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Being Pursued Online: Extent and Nature of Cyberstalking Victimization from a Lifestyle/Routine Activities Perspective

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ABSTRACT

The field of stalking has experienced a great deal of growth and refinement over the last decade, but its online counterpart is still little understood. The study of cyberstalking has been challenged by conceptual issues (e.g., defining cyberstalking), a lack of data, and other methodological concerns (e.g., small sample sizes, obtaining sampling frames). The extent of cyberstalking victimization is not currently known, but estimates range from 3.7% to 31% of study participants in the few studies that have attempted to estimate its scope. However, because of definitional inconsistencies and methodological deficiencies in past work, comparisons across studies are difficult. The issue is further complicated by studies that have measured cyberstalking as method of pursuit for spatial stalkers. The current study is an attempt to build upon and overcome the shortcomings of past work in the area. Accordingly, the purpose of this dissertation is threefold: (1) to estimate the extent of cyberstalking among a sample of undergraduate students at a large urban university in the Midwest, using a definition of cyberstalking based on legal statutes and previous research; (2) to utilize the lifestyle/routine activities theory perspective to better understand correlates of victimization; and (3) to determine whether this theoretical framework can be used to explain victimization in cyberspace. Findings indicate that the number of online social networks an individual owns, the number of daily updates to those networks, use of AOL Instant Messenger (AOL IM), allowing strangers to access personal information online (e.g., adding strangers as friends to social networking sites), using online services designed to monitor online network activity (i.e., profile trackers), engaging in online deviance, and low self-control are significant predictors of cyberstalking victimization, suggesting moderate support for lifestyle/routine activities theory in explaining cyberstalking. Possible methods for preventing cyberstalking are discussed.
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DEDICATION

This dissertation is dedicated to the memory of Thomas Drake Coroles, Jr.
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Chapter 1

STATEMENT OF THE PROBLEM

VICTIMIZATION

Despite the fact that every crime has a victim, criminologists have focused almost exclusively on offenders for most of the discipline’s history. It was not until about halfway through the twentieth century that the first generation of victimologists began to devote research attention to victim-centered issues. The scientific study of victims can be traced back to the work of several scholars, including von Hentig (1948), Wolfgang (1958), Schafer (1968), Amir (1971), and Mendelsohn (1976), who each in their own way proposed that victim’s were responsible to some degree for their victimization. In time, the field of victimology expanded in scope to explain not only the victim’s role in their victimization, but other aspects of victimization as well (e.g., correlates, consequences) (see Doerner, 2010; Fisher & Reyns, 2009). Subsequent generations of victimologists have called attention to the importance of opportunity as a precursor to victimization (e.g., Cohen & Felson, 1979; Hindelang, Gottfredson, & Garofalo, 1978; Wilcox, Land, & Hunt, 2003). It is in the work of these scholars and those that followed them that the current study is grounded.

The advent of the National Crime Survey (NCS) in 1972 and other subsequent victim surveys (e.g., British Crime Survey, National Violence Against Women Survey, National Victimization Against College Women Surveys) greatly expanded the research capabilities of victimologists by providing much needed data for testing and refining theories. Since that time, victimologists have explored a variety of types of victimization, ranging from broad categories (i.e., personal, property) to specific types (e.g., rape, larceny, stalking), and considered the victimization experiences of a number of populations (e.g., college students, adolescents, adults).
In this tradition, the focus of this dissertation is the cyberstalking victimization of college students.

**CYBERVICTIMIZATION**

The advent of the Internet and the resulting ability to acquire information and communicate with persons across the globe has fundamentally changed our world. The importance of these technological changes cannot be overstated and have had reverberations in every aspect of our lives from business, to art and culture, to dating and social networking. Along with these advancements in technology have come a new supply of criminal opportunities and a seemingly endless source of victims (Clarke, 2004; Grabosky, 2007; Newman & Clarke, 2003; Reyns, 2010; Wall, 2008). The criminal opportunities produced in cyberspace have opened up a whole new category of crime for criminologists to study—cybercrimes. Like all types of crime, cybercrimes have different opportunity structures that facilitate their occurrence. While it is true that in general all cybercrimes require a network to connect offenders with victims, the tactics, methods, motivations, and consequences of cybercrime victimizations vary across types of cybercrimes. Online networks connect people and organizations all over the world, and it is this connection that has facilitated both entirely new types of crimes (e.g., computer hacking) and created online counterparts to existing crimes (e.g., fraud, stalking, bullying). These online counterparts are essentially a “version 2.0” for many types of traditional crimes. In addition to fraud, stalking, and bullying, other behaviors such as harassment, sex offenses, various types of organized crimes, and even terrorism have adapted to cyberspace. Some of these crimes are essentially extensions of their offline counterparts, while others are similar in some ways, but different in others, as is the case with stalking.
Cybercrimes offer criminologists and victimologists new territory in which to examine the etiology of crime and victimization, as well as fertile ground for testing and refining current criminological and victimological theories. However, despite this, few cybercrimes have been rigorously studied, and still fewer studies have examined cyberstalking. This dissertation is an attempt to address this theoretical and empirical shortfall, and to provide a more inclusive and methodologically solid estimate of the extent and nature of cyberstalking victimization. To this end, the purpose of this dissertation is threefold: (1) to estimate the extent of cyberstalking victimization among a sample of college students from a large urban university in the Midwest; (2) to utilize the lifestyle-exposure and routine activity theory perspectives (LRAT) in order determine the correlates and risk factors for cyberstalking victimization; and (3) to assess whether the lifestyle/routine activities perspective can successfully be adapted to explain victimization in virtual environments. Implications for crime prevention and the future of cyberstalking research will also be discussed.

STALKING AND CYBERSTALKING OF COLLEGE STUDENTS

Stalking and Cyberstalking

According to Fisher and Stewart (2007: 211), being stalked involves being “repeatedly pursued in a manner that causes a reasonable person to fear for his or her safety.” This is a definition that is consistent with anti-stalking statutes and much of the extant research on stalking victimization. There are two key components of this definition – one behavioral and one emotional. The behavioral aspect of stalking is the repeated pursuit behaviors the victim experiences, and the emotional aspect is the harm suffered by the victim in the form of fear. Other conceptions of stalking may not include the victim’s fear, instead using words such as “emotional distress,” “annoyance,” or “harassment” to describe the harm experienced by the
victim as a result of the pursuit behaviors. With respect to anti-stalking laws, the fear criteria are typically met if the victim reasonably feared for their safety or the safety of an immediate family member as a result of the pursuit. Behaviors are usually considered to be repeated if they have occurred on two or more occasions. Other researchers have employed more strict criteria before labeling an incident as stalking. For instance, Sheridan and Grant (2007), consistent with Pathé, Mullen, and Purcell’s (2000) criteria for repetition and persistence, considered stalking/cyberstalking to have occurred only if the pursuit behaviors lasted for four or more weeks and occurred on ten or more occasions. Regardless which definition is used, studies consistently find that stalking is experienced by a significant number of victims (e.g., Baum, Catalano, Rand, & Rose, 2009; Bjerregaard, 2000; Buhi, Clayton, & Surrency, 2009; Cupach & Spitzberg, 2004; Davis & Frieze, 2002; Fisher, Cullen, & Turner, 2000, 2002; Fisher, Daigle, & Cullen, 2010; Jordan, Wilcox, & Pritchard, 2007; Nobles, Fox, Piquero, & Piquero, 2009; Wilcox, Jordan, & Pritchard, 2007).

While “traditional” physically proximal stalking (that is, stalking that occurs in spatial proximity to the victim) has received quite a bit of research attention over the last decade (e.g., Cupach & Spitzberg, 2004; Davis & Frieze, 2002; Fisher, 2001; Fisher et al., 2002; Mustaine & Tewksbury, 1999; Tjaden & Thonnés, 1998), its online counterpart has been comparatively neglected by researchers. Cyberstalking is a crime of relatively recent vintage, with the first recorded incident occurring in the late 1990s¹ (Henson, 2010; McQuade, 2006). It is also a crime that is not well understood. Although the lay person may have some vague conception of what cyberstalking involves, few understand its intricacies. Indeed, there has been a “growing

¹ Estimates vary as to when the first incident and prosecution of cyberstalking occurred (Henson, 2010; McQuade, 2006).
process” among legislators, academics, law enforcement professionals, and others in determining exactly what cyberstalking entails.

Cyberstalking\(^2\) is a crime of repeated pursuit utilizing electronic communications to do any or all of the following behaviors on two or more occasions: contacting someone after being asked to stop; harassing, annoying or tormenting someone; making unwanted sexual advances toward someone; and communicating threats of physical violence against someone (Henson, 2010). It has also been suggested that behaviors such as identity fraud, data theft, hacking, and damage to computer equipment are forms of cyberstalking (e.g., Bocij, 2003). Each of these online behaviors has been facilitated by technological innovations that freed potential stalkers of the spatial restrictions of their repeated pursuit behaviors.

As noted, in comparison to the methodologically rigorous work with stalking, relatively few studies have focused exclusively upon cyberstalking. Most of these have been methodologically weak in some way, relying on convenience samples, small sample sizes, and ambiguous measures of cyberstalking victimization (Yar, 2006). This may account for why estimates of the extent of victimization have been so varied. Further, few of these early studies of cyberstalking victimization have been guided by theory. To date, there has been only one study to utilize the lifestyle/routine activity approach to identify risk factors for victimization, but this study’s dependent variable was operationalized using only one of the component behaviors

\(^2\)Just as there is no consistent definition of cyberstalking or stalking in the extant literature, there is also no consensus as to which terms are used when discussing these types of victimization. Stalking is often simply called stalking, unless it is being discussed in the same realm as cyberstalking, in which case it is often referred to as proximal, offline, spatial, traditional, terrestrial, or conventional stalking. For the sake of consistency, stalking will either be referred to as simply *stalking* or *physically proximal stalking*. Similarly, cyberstalking is often called *online stalking*. Further, some authors separate and/or hyphenate cyberstalking (i.e., cyber-stalking, cyber stalking). Again, for the sake of consistency, *cyberstalking* will be the only term assigned to such behavior throughout this dissertation.
of cyberstalking (i.e., online harassment) (Holt & Bossler, 2009). The paucity of work focused on cybercrimes, and cyberstalking specifically, has made it difficult to devise prevention strategies. This is not for lack of crime prevention or victimological theory. Environmental criminology in particular has a wealth of theories (e.g., crime pattern theory, rational choice theory, routine activities theory) that have the potential of expanding our understanding of cybercrimes. A greater knowledge of different types of cybercrime, including cyberstalking, and their respective opportunity structures will aid researchers and practitioners in developing crime prevention strategies.

**Defining Cyberstalking**

Part of the challenge in studying cyberstalking has been in determining exactly what the phenomenon entails (e.g., Bocij, 2006; Bocij & McFarlane, 2002b). There is no universally accepted definition of cyberstalking; however, there is a consensus that stalkers carry out pursuit of their victims by means of some type of telecommunications device or via the Internet (e.g., through emails, text messages, faxes) (Ashcroft, 2001; Bocij & McFarlane, 2002a, 2002b; D’Ovidio & Doyle, 2003; Levrant Miceli, Santana, & Fisher, 2001; Maxwell, 2001; Reno, 1999). There is also little agreement regarding whether cyberstalking is different than physically proximal stalking, and this distinction becomes even more difficult to make when a stalker pursues his victim both online in cyberspace and in physical proximity (Bocij, 2006; Bocij & McFarlane, 2003b; Henson, 2010; Parsons-Pollard & Moriarty, 2008; Pittaro, 2008; Sheridan & Grant, 2007).

Legal definitions of stalking and cyberstalking vary by state and country (Tjaden, 2009). California, for instance, requires three criteria for stalking (that also cover cyberstalking): (1) the victim can prove a pattern of conduct on the part of the stalker that was intended to alarm or
harass; (2) as a result of this pursuit, the victim reasonably feared for their safety or the safety of their immediate family; and (3) the stalker either made a credible threat against the victim or violated a restraining order. California law also stipulates that the victim demand the stalker cease their pursuit of the victim. Massachusetts law has a less stringent definition of stalking, defining it as (1) a pattern of conduct which the victim finds severely annoying or alarming that (2) also includes a threat to bodily injury or intent to instill fear of death. In general, state laws emphasize the repeated nature of communication directed at the victim, some consequence of the pursuit (e.g., annoyance, fear, distress), and a threat of physical harm. There is no federal cyberstalking law per se, but certain federal laws such as 18 U.S.C. 875(c) (which prohibits threatening communication), 47 U.S.C. 223 (which proscribes the use of telecommunication devices to harass, threaten, annoy, or abuse someone anonymously), and the amended Violence Against Women Act (1994, 2005) all prohibit cyberstalking at the federal level. Federal-level legislation covering cyberstalking also exists in other countries. Australia, for instance, defines unlawful stalking conduct as (1) intentionally directed at a person, (2) occurring on more than one occasion, and (3) consisting of one or more of a number of specific acts (including contacting a person by email, phone, fax, mail, or though any other technology).

