1			
No	386	78.9			
Experienced sexual abuse					
Yes	44	9.1			
No	442	90.9			
Experienced neglect					
Yes	44	9.1			
No	442	90.9			
Get drunk during an average week					
Yes	275	56.2			
No	214	43.8			
Marijuana use					
Yes	134	27.4			
No	355	72.6			
Illegal drug use					
Yes	30	6.1			
No	459	93.9			
Dated online past 12 months					
Yes	29	6.1			
No	449	93.9			
Reported online guardianship					
Yes	43	8.9			
No	440	91.1			

Table 4. Frequencies of Individual Partner Cyber Aggression Items for Perpetrators and Victims

Cyber Aggression Behaviors	Perpetration		Victimization	
	N	%	N	%
Checked a partner's cell phone to see who talking to or texting	240	49.9	275	57.3
Sent repeated text or online messages asking about location or activities	207	43.0	253	52.8
Sent persistent, unwanted text or online messages	41	8.5	86	17.9
Spread rumors or posted negative comments online	19	4.0	26	5.4
Created a Facebook or MySpace group that posts negative information	8	1.7	9	1.9
Posted private information, photos, or videos online without permission	10	2.1	13	2.7
Accessed online accounts without permission	77	16.0	66	13.7
Sent threatening or harassing text or online messages	10	2.1	30	6.2
Sent sexually harassing messages online or via a cell phone	7	1.5	17	3.5
Used GPS technology to track location without permission	1	0.2	5	1.0
Sent unwanted text or online messages asking where they are at or what they are doing	44	9.2	75	15.6

Note: The perpetration columns refer to behaviors that the respondents reported doing to a partner within the past 12 months. The victimization columns refer to behaviors that respondents' partners did to them.

Table 5. OLS Multiple Regression Models for Cyber Perpetration (n = 443)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	β	S.E.	β	S.E.	β	S.E.	β	S.E.	β	S.E.
Proximity										
Campus housing ^a	-.07	.13	-.11 *	.13	-.09	.13	-.11 *	.13	-.11	.16
Greek housing ^a	-.03	.31	-.03	.31	-.02	.30	-.05	.30	-.04	.30
Parents' house ^a	.00	.25	.02	.25	.04	.25	.06	.24	.05	.25
Athletic activities	.05	.05	.05	.05	.05	.05	.05	.05	.10 *	.06
Greek activities	.10	.17	.08	.17	.06	.17	.08	.17	.06	.17
Exposure										
Time online			.15 **	.04	.15 **	.04	.14 **	.04	.14 **	.04
Texts received			.15 **	.03	.15 **	.03	.14 **	.03	.12 *	.03
Dating online			.06	.26	.04	.26	.00	.26	.00	.26
Attractiveness										
Physical abuse					.08	.08	.07	.08	.09	.08
Sexual abuse					-.03	.23	-.09	.23	-.10 *	.23
Neglect					.02	.21	.02	.21	.03	.21
Parental violence					.03	.04	.04	.04	.03	.04
Self-esteem					-.11 *	.12	-.08	.12	-.10 *	.12
Drunk					.15 **	.13	.14 *	.13	.18 ***	.13
Marijuana use					.04	.15	.03	.15	.04	.14
Drug use					-.01	.28	-.01	.27	-.01	.27
Guardianship										
Online guardianship							.25 ***	.22	.26 ***	.21
Demographics										
Female									.13 **	.13
White									-.10 *	.17
Age									-.03	.05
Parent education									.03	.06
Casual dating ^b									.01	.19
Exclusive dating ^b									.08	.13
Cohabiting ^b									.09	.27
R²		.01		.07		.12		.17		.21

Note: ^aLiving off campus is the reference category.