Based on state and federal laws prohibiting stalking and cyberstalking, as well as definitions of cyberstalking used in prior research, the behaviors comprising cyberstalking victimization were identified. The four components of cyberstalking victimization include: (1) repeatedly being contacted after asking the other person to stop; (2) receiving communications that are perceived by the victim to be harassing, annoying, or tormenting; (3) receiving unwanted sexual advances; and (4) receiving threats of physical violence (Bocij, 2003, 2006; Bocij & McFarlane, 2002b; Finn, 2004; Henson, 2010; Parsons-Pollard & Moriarty, 2008). It has also
been suggested that having one’s identity stolen\(^3\) and/or assumed with intent to do damage may be a form of cyberstalking victimization. Cyberstalking, therefore, can involve multiple pursuit behaviors that separately or in conjunction constitute cyberstalking victimization. This includes receiving any one of the four specific forms of online communication by another internet user or users on two or more occasions. Not only must these attempts at communication be repeated, but they must serve no legitimate purpose (e.g., the purpose it to harass or annoy the victim).

The components of this definition were identified over the years as legislators, researchers, and law enforcement professionals grappled with defining the techniques and behaviors that comprise this new type of crime. Despite these advances, there is no universally accepted definition of cyberstalking in the research community. The above definition is used in this study to define cyberstalking, and is based on anti-stalking statutes and previous research. This definition is consistent with the definition developed by Bocij and McFarlane (2002b: 12), who defined cyberstalking as, “A group of behaviours in which an individual, group of individuals or organization, uses information and communications technology to harass one or more individuals. Such behaviours may include, but are not limited to, the transmission of threats and false accusations, identity theft, data theft, damage to data or equipment, computer monitoring, the solicitation of minors for sexual purposes and confrontation.”

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\(^3\) The inclusion of identity theft on this list is arguable. Cyberstalkers have been known to hack their victim’s email clients or social networks, pose as their victim, and otherwise try to bring harm on the victim by assuming their identity. These behaviors, however, do not necessarily need to be repeated two or more times before the incident can be labeled as cyberstalking. Further, the label *identity theft* while technically not inaccurate in this context is somewhat misleading, as it carries certain connotations (e.g., identity theft for monetary gain). For this reason, perhaps a more appropriate label may be *identity fraud* (Taylor, Fritsch, Liederbach & Holt, 2010), which can encompass a host of criminal behaviors that can occur online involving the theft of personal information.
Fear of Victimization

Noteworthy is that absent from either of these definitions is any mention of the fear felt by the victim. Is victim fear a prerequisite for an incident to be labeled cyberstalking? This is a further point of conceptual uncertainty among cyberstalking scholars. Indeed, many state laws governing cyberstalking do not make mention of fear. State laws vary in their cyberstalking legislation, with some states having specific cyberstalking statutes, others relying on stalking statutes, and others prosecuting cyberstalking with general harassment statutes. As Appendix 1 illustrates, most states make some mention of fear in their harassment or stalking statutes. However, a majority do not require the victim to feel fear for stalking or cyberstalking to have legally occurred.

Currently, researchers, legislators, and law enforcement professionals know too little about the phenomenon of cyberstalking or feelings of fear generated by online encounters to make a determination that cyberstalking requires an emotional response from the victim (e.g., fear). Consider the following example: an individual receives repeated threats of violence, harassing emails, and their name is used in ways that are meant to tarnish it, but the victim never experiences fear (perhaps only feelings of annoyance and/or inconvenience). In this scenario, it could be convincingly argued that the individual was being cyberstalked (in many states this would be the case). Clearly this individual was being pursued online—their stalker was trying to bring harm to them, and assert control over them, but for whatever reasons, they weren’t afraid, perhaps because they possess a high level of computer competence and feel in control (Spitzberg, 2006). This raises the question of whether a virtual environment is qualitatively different than a physical or “real life” environment. This question has not been addressed.

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4 Bocij and McFarlane (2002b) define harassment as emotional distress.
empirically or otherwise by fear of crime or cyberstalking researchers. However, one recent study by Higgins, Ricketts, and Vegh (2008) examined fear of online victimization among Facebook users and concluded that fear was a function of perceived risk, which was in turn associated with low self-control of the Internet user. This single study, however does not address the degree to which either fear or perceived risk are generated in online environments. For these reasons, fear is not treated as a criterion of cyberstalking victimization in the current study. This is not to say that cyberstalking does not illicit fear in victims; to the contrary, Reno (1999) suggests that cyberstalking can be just as frightening as being physically watched and followed. When the cyberstalking victimization field develops further, and more is known about fear in online environments, this definition may need to be revisited.

**Distinction between Stalking and Cyberstalking**

Another point of disagreement among researchers is whether cyberstalking is essentially the same as or an extension of physically proximal stalking, save differences in tactics or techniques (Bocij, 2006; Bocij & McFarlane, 2003b; Henson, 2010). This is one of Bocij and McFarlane’s (2003b) *Seven Fallacies about Cyberstalking*. These authors point out that cyberstalking must be different than traditional forms of stalking primarily for three reasons. First, it is different because governments, the media, and the press recognize it as distinct. For example, Attorney General Reno’s report recognizes it as legally distinct, and some states have cyberstalking statutes apart from their stalking statutes. Second, some stalkers may never engage in pursuit behaviors outside of cyberspace, therefore it cannot be merely an extension of physically proximal stalking if none has occurred. Third, new technologies will always lead to new types of crime (e.g., before computers, there were no computer viruses) (Bocij & McFarlane, 2003b). The authors’ second point is perhaps the most compelling. Clearly, if no
physically proximal stalking occurs, but online stalking does, cyberstalking must be a separate phenomenon—one characterized by repeated online or electronic pursuit behaviors. Stalking includes a physical proximity component, which distinguishes it from cyberstalking. However, this still leaves the question of perpetrators who utilize a variety of techniques to pursue their victims, including both physically-based pursuit and online or electronic pursuit. Bocij (2003) suggests that the two types of stalking are qualitatively different. For example, according to Bocij, cyberstalking victims are less likely to know their stalkers than victims of physically proximal stalking. Similarly, cyberstalking purportedly takes place over a shorter period of time than stalking (Bocij, 2003).

Much like the issue of fear and cyberstalking, the crossover between physically proximal and online stalking has not been adequately addressed empirically. There has not been enough research for distinctions between stalking and cyberstalking to be made, although Sheridan and Grant (2007) argue that stalking and cyberstalking are not fundamentally different. Based on their analysis, these authors reported that along many dimensions, stalking and cyberstalking incidents were comparable in many ways in terms of: the stalking process, the effect on victims, effects on third parties, victim responses, and stalker gender, among others. The position taken here is that at the very least cyberstalking may be distinctly different than physically proximal stalking, and this study is focused solely on electronic and online experiences which comprise cyberstalking victimization.

The Social Construction of Cyberstalking as a Problem

Among the general population, cyberstalking has been recognized as an important issue. In 1999, Attorney General Janet Reno released a report on cyberstalking that represents among the most comprehensive treatments of the subject to date. This report was the result of a concern
on the part of Vice President Al Gore that cyberstalking was an emerging problem that needed to be addressed. In fact, the Vice President remarked that, “Make no mistake: this kind of harassment can be as frightening and as real as being followed and watched in your neighborhood or in your home,” (Reno, 1999: 1). Accordingly, the Vice President asked the Attorney General to explore the extent of the problem, current practices for addressing the problem, the state of legislation related to cyberstalking, and to provide policy recommendations for meeting the new challenges that cyberstalking has created. Ten years after that report was released, it is striking how little progress has been made toward understanding cyberstalking. Attorney General Reno recognized that the extent of cyberstalking is unknown, and that it is difficult to quantify, but argued that all indications are that it is a growing problem. As an exercise in estimating the extent of cyberstalking, Reno pointed out that (at the time) there were 80 million adults and 10 million children in the United States with access to the Internet. Based on the finding in the National Violence Against Women Survey (NVAWS) that one percent of women and 0.4 percent of men had been stalked in the previous 12 months, Reno implied that there could be tens or hundreds of thousands of cyberstalking victims every year\textsuperscript{5}. Although no national statistics from law enforcement on cyberstalking were available at the time Reno’s report was written, she did cite anecdotal evidence from law enforcement across the country suggesting that the number of cases of cyberstalking was growing to document the existence of the problem. Since that time, it is evident that based on small scale studies of cyberstalking and a few national estimates (which will be reviewed in the following section), as well as reports to law enforcement, and the recognition of this type of victimization among state and federal legislators that cyberstalking is a reality that many have faced.

\textsuperscript{5} Reno acknowledged that these figures are purely speculative, but they do give some indication of the possible widespread nature of the problem as well as its potential magnitude.
While acknowledging that online harassment and related behaviors are undoubtedly distressing for victims, Ellison (1999) contends that much of the discourse on cyberstalking and online harassment has been fueled by the media, and may amount to nothing more than a moral panic (also Ellison & Akdeniz, 1998). Wykes (2007) argues that stalking and cyberstalking are essentially culturally constructed rehashes of the already existing crime of harassment, brought into the spotlight by celebrity victims of physically proximal stalking. Koch (n.d.) is quite blunt in his criticism of the cyberstalking “hysteria,” going so far as to say, “There are problems on the Internet—some real, others minuscule, many imaginary. There are criminal financial dealings on the Net, child porn and child molesters, dope dealers and terrorists. It's like life—real and, at times, grim, ugly and desperate. But when it comes to cyberstalking, there's little justification for the hysteria.” As evidence that cyberstalking is merely a media hype, Koch suggests that the Fisher et al. (2002) study was the sole justification in the Reno (1999) report that cyberstalking exists. This is simply not the case, as the Reno report also references the NVAWS\(^6\), specific cases of cyberstalking victimization, reports of incidents from law enforcement throughout the nation, and information from internet service providers regarding complaints of such behaviors.

This suggestion that cyberstalking is only a problem for a small portion of internet users or doesn’t exist in the first place is a minority opinion among commentators and researchers on the subject. Bocij and McFarlane (2002a), Jaishankar and Sankary (2005), and Pittaro (2008) rebuff detractors by arguing that current estimates indicate that thousands of cyberstalking incidents occur each year, and that victims suffer significant harm (e.g., psychological, financial) as a result of their victimization. Bocij and McFarlane (2003a) have suggested that the extent of

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\(^6\) The NVAWS did not measure cyberstalking; however, Reno used numbers from the NVAWS to estimate the potential for cyberstalking in the United States.
the problem may have been overestimated in the media and various cyberstalking resource websites (e.g., CyberAngels, WHOA), but that at the very least there are likely 30,000 incidents each year in the United States alone\textsuperscript{7}. Regardless, subsequent studies (Alexy, Burgess, Baker, & Smoyak, 2005; Baum et al., 2009; Bocij, 2003; D'Ovidio & Doyle, 2003; Finn, 2004; Fisher et al., 2002; Holt & Boscull, 2009; Jerin & Dolinsky, 2001; Sheridan & Grant, 2007; Spitzberg & Hoobler, 2002) have revealed that cyberstalking happens, it is potentially widespread, it is serious, and it has real consequences for victims. The extent of cyberstalking victimization will be discussed following a review of the methodological challenges that affect cyberstalking estimates.

**EXTENT OF CYBERSTALKING VICTIMIZATION**

Before discussing the estimates of cyberstalking victimization from past studies, it should first be recognized that such estimates were at times generated under less than ideal methodological circumstances, and hence must be approached with caution. Nevertheless, these existing estimates provide some idea of the extent of cyberstalking victimization. Methodological issues in estimating cyberstalking victimization will be discussed below followed by estimates of stalking and cyberstalking victimization.

**Methodological Issues in Estimating Cyberstalking Victimization**

The lack of methodological consistency across studies of cyberstalking (e.g., methodologies, definition of cyberstalking used) makes comparisons difficult. Issues such as a

\textsuperscript{7} While Bocij and McFarlane (2003a) argue that there are at least 30,000 incidents each year in the United States based on information available from victim resource websites such as CyberAngels and Working to Halt Online Abuse (WHOA), the authors do not acknowledge the possibility that many of the incidents may be repeat victimizations of the same individuals. If this is the case, then reporting the number of incidents may be somewhat misleading. Unfortunately, the statistics that are available from these resources do not address the repeat nature of this crime, nor do they disclose whether they have taken repeat victimization into account when compiling their statistics.
lack of statistical analyses, a reliance on convenience samples, small sample sizes, and measuring cyberstalking through self-identification are among the limitations of previous work. Therefore, one of the primary goals of the current study is to improve upon many of the methodological deficiencies present in previous works examining cyberstalking victimization. A few methodological patterns across studies of cyberstalking warrant note.

**Sampling Design Issues**

With the exception of the Baum et al. (2009) study conducted by the Bureau of Justice Statistics as a supplement to the National Crime Victimization Survey, and the Fisher et al. (2002) study, all of the previous studies of cyberstalking victimization have relied on nonprobability samples. This is a potentially serious problem because nonprobability samples cannot be considered representative of any larger unobserved populations (an assumption that can be made of probability samples), and therefore, the generalizability of the results are compromised as a result of sampling bias. Eight of ten prior studies that estimated the extent of cyberstalking victimization potentially suffer from sampling bias, and the estimates of cyberstalking from these studies must be considered in light of this limitation.

Sample size is another methodological issue of concern with respect to previous studies of cyberstalking victimization. Sample sizes from past works range from 154 to 4,446. Small sample sizes can limit the generalizability of results because there is less of a chance that the sample is representative of the larger population from which it was drawn. Usually, larger sample sizes are considered to be more representative of the population and yield more precise estimates of observations in the population.
Study Populations

The populations under study in previous works are quite diverse, ranging from female customers of online dating websites to the entire adult population of the United States. This makes comparisons across studies difficult, as theory would suggest different groups have differing levels of risk. However, half of the studies (five out of ten) focus on the cyberstalking victimization of college students, which makes both theoretical and practical sense, and allows for some comparison possibilities. The five college student-centered studies of cyberstalking victimization are Fisher et al. (2002), Spitzberg and Hoobler (2002), Finn (2004), Alexy et al. (2005), and Holt and Bossler (2009).

Defining and Operationalizing Cyberstalking as a Dependent Variable

While all of the studies of relevance to the current discussion are in some way measuring cyberstalking victimization (or some aspect of cyberstalking), none do so in precisely the same way (i.e., victimization is not measured in the same way across studies). For instance, Spitzberg and Hoobler (2002) have 24 questionnaire items to measure various elements of cyberstalking, while Baum et al. (2009) have a single-item measure of behavior which caused the survey respondent to feel fear. The studies of cyberstalking that have been undertaken to date have mostly examined either the repeated contact or harassment elements of cyberstalking. Few have taken a multidimensional (i.e., use of multi-item measures of cyberstalking) approach to the task. Nearly all have neglected the identity fraud, threats of violence, and sexual harassment aspects of the crime, with the exception of Bocij (2003).

Bocij’s (2003) study offered a multi-faceted approach (i.e., considering a various dimensions of cyberstalking), but each of the components of cyberstalking was estimated

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8 Fisher et al. (2002) focused exclusively on college women.
separately. Identity theft was measured, repeated harassment was measured, and so on, but a measure capturing all of these was not created. Spitzberg and Hoobler’s (2002) study may come the closest to measuring all of the various behaviors that comprise cyberstalking, but this study suffers from a different methodological issue—namely a problematic definition of cyberstalking. Stalking and cyberstalking are *by definition* repeat victimizations (see Davis & Frieze, 2002; Fisher, 2001; Fisher et al., 2002). Spitzberg and Hoobler did not take this into account when they constructed their measures of cyberstalking victimization, or did so only implicitly. The authors report the percentage of their sample that had experienced a host of harassment behaviors *at least once*. To illustrate, one of their survey questions reads, “Has anyone ever undesirably and obsessively communicated with or pursued you through your computer or other electronic means by sending threatening written messages,” (Spitzberg & Hoobler, 2002: 83). Based on this question and 23 other questions asking about online behaviors and experiences, the authors constructed three composite measures of cyberstalking over the course of three pilot studies. As previously stated, this study suffers from a major definitional shortcoming.

The issue of how cyberstalking is defined and operationalized is an important one because it most certainly affects measurement and estimates of the extent of victimization (as has also been shown to be the case with traditional stalking; see Fisher, 2001). This is a question of validity, specifically face validity. Since repeated pursuit behaviors (i.e., behaviors that happened on two or more occasions) were not measured in Spitzberg and Hoobler’s (2002) study, and the authors did not report to what extent respondents experienced more than one type of cyberstalking behavior, it is unclear whether this study actually measured cyberstalking.

Finn (2004) addressed the definitional limitation of the Spitzberg and Hoobler (2002) study by asking respondents if harassment behaviors were repeated (i.e., 1-2 times, 3-5 times, 5
or more times), rather than asking if respondents had ever experienced certain behaviors (e.g., one time only). However, Finn suggests that his study does not actually measure cyberstalking because his survey questionnaire did not ask whether respondents were fearful as a result of their experiences. He further notes the difficulty in comparing cyberstalking estimates across studies because of differences in the definition used across studies and a lack of conceptual clarity (Finn, 2004). However, Finn’s study warrants discussion for two reasons—the first being conceptual and the second being definitional. First, according to many state statutes (see Appendix 1) Finn’s dependent variable (online harassment) actually was cyberstalking. Second, according to the definition of cyberstalking adopted for the present study, the behaviors he measured were behaviors that can be considered cyberstalking. Finn’s (2004) study will be discussed further below.

Research Design

Finally, every estimate of cyberstalking victimization to date has been based on a study in which a cross-sectional design was used. In general, longitudinal designs are superior to cross-sectional designs in establishing causal relationships between independent and dependent variables, but it is often difficult to obtain longitudinal data, especially longitudinal data on stalking. To date, no stalking or cyberstalking estimate has been generated utilizing a longitudinal design.

Estimates of Stalking Victimization

A growing body of stalking victimization research indicates that a large proportion of the general public has experienced stalking. Estimates on the extent of stalking victimization primarily come from three national-level studies in the United States, as well as several smaller-scale studies. The most recent of the national-level studies was conducted in 2006 as a Stalking
Victimization Supplement (SVS) to the National Crime Victimization Survey (NCVS).

According to the BJS report, 3.4 million individuals over 18 years old in the United States were reportedly victims of stalking in the previous 12 months (Baum et al., 2009). In comparison, the National Violence Against Women Survey (NVAWS), a second nationally representative survey of stalking in the United States, estimates that there were 1.4 million victims of stalking in the year preceding the survey (Tjaden & Thoennes, 1998). It is not clear what this apparent growth in stalking victimization can be attributed to, but one plausible explanation is the proliferation of interpersonal communication technologies. These technologies have the potential to facilitate a number of types of electronic pursuit (i.e., cyberstalking). In other words, while speculative, one of the reasons for this growth may be an increase in cyberstalking victimization. The third nationally representative survey of stalking victimization focused exclusively on college women. According to Fisher et al. (2002), 13.1% of the sample of female college students had been stalked at least once since the beginning of the academic year. A number of studies have confirmed the finding from these three national studies that a substantial portion of the population experiences physically proximal stalking (see Spitzberg & Cupach, 2007; Tjaden, 2009) but the extent of cyberstalking is less understood.

Estimates of Cyberstalking Victimization

The study of cyberstalking victimization is truly in its infancy—to date very few empirical examinations (e.g., Alexy et al., 2005; Bocij, 2003; Jerin & Dolinsky, 2001; Sheridan & Grant, 2007; Spitzberg & Hoobler, 2002) of this type of victimization have been undertaken. Aside from this limited body cyberstalking studies, additional knowledge about cyberstalking victimization comes from larger studies of traditional stalking that have also measured online pursuit (e.g., Baum et al., 2009; Fisher et al., 2000, 2002). These works are methodologically
sound; however, cyberstalking was not the primary focus of the respective studies, so their usefulness in explaining what factors put individuals at risk is limited. Other informative works have stopped short of explicitly discussing cyberstalking, instead focusing on its component behaviors such as online harassment only (Finkelhor, Mitchell, & Wolak, 2000; Finn, 2004; Holt & Bossler, 2009).

A review of the literature yielded only ten studies that have attempted to estimate the extent of cyberstalking victimization. Table 1.1 briefly summarizes these studies as well as those studies of physically proximal stalking which also measured cyberstalking (and have attempted to estimate its scope). Estimates of the extent of cyberstalking victimization vary widely across studies. Indeed, even amongst those studies examining similar populations (i.e., college students), the victimization rate ranges between 3.7% and 31%.

Bocij’s (2003) research was among the first attempts to estimate the prevalence of cyberstalking. This exploratory study was based on analysis of responses from 169 individuals who participated in a web-based survey. The sample for this study was generated through snowball sampling techniques, which poses serious external validity concerns. Despite these methodological limitations, the study gives us some indication of the scope of cyberstalking. The author reported that 21.9% of respondents could be classified as victims of cyberstalking when a conservative estimate9 was employed (otherwise, the more liberal estimate10 indicated that over 82% of respondents had been victimized).

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9 This estimate required that two or more incidents had taken place, that all incidents be perpetrated by the same person, that the incident caused the victim distress, and that the stalking behaviors be carried out through internet communications technology.

10 This estimate is based on respondents indicating that they had experienced at least one of any number of possible online behaviors (e.g., abusive emails, threats). 17.9% of respondents indicated they had not experienced any such behaviors.
The possible limitations of Spitzberg and Hoobler’s (2002) study have already been discussed, but if we accept that the authors did indeed measure cyberstalking victimization, then their results indicate that up to 31% of the sample had been cyberstalked at some point in their lives. Like the Bocij (2003) study, the Spitzberg and Hoobler (2002) study relies on a small convenience sample (235 undergraduate college students), and has questionable representativeness (both in terms of college students and college students at the particular institution from which the sample was drawn). The authors acknowledge the possible shortcomings of their methodological approach by stipulating that the study was exploratory.

Finn (2004) examined a convenience sample comprised on 339 undergraduate students from the University of New Hampshire and utilized a survey to collect the data related to online harassment. Finn reports that approximately 10% of survey respondents had experienced some form of online harassment (e.g., getting repeated messages from a significant other that threatened, insulted, or harassed) committed by someone they knew (e.g., acquaintance, friend, spouse). Additionally, approximately 15% experienced these same sorts of behaviors committed by someone they did not know. The results further indicate that 3.5% of respondents had received repeated email messages from someone after asking them to stop, and 3% received repeated instant messenger (IM) messages after asking the offender to stop.

Jerin and Dolinsky (2001) examined the cybervictimization of women who used internet dating services. Based on an online survey of randomly selected women\textsuperscript{11} who used three particular online dating services, the authors were able to identify certain tactics that cyberstalkers employed in the online victimization of women. Jerin and Dolinsky do not

\textsuperscript{11} The analysis was based on 134 cases and the response rate for the survey was 10.75%.
<table>
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<th>Authors (year published)</th>
<th>Sample Design</th>
<th>Dependent Variable</th>
<th>Operationalization of Dependent Variable</th>
<th>Estimate of Incidence or Prevalence of CSV</th>
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<td>Jerin and Dolinsky (2001)</td>
<td>Purposive sample of 154 female online-dating website users</td>
<td>Cyberstalking</td>
<td>7 items – e.g., threatening email, electronic identity theft</td>
<td>26.8%</td>
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<td>Fisher et al. (2002)</td>
<td>Nationally representative sample of 4,446 college women in the United States</td>
<td>Cyberstalking (via email)</td>
<td>Repeatedly emailed in a way that seemed obsessive or resulted in feelings of fear</td>
<td>24.7% (of those who were stalked)</td>
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<td>Spitzberg and Hoobler (2002)</td>
<td>Convenience sample of 235 undergraduate college students from a large southwestern public university</td>
<td>Cyber obsessive relational intrusion</td>
<td>Being harassed or obsessively pursued through the computer or other electronic means – 24 item scale of cyberstalking behaviors</td>
<td>&lt; 31%</td>
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<td>Bocij (2003)</td>
<td>169 survey respondents recruiting through snowball sampling online</td>
<td>Behaviors associated with cyberstalking (e.g., threatening or abusive emails)</td>
<td>11 measures of online harassment through different tactics (e.g., threatening emails, computer viruses)</td>
<td>21.9% - 82%</td>
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<td>D’Ovidio and Doyle (2003)</td>
<td>NYPD data including all cybercrimes investigated by CITU from 1996-2000</td>
<td>Cyberstalking</td>
<td>Aggravated harassment in which the offender used a computer or the Internet to commit the offense</td>
<td>42.8% (of cybercrimes)</td>
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<tr>
<td>Finn (2004)</td>
<td>Convenience sample of 339 undergraduate college students from the University of New Hampshire</td>
<td>Online harassment</td>
<td>Repeated messages meant to harass, threaten or insult via email or IM, including being sent pornography</td>
<td>10% (nonstrangers) 15% (strangers)</td>
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<tr>
<td>Alexy et al. (2005)</td>
<td>Convenience sample of 756 college students from a public and private universities</td>
<td>Cyberstalking</td>
<td>Not provided</td>
<td>3.7% (cyberstalking only) - 31.5% (in addition to stalking)</td>
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<tr>
<td>Sheridan and Grant (2007)</td>
<td>Sample of 1,051 self-identified stalking victims</td>
<td>Cyberstalking</td>
<td>Incidents persisting for &lt;4 weeks on &lt;10 occasions that included unsolicited emails and harassment via the Internet</td>
<td>7.2%</td>
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<tr>
<td>Baum et al. (2009)</td>
<td>Nationally representative sample of residents of the United States age 18 and older</td>
<td>Cyberstalking</td>
<td>Conduct which causes respondent to feel fear via unsolicited or unwanted emails</td>
<td>26.1% (of those who were stalked)</td>
</tr>
<tr>
<td>Holt and Bossler (2009)</td>
<td>Convenience sample of 578 college students</td>
<td>Online harassment</td>
<td>Dichotomous measure of online harassment (through chat client) in last 12 months</td>
<td>18.9%</td>
</tr>
</tbody>
</table>
disclose how they defined cyberstalking, but up to 26.8% of their sample experienced one of seven behaviors that can potentially be labeled as cyberstalking (e.g., receiving threatening email, being the target of electronic identity theft). This study also offers information on the forms that cyberstalking takes. For instance, the authors report that obscene emails were the most frequently occurring method of cyberstalking (N = 36), followed by online verbal abuse (N = 21), junk emails (N = 21), and threatening emails (N = 11) (Jerin & Dolinsky, 2001).