^bNot currently in a relationship is the reference category.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Table 6. OLS Multiple Regression Models for Cyber Victimization (n = 443)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	β	S.E.	β	S.E.	β	S.E.	β	S.E.	β	S.E.
Proximity										
Campus housing ^a	-.01	.16	-.05	.16	-.03	.16	-.05	.16	-.07	.19
Greek housing ^a	-.05	.38	-.05	.38	-.05	.36	-.08	.35	-.08	.36
Parents' house ^a	-.07	.31	-.04	.30	-.03	.30	-.02	.29	-.02	.30
Athletic activities	.06	.07	.06	.07	.07	.06	.07	.06	.08	.07
Greek activities	.07	.22	.05	.21	.02	.21	.04	.20	.03	.20
Exposure										
Time online			.15 ***	.05	.15 ***	.05	.14 ***	.05	.14 **	.05
Texts received			.17 ***	.04	.16 ***	.04	.15 **	.04	.14 **	.04
Dating online			.10 *	.31	.05	.31	.01	.30	.02	.31
Attractiveness										
Physical abuse					.18 ***	.10	.16 ***	.09	.16 ***	.10
Sexual abuse					.02	.28	-.04	.27	-.05	.28
Neglect					-.06	.26	-.06	.25	-.06	.25
Parental violence					.03	.05	.03	.05	.03	.05
Self-esteem					-.10 *	.14	-.07	.14	-.06	.14
Drunk					.14 **	.16	.13 **	.15	.14 **	.16
Marijuana use					.09	.18	.07	.17	.07	.17
Drug use					.01	.33	.01	.32	.01	.32
Guardianship										
Online guardianship							.29 ***	.25	.29 ***	.26
Demographics										
Female									.04	.16
White									-.05	.21
Age									-.04	.06
Parent education									.04	.07
Casual dating ^b									-.03	.23
Exclusive dating ^b									-.04	.16
Cohabiting ^b									.02	.32
R²		.01		.08		.17		.24		.25

Note: ^aLiving off campus is the reference category.

^bNot currently in a relationship is the reference category.

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

Table 7. Cyber Aggression Perpetration Compared to Offline Psychological, Physical, and Sexual Aggression.

Cyber Aggression	Column 1 ^a		Column 2 ^b		Column 3 ^c	
	Psychological Aggression		Physical Aggression		Sexual Aggression	
	N	%	N	%	N	%
Neither form of aggression	87	17.8	133	27.1	135	27.6
Cyber aggression only	127	25.9	281	57.3	325	66.3
Other aggression only	55	11.2	9	1.8	7	1.4
Both forms of aggression	221	45.1	67	13.7	23	4.7

Note : ^a Column 1 displays the crosstab results between cyber and psychological aggression.

^b Column 2 displays the crosstab results between cyber and physical aggression.

^c Column 3 displays the crosstab results between cyber and sexual aggression.

Table 8. Cyber Aggression Victimization Compared to Offline Psychological, Physical, and Sexual Aggression and Stalking.

Cyber Aggression	Column 1 ^a Psychological Aggression		Column 2 ^b Physical Aggression		Column 3 ^c Sexual Aggression		Column 4 ^d Stalking	
	N	%	N	%	N	%	N	%
Neither form of aggression	77	15.7	113	23.1	116	23.7	107	21.8
Cyber aggression only	128	26.1	305	62.2	308	62.9	263	53.7
Other aggression only	44	9.0	8	1.6	5	1.0	14	2.9
Both forms of aggression	241	49.2	64	13.1	61	12.4	106	21.6

Note: ^a Column 1 displays the crosstab results between cyber and psychological aggression.

^b Column 2 displays the crosstab results between cyber and physical aggression.

^c Column 3 displays the crosstab results between cyber and sexual aggression.

^d Column 4 displays the crosstab results between cyber aggression and stalking.

Table 9. Correlations between Offline Partner Aggression and Cyber Aggression Perpetration and Victimization.

	Column 1	Column 2
Offline Aggression	Cyber Aggression Perpetration ^b	Cyber Aggression Victimization ^c
Physical & psychological PV ^a	.394***	.436***
Sexual PV ^a	.172***	.373***
Stalking victimization	---	.518***

Note : * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$.

^a PV signifies partner violence.

^b Cyber aggression perpetration is correlated with physical & psychological & sexual perpetration.

^c Cyber aggression victimization is correlated with physical & psychological, sexual, & stalking victimization.