In a study of cyberstalking utilizing official data rather than self-report surveys (as every other study of cyberstalking has done), D’Ovidio and Doyle (2003) used data from the New York Police Department’s Computer Investigation and Technology Unit (CITU) to examine information about victims and methods of cyberstalking. The data represented all closed cases of aggravated harassment between 1996 and 2000 in which computers or the Internet was involved. Of all cybercrimes investigated by CITU during that period, cyberstalking was the most prevalent (42.8% of cases\(^\text{12}\)), and 40% of these cases were closed with an arrest.

Sheridan and Grant (2007) examined questionnaires completed by 1,051 self-defined stalking victims. These authors used conservative criteria before labeling an incident as either stalking or cyberstalking (i.e., as per Pathé et al., 2000), stalking was considered to have taken place if the behaviors persisted for over four weeks and occurred on ten or more occasions) (Sheridan & Grant, 2007). Based on this conservative criteria the authors reported that of those self-identified stalking victims, 47.5% reported that at least some of the harassment occurred over the Internet, but only 7.2% of the sample was assessed to have been cyberstalked. Further,

\(^{12}\) Of cases that were closed, information about offenders revealed that most often, offenders were male (80%), white (74%), and fairly young (average age of 24). Similar information about victims was also reported, which suggested that victims were most often female (52%), white (85%), and an average of 32 years old. Consistent with other research into the tactics used by cyberstalkers, email was the most frequently used method of communication for cyberstalkers (79%), followed by instant messengers (13%).
4% of the total sample was judged to have been stalked purely online. The authors also provide information about cyberstalkers and consequences of cyberstalking. For instance, cyberstalking victims were more likely to be stalked online by acquaintances or strangers than ex-partners, and police reportedly took victims who had only been stalked online more seriously than those who had been stalked both online and offline. Interestingly, those incidents involving crossover between cyberstalking and stalking\(^\text{13}\) were reported to involve the most extreme and physically dangerous stalking behaviors. After comparing stalking and cyberstalking victimization incidents from their sample, the authors argue that the two are “indistinguishable” in terms of the stalking process and effects on victims (Sheridan & Grant, 2007: 636). The authors admit to the problems associated with a self-defining sample, and a lack of generalizability, but nevertheless claim that this study has demonstrated that cyberstalking and stalking are not fundamentally different.

Additional information on cyberstalking tactics have been provided by Working to Halt Online Abuse (WHOA), an organization dedicated to fighting online harassment (WHOA, 2009). WHOA reported that it receives 50-75 incidents of cyberstalking each week from across the globe and from various sources (e.g., law enforcement, direct communications from victims). Beginning in 2000, WHOA started asking victims to fill out questionnaires related to their experiences with cyberstalking, which means that WHOA now has nine years of data available on cyberstalking victimization. Sample sizes across the years range from 196 incidents in 2004 to 443 incidents in 2005. Since the persons answering WHOA’s questionnaires have already been identified as cyberstalking victims, the extent of victimization cannot be estimated based on

\(^{13}\) For the purposes of statistical analyses, the authors divided their sample into four groups: purely online, cross-over, proximal with online, and purely off-line. Of those in the cross-over group, the stalking started online and persisted for at least four weeks before making the crossover to the physical world.
this data. Certain information about the cyberstalking incidents and victims can be gleaned from these reports. For instance, from their 2008 statistics, WHOA (2009) reported that for 36% of victims email was the tactic used by the offender to stalk the victim online. The next most frequent method of cyberstalking was through online message boards (e.g., forums, newsgroups) at 11.5%, followed by other methods (e.g., dating sites, gaming sites) at 11% (WHOA, 2009). According to WHOA’s 2008 statistics, victims of cyberstalking are most often: female (71%), 18-30 years old (35%), white (74%), and of unknown marital status (34%) or single (31%). WHOA also collects and reports information on cyberstalking offenders, a topic that has received even less research attention than cyberstalking victimization. WHOA (2009) reported that cyberstalkers are mostly male (42%), and previously in a relationship (e.g., ex-spouse, online dating) with their victims (57%).

**Empirical Estimates of Cyberstalking from Larger Studies of Offline Stalking**

Further empirical information on cyberstalking has been provided by scholars studying offline stalking. For instance, Fisher et al. (2000, 2002), surveyed a nationally representative sample of college women as part of a broader study about sexual victimization against college women, which included stalking victimization. Fisher et al.’s definition of stalking required that two or more pursuit behaviors by the offender had taken place, as well as a feeling of concern or fear for one’s safety on the part of the victim. As previously noted, the authors reported that 13.1% of sample respondents had been stalked in the preceding seven months. Additionally, of those women who had experienced stalking victimization, 24.7% (N = 166) had received emails from the stalker in the course of the stalking incident.

In another nationally representative sample, Baum et al. (2009) reported results from the Supplemental Victimization Survey (SVS) to the National Crime Victimization Survey (NCVS)
which estimated the extent of stalking in the United States. The NCVS is based on a nationally representative sample of residents of the United States age 18 and older, and asks respondents about their victimization experiences as well as those of the household members over the past 12 months. Like the Fisher et al. (2000, 2002) studies, the SVS identified stalking as experiences involving certain behaviors on two or more occasions, and a feeling of fear for one’s well-being, or fear for the safety of a family member as a result of these pursuit behaviors. While the SVS does not measure cyberstalking per se, it does provide information on tactics employed by stalkers similar to those of cyberstalkers. Specifically, one in four stalking victims (26.1%) also experienced some form of cyberstalking. The most frequent method of cyberstalking experienced by victims was email (82.5%), followed by instant messages (35.1%), blogs or bulletin boards (12.3%), and internet sites about the victim (9.4%) (Baum et al., 2009). The email cyberstalking estimates are not directly comparable between the Fisher et al. (2000, 2002) studies and the SVS for two reasons. First, the SVS separates out how many victims of stalking were also victims of cyberstalking. Second, the studies by Fisher and colleagues estimated all those who were stalked offline and reported how many of those victims were the recipient of emails as part of their stalking victimization. Taken together, these results suggest that cyberstalking is a potential problem, regardless of whether it is restricted to the virtual world of the Internet, or part of a crossover between cyberstalking and stalking in physical proximity to the victim.

Alexy et al. (2005) examined both stalking and cyberstalking among a sample of college students from a state university (N = 100) and a private university (N = 656). Students who participated in this study were presented with two scenarios and asked to provide feedback on whether they considered incidents in the scenarios to be stalking and/or cyberstalking. In
addition, participants completed a questionnaire pertaining to their experiences with
cyberstalking and their internet use in general. Of relevance is the finding reported by the
authors indicating that 3.7% of the total sample had experienced cyberstalking. Of those who
had been stalked, 31.5% experienced some form of cyberstalking in addition to their offline
stalking experiences. The authors do not disclose how they define either stalking or
cyberstalking, nor do they indicate whether they used descriptive language tapping cyberstalking
behaviors in their questionnaire to determine whether respondents were stalked/cyberstalked or if
they allowed respondents to identify themselves as stalking/cyberstalking victims.

Based on the works reviewed above, it is clear that the extent of cyberstalking
victimization is not currently known, but estimates range from 3.7% (Alexy et al., 2005) to 31%
(Spitzberg & Hoobler, 2002) of participants in each respective study. These numbers suggest
that cyberstalking may be more prevalent than traditional stalking. With respect to traditional
stalking, Mustaine and Tewksbury (1999) reported that in their sample, 10.5% of women
indicated they had been a victim of stalking in the past six months. Fisher et al. (2000, 2002)
surveyed college women and based on their nationally representative sample, reported that
13.1% of their sample had been stalked in the past seven months. When Tjaden and Thoennes
(1998) used a “relaxed” definition14 of stalking in their estimation of incidence in the last year,
they reported that 1% to 6% of women in their sample had been stalked.

14 This estimate was contingent on how the authors defined stalking. The “relaxed” definition was based on
respondents indicating that they were “a little” or “somewhat” frightened, whereas the more conservative definition
determined stalking had taken place if respondents indicated they were “very frightened” or in “fear of bodily
harm.” The more conservative estimate indicated that prevalence for the preceding 12 months was 1.0%.
Risk Factors for Stalking and Cyberstalking Victimization

While previous empirical examinations of cyberstalking victimization have provided some illumination as to the techniques employed by cyberstalkers, little is known about the factors which place individuals at risk for cyberstalking victimization. The current study is an attempt to fill this gap in the literature by examining the lifestyles and routine activities of victims of cyberstalking. There is, however, some work with respect to stalking victims that is informative in hypothesizing what places college students at risk of cyberstalking victimization. At a general level, it is consistently reported that females are at greater risk of stalking victimization than are males (see Fisher, 2001). This finding appears to be mirrored in the cyberstalking research (e.g., D’Ovidio & Doyle, 2003; Holt & Bossler, 2009). The exception is Alexy et al. (2005) who reported that males were more likely to be cyberstalked than females. Victims of offline stalking are most often 18 to 29 years old, and in a majority of cases perpetrators and victims know each other (Fisher et al., 2002; Tjaden & Thoennes, 1998). Interestingly, in comparison to other race groups, Native Americans and Alaska Natives appear to be at greater risk of stalking victimization, a finding that has not as yet been adequately explained (Fisher et al., 2002; Tjaden & Thoennes, 1998). This does not appear to be the case with cyberstalking. The information that is available indicates that whites are overwhelmingly more likely to be cyberstalked than other race groups (e.g., D’Ovidio & Doyle, 2003). Among college students specifically, demographic characteristics do not consistently separate stalking victims from nonvictims (Fisher & Stewart, 2007). This may be due to the fact that college students do not vary substantially demographically. For instance, college students generally are around the same age, and have usually never been married. Fisher and colleagues’ (2002) analysis of female college students indicated that those students who are victimized are more
likely to come from affluent family backgrounds and to be undergraduates rather than graduate students. There are no comparable demographic data with respect to victims of cyberstalking.

Beyond demographic explanations of stalking, research suggests that lifestyles and routine activities of college students are significant predictors of stalking. The work of Mustaine and Tewksbury (1999) and Fisher et al. (2002) have been integral in providing support for this perspective. Mustaine and Tewksbury’s examination of a sample of 861 college women revealed that victims of stalking were more likely than nonvictims to engage in lifestyles in which they were exposed to potential offenders (i.e., frequently going to the mall). Besides the variable measuring going to the mall, other relevant predictors of stalking included living off campus, being employed, and engaging in drinking and drug use behaviors, all of which are theoretically consistent with a lifestyle/routine activity perspective. Fisher et al.’s (2002) results are comparable to Mustaine and Tewksbury’s (1999). For instance, a propensity to be at places with alcohol, living alone, dating, and prior victimization were all significant predictors of stalking victimization for females. To date, only one study has examined cyberstalking from a lifestyle/routine activity perspective, and this study focused exclusively on the harassment aspect of cyberstalking victimization. Holt and Bossler (2009) reported that individuals who use chat rooms and engage in computer-related deviance are more likely to be cyberstalked. There is a need for more work examining cyberstalking from a lifestyle/routine activity perspective; the current study will address this gap in the cyberstalking literature.

**Cyberstalking Summary—Current State of Knowledge**

The impression one gets after examining the extant literature on cyberstalking is that there are more questions than answers. Previous works have made a convincing argument that cyberstalking is a specific type of victimization that warrants attention, but to date there have
been only a handful of studies designed to estimate its scope, and even less that identify risk factors for victimization. Researchers’ understanding of the topic is further hindered by weak study designs, definitional inconsistencies, and the examination of convenience samples.

Further, cyberstalking is a challenging topic to study because of the difficulty in obtaining sampling frames and representative samples of at risk populations. In addition, for the most part previous work has not advanced beyond demographic explanations and descriptive analyses of victimization (e.g., females are more at risk). A lifestyle/routine activity approach to the study of cyberstalking will be a more fruitful way to identify correlates of risk for cyberstalking victimization. Victims’ online lifestyles and routine activities may place them at greater risk of online victimization. For instance, perhaps the amount of time one spends online operates to expose internet users to more “risk” of online victimization. These sorts of issues will be addressed following a discussion of the lifestyle-exposure and routine activities perspectives.

This dissertation is divided into five chapters. Chapter 1 has presented the current state of knowledge related to cyberstalking victimization. Chapter 2 will introduce the theoretical framework for the current study, lifestyle/routine activities theory, and discuss risk factors for the victimization of college students, including the cybervictimization of college students. Chapter 3 will describe the methodology adopted in the current study for estimating the extent and nature of cyberstalking victimization among college students. Chapter 4 will present the results of the data analysis, particularly the extent of victimization amongst members of the sample, and those factors which placed victims at risk of cyberstalking. In Chapter 5, the dissertation concludes with a review of the findings, an assessment of the limitations of the approach, and a discussion of the implications for crime prevention.
Chapter 2
THEORETICAL FRAMEWORK

Lifestyle-exposure theory and routine activity theory were introduced fairly recently to criminologists and victimologists, but have since enjoyed extensive empirical testing, refinement, and support (e.g., Cohen, Felson, & Land, 1980; Cohen, Kluegel, & Land, 1981; Cook, 1986; Felson, 1995; Fisher, Sloan, Cullen, & Lu, 1998; Henson, Wilcox, Reyns, & Cullen, in press; Lynch, 1987; Messner & Blau, 1987; Miethe & McDowall, 1993; Miethe & Meier, 1990, 1994; Miethe, Stafford, & Long, 1987; Mustaine & Tewksbury, 1998, 1999, 2002; Sampson & Lauritsen, 1990; Schreck & Fisher, 2004; Schreck, Wright, & Miller 2002; Wilcox Rountree, Land, & Miethe, 1994). The overall lifestyle/routine activities perspective will be discussed, as these theories are often combined or treated as one approach because of their common theoretical assumptions, followed by a discussion of the application of these theories in virtual or cyberspace environments. The lifestyle/routine activities perspective has not been applied to cybercrimes nearly to the degree that it has been to other more traditional crimes, however this point warrants discussion. The relevant literature will be presented below (e.g., Choi, 2008; Eck & Clarke, 2003; Holt & Bossler, 2009; Marcum, 2009; Newman & Clarke, 2003; Yar, 2005) and the applicability of the perspective to cyberspace will be discussed further in Chapter 5.

LIFESTYLE-EXPOSURE THEORY AND ROUTINE ACTIVITIES THEORY

Lifestyle-exposure theory and routine activities theory are both considered opportunity theories. This means that they both attribute crime to criminal opportunities that exist as part of everyday life (Cohen et al., 1981; Felson, 2002; Felson & Clarke, 1998; Wilcox et al., 2003). At the very least, criminal opportunity is considered a necessary condition for a crime to take place.
Simply put, without an opportunity for a crime to occur, one will not happen. Lifestyle-exposure theory and routine activities theory both focus on the circumstances under which such opportunities are created, with only subtle differences differentiating the two. For one, the lifestyle-exposure perspective focuses on individual-level risk factors, while routine activities theory was originally conceived as a macro-level explanation for fluctuations in crime rates (Felson, 2008). Lifestyle-exposure theory purports that certain lifestyles expose individuals to risk of victimization (e.g., exposure to an offender), thus creating an opportunity for a crime to occur (Hindelang et al., 1978). Cohen and Felson (1979) considered criminal opportunity in terms of its component parts. That is, the authors maintained that three elements are required for a crime to occur: a suitable target, a motivated offender, and an absence of capable guardianship. These two theoretical perspectives will be discussed in detail separately below, followed by a review of the empirical support for the overall perspective, especially its application to the victimization of college students. Following this, there will be an overview of theoretical refinements to the theories, and finally, a discussion of the adaptation of the theories to cyberspace.

**Lifestyle-Exposure Theory**

Lifestyle-exposure theory, also referred to as lifestyle theory or lifestyle-opportunity theory, was introduced by Hindelang et al. (1978) in their book, *Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization*. The book included an analysis of the 1972-1974 National Crime Survey (NCS), which the authors used to study victimization patterns among a representative sample of residents living in the United States. Among the patterns of victimization uncovered by Hindelang et al. (1978) was that individuals possessing certain demographic characteristics were disproportionately victimized. For example, the NCS
results showed that males were generally more often victims than females. Based on their analysis of the NCS data, the authors theorized that the patterns of victimization they observed across demographic groups (e.g., sex, age, race) were the result of differences in lifestyles across demographic groups. For instance, sex is an often-mentioned demographic characteristic that is associated with differences in lifestyle (e.g., men and women engage in different lifestyles). As an example, if females participate in more home-based lifestyles, they are exposed to fewer risky situations posed by strangers\(^\text{15}\). As a consequence of their lesser exposure to risk, it is hypothesized that females would be less likely to be victimized (at least by strangers) than males.

If there are indeed differences in lifestyle as a function of sex that are influenced by role expectations, structural constraints, and adaptations, then theoretically these differences may expose males and females to differing degrees of risk of victimization. Lifestyle, and therefore exposure, is also expected to vary based on race and age of the victim. Regarding age, for instance, it would not be controversial to suggest that people of different ages participate in different kinds of lifestyles. These lifestyle differences therefore expose individuals of different ages to varying levels of risk of victimization. For example, it has been consistently reported that younger people are more likely to be victimized than older people (e.g., Hindelang et al., 1978). According to lifestyle-exposure theory, the explanation for younger people experiencing higher rates of victimization would be that younger people participate in lifestyles that expose them to greater risks for victimization (e.g., staying out later, frequenting bars, associating with other young people). This exposure to risk is one of the key components of lifestyle-exposure theory.

\(^{15}\) Home-based lifestyles may expose females to greater risk for certain types of victimization such as domestic violence, incest, and child abuse.
An important consideration in lifestyle-exposure theory is what influences these differences in lifestyle. According to Hindelang et al. (1978), demographic characteristics (i.e., age, sex, race, income, marital status, education, occupation) bring with them certain role expectations and structural constraints (i.e., economic, familial, educational, legal) which dictate how a person must adapt if they are to function in socially and legally acceptable ways. Role expectations are the first antecedents to lifestyle and are defined by the authors as, “…cultural norms that are associated with achieved and ascribed statuses of individuals and that define preferred and anticipated behaviors,” (Hindelang et al., 1978: 242). In other words, it is hypothesized that people with certain characteristics and combinations of characteristics are expected to behave in certain ways, and these role expectations to some degree impose certain lifestyles upon individuals possessing that role. For example, marital status is an often-mentioned determinant of lifestyle in that married people are expected to be spend time with their spouse, often at home, and eventually raise a family—all activities that theoretically are not risky or likely to facilitate victimization (Cohen & Felson, 1979). This is in contrast to a young single male who would most likely spend his time with friends, going on dates, and in essence, staying out late and leading a lifestyle conducive to victimization. The second antecedent to lifestyle posited by the authors is the structural constraints that are imposed by the larger social structure. The authors define these as, “…limitations on behavioral options that result from the particular arrangements existing within various institutional orders, such as economic, familial, educational, and legal orders,” (Hindelang et al., 1978: 242). In other words, the larger social structure imposes limits on our behavior, be it in the form of laws governing our behavior or personal economic considerations limiting where we can live and what activities we can participate in (Hindelang et al., 1978).
Obviously, individuals possessing the same constellation of demographic characteristics do not necessarily follow identical lifestyles, which is why the lifestyle-exposure model accommodates the role of individual decision-making in determining lifestyle. The authors stipulated that these guides or limits on behavior (i.e., role expectations, structural constraints) as a result of demographic characteristics were further refined by individual adaptations to them. These adaptations can be either individual or group-level (i.e., subcultural) responses to role expectations and structural constraints. The inclusion of adaptations in the lifestyle-exposure theoretical model allows for individual skills, personality, beliefs and attitudes to be taken into account in ultimately determining the sort of lifestyle a person will engage in. According to the authors, “Individuals adapt to structural constraints and role expectations in ways that result in regularities in behavioral patterns. What is important is that these include such routine activities as working outside the home, going to school, or maintaining a household, as well as typical leisure time pursuits. These daily routines constitute lifestyle as we use the term here,” (Hindelang et al., 1978: 244).

Hindelang et al. (1978) hypothesize that participation in certain peer groups (associations), as determined by one’s lifestyle, also exposes individuals to opportunities for personal victimization. The principle of homogamy stipulates that individuals possessing certain characteristics are likely to associate with others possessing those same characteristics (e.g., teenage girls associate more with other teenage girls). It follows that if certain characteristics are associated with offending (e.g., being young and male), those who share those characteristics and associate with those potential offenders are more likely to be victimized themselves (i.e., they are exposed to more opportunities for personal victimization). For instance, young people (a high risk group and high offending group) who spend time with other young people, are therefore
exposed to greater opportunities for victimization as a function of whom they spend they time with. In sum, individuals develop a lifestyle which conforms to the limits placed upon them by their role and the larger society, and it is the activities which comprise this lifestyle that determines one’s degree of exposure to victimogenic situations and opportunities. Figure 2.1 illustrates the full lifestyle-exposure theoretical model, as outlined by Hindelang and colleagues. The dashed lines around the demographic characteristics indicate that the variables are not part of the causal order of the theoretical model; however they still need to be considered in light of their potential influence on victimization.

**Figure 2.1: The Lifestyle-Exposure Theoretical Model of Personal Victimization**

![Diagram of the Lifestyle-Exposure Theoretical Model of Personal Victimization](source: Hindelang et al. (1978)).

**Routine Activities Theory**

Routine activities theory was originally devised by Cohen and Felson (1979) to explain upward changes in aggregate predatory crime rates in the United States following World War II. The authors examined data from 1947-1974 from a variety of sources (e.g., Current Population Survey) to test their hypothesis that the rising crime rates during those years could be attributed to changes in social activities at the societal level in the United States. These changes in societal
routine activities included more women entering the labor force and attending college, leaving the home unoccupied and unguarded during the day. The change from home-based activities not only exposed these individuals to more opportunities for personal victimization, it also provided opportunities for the now unguarded homes to be targeted. However, being outside the home, or leaving one’s property unguarded are not sufficient conditions to facilitate victimization. The authors stipulated that there are three essential elements to every criminal opportunity: a motivated offender, a suitable target, and an absence of capable guardianship. Eck (2003) has termed this triad the “crime triangle,” which is pictured in Figure 2.2.

**Figure 2.2: The Crime Triangle**

![The Crime Triangle Diagram]

Source: Adapted from Eck (2003).

The motivated offender element is comparable to the earlier exposure concept introduced by Hindelang et al. (1978), both of which in some way are related to the notion of proximity (as in physical proximity to motivated offenders), a concept that has since appeared in studies utilizing the lifestyle/routine activity perspective (e.g., Cohen et al., 1981). The suitable target element of the theory has been conceived of in various ways to include aspects of target.
attractiveness (e.g., Cohen et al., 1981), as well as target congruence\textsuperscript{16}, which is characterized by target vulnerability, target gratifiability, and target antagonism (Finkelhor & Asdigian, 1996). Cohen and Felson (1979) also described products presenting attractive targets as VIVA, or having Value, Inertia, Visibility, and Access. Clarke (1999) expanded the VIVA concept with a different acronym. According to Clarke, CRAVED items are attractive targets because they are Concealable, Removable, Available, Valuable, Enjoyable, and Disposable. In terms of cyberstalking, information about a potential victim (e.g., contact information, gender, passwords) may be a CRAVED item or commodity. The third side of the triangle, absence of capable guardianship, involves the presence of anyone (e.g., pedestrians, police) or anything (e.g., cameras, dogs) capable of preventing crime. It is hypothesized that all else equal, more protected targets are less likely to be chosen as targets by offenders.

According to Cohen and Felson (1979), the lack of one or more of these elements is sufficient to prevent crimes from occurring; however, little research has been focused upon which of these conditions is the most important, if any, or which factor makes the most difference with respect to criminal decision-making. The visual presentation of the crime triangle in Figure 2.2 may imply that each of the three components of the theory (i.e., motivated offender, suitable target, lack of guardianship) make an equal contribution to the creation of criminal opportunities. However, this may not be the case. Wilcox et al. (2003) have addressed this issue with their dynamic view of criminal opportunity, explaining several scenarios in which the amount of convergence in time and space of these concepts affects criminal opportunities, as well as the supply of motivated offenders, suitable targets, and environments lacking

\textsuperscript{16} The concept of target congruence was introduced in the context of the victimization of minors; however, the idea has applicability to other potential targets for victimization beyond children and minors.
guardianship. For example, one scenario involves a context in which the supply of motivated offenders is low, the supply of suitable targets is high, and the availability of capable guardianship is high. In this scenario, we would expect relatively little criminal activity because even though the supply of potential targets is high, there is a low demand for and high guardianship of suitable targets (Cook, 1986; Wilcox et al., 2003).

Routine activities theory does not attempt to explain why offenders participate in crime, instead focusing on those circumstances brought on by patterns of routine activities (e.g., work, family, leisure, school) which create criminal opportunities. In this sense then, routine activities theory is essentially the same as its sister theory, lifestyle-exposure theory. The key difference between the theories when Social Change and Crime Rate Trends: A Routine Activity Approach was published in 1979 was that Hindelang, et al.’s lifestyle-exposure theory was an individual theory of victimization, while Cohen and Felson’s routine activity approach was an aggregate-level theory of crime. Soon after the first routine activities article was published, the theory was adapted for use at the micro-level (e.g., Cohen et al., 1981; Miethe & Meier, 1990; Miethe et al. 1987), essentially bridging the gap between lifestyle-exposure theory and routine activities theory. In fact, Maxfield (1987) has written about the strong link between the two theories based on the similarities in their underlying concepts (i.e., lifestyles, routine activities), and Garofalo (1987) has argued that the two theories are very much alike.

**Empirical Support for Lifestyle/Routine Activities Theory**

Lifestyle-exposure and routine activities theories have implicitly been combined over the years as researchers have tested hypotheses about how lifestyles and routine activities expose individuals to risk of victimization. This largely unspoken fusion of the theories has resulted in a
lifestyle/routine activities theory\textsuperscript{17} (LRAT). The theories have been used to explain opportunities for different types for victimization (e.g., personal, property) across a wide range of environments (e.g., workplaces, places of leisure) and samples (e.g., adolescents, adults, college students) at different levels of analysis (i.e., micro, macro, meso). While not all tests of the perspective have corroborated the utility of the theories in explaining victimization (e.g., Massey, Krohn, & Bonati, 1989), the overall body of research has generally been supportive of the theories. Support for the lifestyle/routine activities perspective in explaining the victimization of college students will be discussed later in the chapter.

**Theoretical Extensions to Lifestyle/Routine Activities Theory**

*Deviant Lifestyles*

One of the concepts central to lifestyle theory is that there are a variety of lifestyles individuals participate in, and depending upon the routine activities associated with these lifestyles, individuals are exposed to times and places with varying levels of risk for victimization (Hindelang et al., 1978). Not only do lifestyle patterns influence exposure to risks of victimization, but they also affect the frequency of interaction with those who are more or less likely to commit crimes (Garofalo, 1987). According to the principle of homogamy, “an individual’s chances of personal victimization are dependent upon the extent to which the individual shares demographic characteristics with offenders,” (Hindelang et al., 1978: 257). It has also been suggested that there is a link between participation in delinquent and deviant lifestyles and risks of victimization (e.g., see Garofalo, 1987; Jensen & Brownfield, 1987). This relationship has been examined empirically, and research has confirmed the connection between

\textsuperscript{17} The terms lifestyle/routine activities theory, lifestyle theory, and routine activities theory will be used interchangeably in referring to the lifestyle/routine activities theory from this point forward.
deviant/offending lifestyles and victimization, although more recent research suggests that the relationship may be more complicated than previously thought (e.g., Gottfredson, 1984; Henson, et al., in press; Jensen & Brownfield, 1987; Lauritsen & Laub, 2007; Lauritsen, Sampson, & Laub, 1991; Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996; Sampson & Lauritsen, 1990; Schreck, Stewart, & Osgood, 2008). Further, the small body of research that has examined the effects of risky or deviant behaviors on online victimization suggests that engaging in these sorts of activities increases one’s risks for online victimization (e.g., Bossler & Holt, 2009; Holt & Bossler, 2009; Wolak, Finkelhor, Mitchell, & Ybarra, 2008).

**The Role of Self-Control**

Gottfredson and Hirschi (1990) have argued that low self-control is the primary explanation for why individuals engage in not only criminal activities, but also experience other undesirable life events (e.g., failed relationships, unsuccessful careers). Once one’s propensity toward self-control (e.g., low self-control) is established in early life, it is argued to remain fairly constant throughout the life course (Gottfredson & Hirschi, 1990). If a person has low self-control, they make decisions as if the consequences do not really matter, and instead satisfy their immediate desires.

Schreck (1999) suggested that this theory, which was originally conceived to explain offending behaviors, could be reformulated and used to account for victimization outcomes. In doing so, he helped to explain some of the overlap between victims and offenders. Schreck reported that low self-control could explain both property and personal victimization. That is, those with low self-control had greater odds of experiencing property and personal victimization. In addition, after taking the role of self-control into account statistically, demographic correlates of victimization (e.g., gender, income) exerted lesser influences on victimization outcomes.
Subsequent work by Schreck and colleagues has solidified the role of self-control in explaining victimization. Schreck et al. (2002), for instance, utilized the lifestyle/routine activities perspective in conjunction with individual risk factors (e.g., low self-control, social ties) to explain violent victimization among adolescents. The authors reported that both individual traits and situational (i.e., opportunity) variables exhibited statistically significant effects in accounting for victimization. Expanding upon the idea that social ties, specifically ties to family and peers, can affect victimization risk through lifestyle/routine activity concepts (e.g., exposure, guardianship), Schreck and Fisher (2004) reported that adolescents with close ties to family were less likely to experience violent crime. Conversely, those who were not close or were alienated from their parents were more likely to be victimized. The authors also confirmed the role of delinquent peers in increasing one’s chances of victimization through exposure to risky situations (Schreck & Fisher, 2004). Schreck, Stewart, and Fisher (2006) further integrated self-control theory with lifestyle/routine activities theory, while also taking into account the effect of social ties, peer delinquency, and other known correlates of victimization. Once again, the authors reported that low-self control was a robust predictor of victimization, even after considering the effects of past victimization, delinquency, delinquent peers, and social bonds (Schreck et al., 2006). Holtfreter, Reisig, and Pratt (2008) utilized routine activities theory and low self-control in an effort to account for a nonviolent type of victimization—fraud. Like previous work by Schreck and colleagues, the authors found support for routine activities and low self-control in explaining fraud victimization.

The Role of Self-Control in Electronic/Online Environments

The body of research utilizing low self-control to explain victimization outcomes has largely focused on violent and property victimization, and suggests that overall this latent trait is
useful in accounting for these types of victimization. However, to date no studies have examined cyberstalking victimization from a low self-control perspective. The question then becomes, why would someone with low self-control be more vulnerable to cyberstalking victimization? The answer is twofold—first, individuals with low self-control may be more likely to make choices that (1) expose them to risk of cyberstalking victimization (e.g., spending more time online, visiting “riskier” websites), (2) bring them into online proximity with motivated offenders (e.g., granting strangers access to social network profiles or blogs), (3) lower their self-guardianship while online (e.g., these individuals may not guard their sensitive information as closely as someone with higher self-control), or (4) present more attractive targets (e.g., posting photos of themselves in provocative poses); second, lower self-control likely affects the nature of one’s electronic/online interactions. For instance, those with a propensity toward low self-control may be more abrasive and aggressive in their online interactions, perhaps annoying others during online communications (e.g., in chat rooms, instant message communications, text messages), antagonizing the potential offender into retaliation via threats, sexual advances, or other types of harassment. It becomes important therefore to consider how low self-control affects likelihood of cyberstalking victimization in conjunction with their online lifestyles and routine activities.

**Summary—Refinements to Lifestyle/Routine Activities Theory**

The identification of deviant and delinquent lifestyles as a correlate of victimization was a valuable discovery for victimologists. Mustaine and Tewksbury (1998) and others have argued that lifestyle/routine activities theory will benefit from research utilizing more specific and refined measures of lifestyles, and the identification of deviant lifestyles as a significant predictor of a variety of types of victimization certainly validates their argument. To illustrate, in a study
of adolescent victimization, Henson et al. (in press) identified 11 distinct adolescent lifestyles and routine activities (e.g., family-oriented lifestyle, electronic lifestyle, work-centered lifestyle), including a delinquent lifestyle, which overwhelmed the other lifestyles as predictors of violent victimization. Researchers have only recently begun to pursue the idea that there are electronic or online lifestyles as a distinct type of lifestyle. Holt and Bossler (2009) have indicated that similar to traditional deviant lifestyles, deviant online activities (e.g., piracy) may be tied to online victimization. Accordingly, the current study will consider the effects of online delinquency in predicting cyberstalking victimization. Like the discovery of deviant lifestyles as a correlate of victimization, Schreck’s (1999) suggestion that low self-control explains victimization has been an important addition to the routine activities literature. Schreck and colleagues have made a valuable contribution to the field of Victimology by proposing that a criminological theory be extended for use in the study of victimization. Low self-control has not been considered in terms of stalking or cyberstalking victimization to date; however it has been applied to cybercrime offending. For instance, Higgins (2005) examined the role of low self-control, delinquent peers, attitudes toward software piracy, and reported that there was a link between low self-control and media piracy. In light of the link between low self-control and victimization and low self-control and cybercrime, the current study will consider the effects of low self-control on cyberstalking victimization.

**THE APPLICATION OF LIFESTYLE/ROUTINE ACTIVITIES THEORY TO COLLEGE STUDENT VICTIMIZATION**

Lifestyle/routine activities theory has been successfully used to explain the victimization of specific populations (e.g., adolescents, college students), and in line with Lynch’s (1987) suggestion, it has also been applied to victimization of individuals in different domains of life
(e.g., places of work, college campuses). One of these populations, college students, is the focus of the current study. College students have been identified as at risk for a variety of types of victimization, including stalking (for a review of college student victimization, see Fisher et al., 2010). However, since routine activities theory has not been applied to the cyberstalking victimization of college students, with the exception of Holt and Bossler’s (2009) study, it is necessary to consider those lifestyle/routine activity factors that have been identified as significant indicators of college student victimization generally.

Table 2.1 displays those lifestyle/routine activities studies that have sought to explain the victimization of college students. These studies provide a starting point for determining which factors are important indicators of college student victimization generally, and which corresponding lifestyle/routine activity concepts are significantly related to victimization. Although the studies in Table 2.1 are focused upon a variety of different independent and dependent variables, there are patterns that emerge in terms of risk factors for college student victimization. For instance, alcohol and drug use have been consistently identified as significant predictors of victimization (e.g., Cass, 2007). Related to this, participating in what may be considered risky activities or lifestyles (e.g., frequently partying, engaging in illegal activities) carry with them added likelihood of victimization (e.g., Fisher et al., 1998). For certain types of victimization (e.g., sexual assault), demographic characteristics may be indicators of target attractiveness, and these variables are generally found to increase one’s likelihood of victimization. For instance, being female has been identified as a significant predictor of certain types of victimization (e.g., Mustaine & Tewksbury, 1998). Spending large sums of money on nonessential items, another measure of target attractiveness, has also been identified as a correlate of college student victimization (Fisher et al., 1998). Coming into contact with
### Table 2.1: Lifestyle/Routine Activities and the Victimization of College Students

<table>
<thead>
<tr>
<th>Authors (year published)</th>
<th>Sample</th>
<th>Dependent Variable(s)</th>
<th>Selected Significant Predictors of Victimization (Independent Variables)</th>
<th>Supported Lifestyle/Routine Activity Concepts and Effect on Victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stalking and Online Harassment Studies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher et al. (2002)</td>
<td>Nationally representative sample of 4,446 college women in the United States</td>
<td>Stalking</td>
<td>Propensity to be in places with alcohol, being in a committed relationship of more than one year, committed relationship of less than one year, some dating, class standing, living alone, and prior sexual victimization increased likelihood of victimization</td>
<td>Exposure (+) Lack of guardianship (+) Target attractiveness (+)</td>
</tr>
<tr>
<td>Mustaine and Tewksbury (1999)</td>
<td>861 university women from nine postsecondary institutions</td>
<td>Stalking</td>
<td>Being employed, frequently going to the mall, engaging in drinking and drug use behaviors, and carrying self-protection (e.g., mace) increased likelihood of victimization; living on campus decreased likelihood of victimization</td>
<td>Exposure (+) Guardianship (mixed) Proximity (+) Risky of deviant lifestyle (+)</td>
</tr>
<tr>
<td>Holt and Bossler (2009)</td>
<td>578 college students from a single southeastern university</td>
<td>Online harassment</td>
<td>Using chatrooms, engaging in computer hacking, friends’ deviance, and being female increased likelihood of victimization</td>
<td>Risky or deviant online lifestyle (+)</td>
</tr>
<tr>
<td><strong>Sexual Victimization Studies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cass (2007)</td>
<td>Nationally representative sample of 3,472 college students from 12 institutions</td>
<td>Sexual assault</td>
<td>Being female, drug use, and being single increased likelihood of victimization</td>
<td>Risky or deviant lifestyle (+)</td>
</tr>
</tbody>
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18 College student victimization studies are sorted by dependent variable and author.
<table>
<thead>
<tr>
<th>Authors (year published)</th>
<th>Sample</th>
<th>Dependent Variable(s)</th>
<th>Selected Significant Predictors of Victimization (Independent Variables)</th>
<th>Supported Lifestyle/Routine Activity Concepts and Effect on Victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fisher et al. (2000)</td>
<td>Nationally representative sample of 4,446 college women in the United States</td>
<td>Sexual victimization</td>
<td>Being unmarried, frequently drinking enough to get drunk, living on campus, and having previously been a victim of sexual victimization increased likelihood of victimization</td>
<td>Exposure (+) Risky or deviant lifestyle (+)</td>
</tr>
<tr>
<td>Mustaine and Tewksbury (2002)</td>
<td>674 college women from 12 southern postsecondary institutions</td>
<td>General sexual assault Serious sexual assault</td>
<td>General sexual assault: frequently going out at night for leisure, being a member of a greater number of clubs and/or organizations, being a member of an athletic team, buying illegal drugs, and using drugs in public increased likelihood of victimization; frequently going to the movies and having a father consistently employed while growing up decreased likelihood of victimization. Serious sexual assault: frequently going out at night for leisure, being a member of a greater number of clubs and/or organizations, and using drugs in public increased likelihood of victimization; frequently going to the movies and getting advice from parents when in difficulty decreased likelihood of victimization.</td>
<td>General sexual assault: Exposure (+) Proximity (+) Risky or deviant lifestyle (+)</td>
</tr>
<tr>
<td>Schwartz and Pitts (1995)</td>
<td>208 female undergraduates from Ohio University</td>
<td>Rape</td>
<td>Drinking three or more times per week, drinking heavily on each occasion, and being friends with motivated</td>
<td>Proximity (+) Risky or deviant lifestyle (+)</td>
</tr>
<tr>
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<td>Schwartz and Pitts (1995) continued</td>
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<tr>
<td>Fisher et al. (1998)</td>
<td>Nationally representative sample of 3,472 college students from 12 institutions</td>
<td>Violent victimization/ Theft victimization</td>
<td>Violent victimization: number of nights spent partying on campus, regularly taking drugs, and participating in crime prevention actions increased likelihood of victimization Theft victimization: living in all male or coed dorms, living in larger all male dorms, spending many nights on campus, being full time, spending large sums of money on nonessential items, being a member of an athletic team all increased likelihood of victimization Asking someone to watch property decreased likelihood of victimization</td>
<td>Violent: Exposure (+) Guardianship (+) Theft: Exposure (+) Guardianship (-) Proximity (+) Target attractiveness (+)</td>
</tr>
<tr>
<td>Mustaine and Tewksbury (1998)</td>
<td>1,513 college students from nine postsecondary institutions</td>
<td>Minor theft victimization/ Major theft victimization</td>
<td>Minor theft: being female, white, living in rural areas, engaging in activities outside the home (e.g., eating out frequently), engaging in illegal behaviors, and alcohol and drug use increased likelihood of victimization; having a dog at home decreased the likelihood of victimization Major theft: being female, unemployed, having few roommates, engaging in activities outside the home</td>
<td>Minor theft: Exposure (-) Guardianship (-) Proximity (+) Risky or deviant lifestyle (+) Major theft: Exposure (-) Guardianship (-) Proximity (+)</td>
</tr>
<tr>
<td>Authors (year published)</td>
<td>Sample</td>
<td>Dependent Variable(s)</td>
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<tr>
<td>Mustaine and Tewksbury (1998) continued</td>
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<td>(leaves home to study), engaging in illegal behaviors, and alcohol and drug use increased likelihood of victimization; having a dog at home and installing extra locks lowered one's risk</td>
<td>Risky or deviant lifestyle (+)</td>
</tr>
</tbody>
</table>
potential offenders (proximity) and being exposed or available for victimization (exposure) have also been reliable predictors of college student victimization. For instance, being friends with individuals who participate in deviant or illegal activities, a measure of proximity, has been identified as a precursor to a variety of types of victimization (e.g., Schwartz & Pitts, 1995). Likewise, frequently going out at night, a measure of exposure, has been consistently identified as a significant predictor of victimization (e.g., Mustaine & Tewksbury, 2002). Crime prevention measures and activities (guardianship) are theoretically expected to decrease one’s likelihood of victimization; however this has not always been the case. For instance, Fisher et al. (1998) reported that participating in crime prevention actions was significantly related to violent victimization, but asking someone to watch property instead of leaving it unattended was associated with a lower likelihood of theft victimization.

Considering only those three studies that have focused on the stalking and cyberstalking victimization of college students, the lifestyle/routine activity concepts of exposure, proximity, target attractiveness, and delinquent lifestyle have been identified as consistent indicators of victimization (Fisher et al., 2002; Holt & Bossler, 2009; Mustaine & Tewksbury, 1999). Each of these concepts has been reported to operate in the theoretically expected manner to increase college students’ risk of stalking and cyberstalking victimization. However, the concept of guardianship has been less reliable in terms of operating in accord with theoretical expectations. Fisher et al. (2002) reported that, as expected, a lack of guardianship increased student stalking victimization. However, Mustaine and Tewksbury (1999) reported mixed results on the effects of guardianship, and Holt and Bossler (2009) found no statistically significant relationship between guardianship and victimization.
In sum, lifestyle/routine activity theory has demonstrated its usefulness in explaining the victimization of college students, including the stalking and cyberstalking victimization of college students, and most of the routine activity concepts (e.g., exposure, proximity) have been reported to behave in accord with theoretical predictions. More work is needed in the context of cyberstalking victimization to more fully explore the effects of the lifestyle/routine activities concepts.

**LIFESTYLE/ROUTINE ACTIVITIES IN CYBERSPACE**

Clarke (2004) has pointed out that globalization and new technologies have created considerable new opportunities for crime, and that the new environments in which these opportunities reside have substantial implications for criminology. However, there is considerable uncertainty over whether current criminological theories, including lifestyle/routine activities theory, are applicable to virtual environments (McQuade, 2006; Yar, 2005, 2006). The study of cybercrime has not yet fully answered the question of whether such crimes are inherently different than their terrestrial counterparts, making theorizing difficult (Grabosky, 2001). With respect to lifestyle/routine activities theory, Yar (2005) has argued that certain aspects of the theory (i.e., motivated offenders) can easily be adapted to virtual environments. He also, somewhat more reluctantly, accepts the possibility of envisioning suitable targets and capable guardianship in cyberspace, although he points out that it may be difficult to effectively institute capable guardianship in virtual environments (Yar, 2005). The problem, according to Yar (2005), is that routine activities theory is premised on the spatial-temporal convergence of the three core concepts (i.e., motivated offenders, suitable targets, ineffective guardianship) and virtual environments are inherently timeless and do not exist in space, or in Yar’s words are “spatio-temporally disorganized,” (Yar, 2005: 424).
Network Problems

Eck and Clarke’s (2003) work in fusing routine activity theory with problem-oriented policing helps shed some light on the issue of space and time with respect to routine activities theory in cyberspace. While not specifically speaking to the applicability of the theory to cyberspace, Eck and Clarke (2003) contend that the theory can be used to success in situations in which victims and offenders interact at some distance (e.g., mail bombing, harassing phone calls, telemarketing fraud). The authors explain that in the context of police problems, this is known as a systems problem. In a systems problem, the victim and offender converge not in space, but within a network (e.g., telephone and internet systems, mail/package delivery). Further, in the context of online victimization, motivated offenders and targets do not necessarily have to converge online at the same time. Figure 2.3 illustrates the theoretical transition of the convergence of targets and offenders from places to networks.

Figure 2.3: The Transition from Places to Networks

Reyns and Henson (2009) have hypothesized that targets and offenders come together through a network, but the victimization incident may many times transpire within an online place. These online places can be chat rooms, social networks, auction sites, and other web domains (e.g., email clients). In other words, victims and offenders still intersect, but the “place”
in which they intersect is an online place or web domain. Figure 2.4 further refines the crime triangle to accommodate cybercrimes.

The notion that websites can be places in which crimes take place has a number of implications for crime prevention theory. For instance, if websites can be considered online places, then it is reasonable to expect cybercrimes to concentrate at specific places online just as they do at physical locations such as bars, shopping malls, sports venues, or other busy places (e.g., Brantingham & Brantingham, 1995; Eck, Clarke, & Guerette, 2007; Sherman, Gartin, & Buerger, 1989; Spelman, 1995; Townsley, Homel, & Chaseling, 2000; Weisburd, Bushway, Lum, & Yang, 2004; Weisburd et al., 1992). With respect to cyberstalking, web domains are the places where victims and offenders converge, allowing the stalker access to the victim. In most cases, this web domain interaction facilitates the cyberstalking victimization by bringing together these two parties that otherwise would not converged.

**Figure 2.4: Routine Activities in an Online Domain**

![Diagram of Routine Activities in an Online Domain]

**SCAREM**

In a further modification of crime prevention theory for application to cyberspace environments, Newman and Clarke (2003) have argued that cybercrime environments themselves have criminogenic properties. Similar to Clarke’s (1999) earlier acronym used to describe hot products (CRAVED), Newman and Clarke (2003) describe elements of information...
systems that are themselves conducive to crime using the acronym SCAREM. SCAREM stand for Stealth, Challenge, Anonymity, Reconnaissance, Escape, and Multiplicity. It is evident that many websites and online domains have the criminogenic qualities of SCAREM. For example, social networking websites provide not only fertile ground for cyberstalking to take place (e.g., public network pages provide viewers with complete anonymity), but also a wealth of potential victims (multiplicity). In this way, not only do web domains facilitate the convergence of victims and offenders within the network, but according to Newman and Clarke (2003), the nature of web domains encourages it through their criminogenic properties.

Lifestyle/Routine Activities and Cyberstalking

While scholars have been considering the applicability of lifestyle/routine activities theory to cybercrime victimization, there have been few attempts to apply the theory to cybercrimes, and none focused upon cyberstalking. A review of the cybercrimes literature turned up only four empirical studies utilizing the theory to explain cybercrime victimization. These four studies will be discussed below.

*Empirical Tests of Lifestyle/Routine Activities Theory in Cyberspace*

Although lifestyle/routine activities theory has been used by researchers to examine risk factors associated with college student victimization, including stalking, only four studies have utilized the perspective to explain the cybercrime victimization of college students, and none of these four explores cyberstalking victimization (Bossler & Holt, 2009; Choi, 2008; Holt & Bossler, 2009; Marcum, 2009). Each of these four studies will be discussed below and are summarized in Table 2.2.

Choi (2008) used lifestyle-exposure theory and routine activities theory to explain computer crime victimization (i.e., computer virus infection) among a sample of 204 college
students at a small liberal arts college in Pennsylvania. The author adapted the concept of lifestyle to online realms by asking students about their activities while online. Online lifestyles were broken down into three categories: vocational and leisure activities (scale composed of indicators such as frequency of sending emails), risky leisure activities (scale composed of indicators such as frequency of downloading materials while online), and risky vocational activities (scale with indicators such as frequency of opening email attachments). Of the three routine activity concepts, the author did not address motivated offenders or suitable targets, instead concentrating solely on the concept of guardianship. Guardianship was conceived of as digital guardianship and was measured using two sets of three-item scales (i.e., one scale tapping number of security programs, and one scale tapping duration of having security programs). The details related to Choi’s (2008) operationalization of key concepts are important because this may have been the first attempt to operationalize these concepts into a cyber-relevant form. The author reported that, consistent with expectations, those persons engaging in riskier online lifestyles were more likely to contract computer viruses, as were those who neglected their computer security. Additionally, those individuals with tighter online security (higher digital guardianship) were less likely to be victims of computer viruses.

Holt and Bossler’s (2009) study of online harassment is the second study to apply lifestyle/routine activities theory to cybervictimization. The authors used a self-report survey methodology to gather information from college students (N = 578) regarding their patterns of internet use (e.g., skill level, shopping) and information about their experiences online (e.g., harassment). Like Choi’s (2008) research, Holt and Bossler emphasized estimating the effects of online guardianship (e.g., use of anti-virus software, firewalls), and did not address the role of motivated offenders, and addressed target suitability only indirectly. Target suitability was
measured with proxies, specifically gender and age. Exposure to risk was measured through the questions asking about computer usage. For instance, owning a computer, the amount of time spent online, use of Myspace, instant messengers, and chat rooms all indicate an added amount of exposure to risk that otherwise would not exist offline. The authors reported only mild support for lifestyle/routine activities theory in this context. Online routine activities did not exhibit statistically significant effects on harassment victimization, nor did general online exposure or guardianship. However, spending time participating in computer-related deviance (i.e., pirating media, viewing pornography, hacking) did increase one’s odds of online victimization. Additionally, having friends involved in computer deviance increased the odds of harassment.

Bossler and Holt (2009) examined the malware infection experienced by college students in the course of their online activities, and specifically whether the student lost data as a result of the malware infection. The authors concentrated primarily on the guardianship element of routine activities theory, in addition to measuring a number of specific online routines (e.g., playing video games, visiting chat rooms, downloading files), and participation in online deviance (i.e., pirating software, hacking). In estimating the effect of guardianship in preventing cybervictimization, the authors operationalized the concept into a trifecta of guardianship: personal guardianship (i.e., computer proficiency, protecting passwords), physical guardianship (e.g., using anti-virus software, hardware firewalls), and social guardianship (i.e., friends pirating media, friends pirating software). The results of this study indicate that guardianship does not protect individuals from losing data due to malware infections as expected. To the contrary, social guardianship (i.e., deviant peers) increased the likelihood that students would be victimized. Further, the online deviant behaviors of students, particularly pirating media,
increased their likelihood of losing data due to a malware infection. Although the authors argue that this study provides support for the application of routine activities theory to cyberspace environments, it seems to provide more support for the lifestyle-exposure elements of lifestyle/routine activities theory (i.e., deviance, deviant peers).

Marcum (2009)’s study is the fourth in which routine activity theory has been applied to college student victimization. The author administered a self-report survey to freshman college students at a mid-sized university in the northeast in order to examine the nature of their internet use, especially as it affected their online victimization. Online victimization, the primary dependent variable, included online harassment, unwanted exposure to sexual material, and solicitation for sex. Marcum’s (2009) study advanced the use of routine activities in cyberspace by measuring three of the core concepts of the theory (exposure to motivated offenders, target attractiveness, and guardianship). Exposure was measured by time spent online and the nature of online activities. Target attractiveness was conceptualized as actions taken on the part of the respondent that may have made them a more attractive target, such as providing personal information to online contacts. Guardianship was measured in ways similar to those of Choi (2008) and Holt and Bossler (2009) by asking respondents about their software protection, but also asking whether they physically had their internet time restricted by a guardian, and whether they were monitored (by a guardian) while online. Marcum’s (2009) study consisted of two sets of analyses: one retrospective, asking students about their experiences as high school seniors, and one contemporary, asking respondents (as college freshmen) about their current experiences online. Only this latter analysis will be discussed and presented in Table 2.2. Those findings
<table>
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<th>Supported Lifestyle/Routine Activity Concepts and Effect on Cyber-victimization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choi (2008)</td>
<td>Stratified random sample of 204 college students from nine general education classes at a college in Pennsylvania</td>
<td>Computer virus infection</td>
<td>Number of computer security software programs and duration of the presence of security programs decreased likelihood of victimization; time spent online, and engaging in online delinquency (e.g. piracy) increased chances of victimization</td>
<td>Online lifestyle (+) Digital guardianship (-)</td>
</tr>
<tr>
<td>Bossler and Holt (2009)</td>
<td>Convenience sample of 570 college students from a single southeastern university</td>
<td>Data loss due to malware infection</td>
<td>Pirating media, friends viewing pornography online, being female, and being employed increased likelihood of victimization</td>
<td>Risky or deviant online lifestyle (+) Social guardianship (i.e., deviant peers) (+)</td>
</tr>
<tr>
<td>Holt and Bossler (2009)</td>
<td>578 college students from a single southeastern university</td>
<td>Online harassment</td>
<td>Using chatrooms, engaging in computer hacking, friends’ deviance, and being female increased likelihood of victimization</td>
<td>Risky or deviant online lifestyle (+)</td>
</tr>
<tr>
<td>Marcum (2009)</td>
<td>Nonprobability sample of 483 college freshmen at a mid-sized university in the northeast</td>
<td>Online harassment: Unwanted exposure to sexual material Solicitation of sex online</td>
<td>Online harassment: communicating with others online, planning travel online, being female, enjoy spending time with friends, and being nagged by parents increased likelihood of victimization; sharing thoughts and feelings with friends decreased likelihood of victimization. Exposure to sexual material: communicating with others online, having a parent in the room during internet use,</td>
<td>Online harassment: Exposure (+) Lack of guardianship (+) Exposure to sexual material: Guardianship (+)</td>
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<tr>
<td>Authors (year published)</td>
<td>Sample</td>
<td>Dependent Variable(s)</td>
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<td>Marcum (2009) continued</td>
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<td>having someone else in the room during internet use, and having internet privileges revoked all increased likelihood of victimization.</td>
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<tr>
<td></td>
<td></td>
<td>Solicitation of sex:</td>
<td>Exposure (+) Solicitation of sex online: Guardianship (+)</td>
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</table>

relevant to routine activities theory and its applicability to cyberspace yielded some conflicting effects. For instance, exposure and lack of guardianship both increased victimization risk for the online harassment dependent variable, but the presence of capable guardianship actually increased risk of receiving unwanted sexual materials. Regarding solicitation of sex, online guardianship again yielded unexpected results by increasing victimization risk. Exposure also increased risk for solicitation of sex.

Taken together, the Choi (2008), Holt and Bossler (2009), Bossler and Holt (2009), and Marcum (2009) studies provide some preliminary support regarding the utility of lifestyle/routine activities theory in explaining online victimization, but more work is needed with respect to measuring key theoretical concepts. As Table 2.2 illustrates, the effects of exposure and guardianship are inconsistent across these four studies, and the other elements of routine activity theory (e.g., suitable targets) were either not measured or had no effect on victimization. Additional work in the area is needed to sort out the conflicting effects of the lifestyle/routine activity variables, and measures of specific online lifestyles will help to flesh out the effects of different lifestyles on victimization. Of course, these differences may be attributable to the different dependent variables of interest across these studies as well as differences in operationalization and measurement of the key theoretical concepts.

**CURRENT FOCUS**

The purpose of the current study is (1) to estimate the extent of cyberstalking amongst a random sample of college undergraduates at a large urban university in the Midwest, and (2) to employ the lifestyle/routine activities perspective in an effort to better understand the correlates

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19 Marcum (2009) has pointed out that the unexpected effects of guardianship on victimization may have been an artifact of question wording. Specifically, restrictions on internet use or presence of guardians during online routine activities may have been a consequence of previous online victimization and not a precursor to online victimization.
of this type of victimization. To this end, each of the lifestyle/routine activities concepts (exposure, proximity, target attractiveness, and guardianship), which are known indicators of college student victimization, have been adapted for operationalization within an online environment. Measures of online exposure, online proximity, online target attractiveness, and online guardianship have been constructed to test their effects on the cyberstalking victimization of college students.

Just as students may expose themselves to risky situations or come into physical proximity with motivated offenders in offline environments, they may also do so while online. For instance, the amount of time spent online engaged in various activities may be a measure of online exposure. Likewise, allowing strangers access to personal information online (e.g., adding strangers as “friends” to one’s online social network) may affect one’s likelihood of cyberstalking victimization via online proximity. Examples of online target attractiveness may be posting revealing information online such as photos, videos, or interests, and online guardianship may involve target hardening (e.g., restricting access to personal information). Other known correlates of victimization, online deviance and low self-control, will also be assessed for their role in influencing cyberstalking victimization.

There is clearly a need for such an analysis considering that (1) so much of past work into cyberstalking has been atheoretical and (2) so little is known about lifestyles and routine activities as risk factors for cyberstalking victimization. Based on Holt and Bossler’s (2009) work, there appears to be little support for the perspective, save the positive effect of online delinquency on victimization (Bossler & Holt, 2009). However, the authors’ measures of exposure and proximity were not identified, and they did not take low self-control into consideration. This dissertation will expand upon past work and address issues which have not
been fully explored. For instance, no study to date has considered a full lifestyle/routine activity model in the context of cyberstalking victimization while also taking into account the effects of delinquency and low self-control on victimization. Indeed, no other study of cyberstalking victimization has considered the role of self-control in precipitating victimization. Therefore, the current will fill these two gaps in the literature by addressing the role of low self-control and at the same time exploring all of the lifestyle/routine activity concepts simultaneously. In doing so, it should be possible to identify risk factors for victimization. Knowing what places individuals at risk of cyberstalking victimization will be useful in crafting strategies for reducing cyberstalking opportunities and consequently, the number of cyberstalking victims.
Chapter 3

RESEARCH STRATEGY

As stated previously, the purpose of this dissertation is threefold: (1) to estimate the extent of cyberstalking victimization among a sample of college students from a large urban university in the Midwest; (2) to utilize the lifestyle-exposure and routine activity theory perspectives to determine the correlates and risk factors for cyberstalking victimization (i.e., in terms of lifestyles and routine activities of college students); and (3) to assess whether the lifestyle/routine activities perspective can successfully be adapted to explain victimization in virtual environments. Since few empirical estimates of cyberstalking have been published and most of those rely heavily on nonprobability samples, the current study estimates of cyberstalking victimization will be an improvement over past work. These estimates will be derived from a more methodologically solid research design than what has been utilized in many previous studies. In addition, lifestyle/routine activity theory has not been applied to cybercrimes nearly to the extent that it has to other types of crime (e.g., personal, property), and thus far it has not been applied to the study of cyberstalking victimization. Doing so will help identify risk factors for cyberstalking victimization, and aid in crime prevention education and application aimed at reducing incidents of victimization. This theoretical approach has received considerable support in explaining place-based forms of crime (e.g., burglary), but there is much less certainty about its usefulness in explaining cybercrimes. The current study will therefore be among the first to address the issue of whether lifestyle/routine activities theory is restricted to explaining place-based forms of crime, or whether it has utility in explaining crimes in which traditional conceptions of place do not apply.
METHODS

The IRB Process and Obtaining Informed Consent

The Institutional Review Board (IRB) at the university is charged with reviewing proposals for research to ensure that standards of ethical conduct are maintained during research studies in which human subjects are involved. The current study received IRB approval in November, 2008. IRB procedures mandate that researchers obtain informed consent from research subjects prior to their participation in any study. To comply with this rule, consent was obtained by including an informed consent form at the beginning of the questionnaire. The form explained the purpose of the research study, the requirements and nature of participation (i.e., voluntary, anonymous), and provided information about the survey. The form also explained to participants that by proceeding with the survey, they were indicating their consent for their answers to be used in the current research study. The informed consent form can be found in Appendix 2.

Sampling Design

The data were collected from students at a large urban public university in the Midwest. The study population consisted of those students possessing the following characteristics: enrolled in spring quarter 2009, undergraduate, between the ages of 18 and 24, attending the school at any of the university’s campuses (i.e., the main campus, satellite campuses), and attending classes on a full-time basis. Once this group of students was identified, a simple random sample of 10,000 students out of a possible 16,592 was selected by the university registrar’s office. To draw these 10,000 students at random, seven numbers were arbitrarily chosen. Those students whose student ID number ended in one of those seven numbers were selected for inclusion, and this process continued until 10,000 students had been selected. The
student population was not sorted on any criterion, so the listing of sample members was completely random.

Data Collection

During April and May 2009, the sample of students was sent emails through the university registrar’s office inviting them to participate in a web-based survey. The survey was administered through a survey software tool called Zoomerang, which allows subscribers to design and host online surveys using their software and servers for a monthly fee. Students who decided to participate in the survey were instructed to visit the web link included in the invitation email, at which point they were taken to the online survey.

Three waves of invitation emails were sent out to the original group of 10,000 students over the course of approximately five weeks. A follow-up invitation was sent to the group after two weeks, and a third and final invite was sent after another two weeks. Following Dillman’s (2007) Tailored Design Method, the content of each email invitation was varied slightly across these three waves in an attempt to elicit a higher response rate from students. This method focuses on establishing trust, interest in the survey, reducing the perceived costs of participation, and increasing the perceived rewards of participation. This latter point was particularly delicate given IRB restrictions on providing benefits to respondents. In an effort to follow Dillman’s (2007) suggestions, the language of the email invitation was revised from wave to wave. For example, the final email invitation indicated that it would be the last time that the student would be requested to participate, and reiterated the importance of their participation in attaining an adequate number of usable surveys. These three invitation emails are provided in Appendix 3, 4, and 5.
Response Rate

Of the initial 10,000 students who were sent emails, 74 emails were returned as undeliverable (e.g., email address was not valid), making the sample size of invitees who could potentially participate in the study 9,926. The response rate across all three waves of invitations was 13.2%, resulting in 751 completed surveys and an additional 563 partially completed surveys. These partially completed surveys were in varying stages of completeness. For instance, some of the partials were designated as such because the respondent did not submit the survey properly (even though they may have answered all of the survey questions), and as a result were labeled as incomplete by the survey software. This scenario could have occurred if respondents reached the end of the survey and closed their web browser without clicking the “submit survey” tab. On the other end of the spectrum, there were other partially completed surveys that had virtually no data provided by the respondent. For instance, a respondent may have followed the web link to the survey, answered only the first question, and exited the survey. After these cases with significant amounts of missing data were removed from the sample (i.e., respondents only answered the first few questions), the sample size decreased to 1,252.

Removal of cases with additional missing data will be discussed below, which resulted in a final response rate for this analysis of 9.8% (n = 974/9,926). By conventional survey methodology standards, this is a quite low rate of participation; however, it is not unusual considering the population under study, the lack of incentives for respondents to participate, the mode of administration, and the generally high level of competition for “internet time” from spam emails, other internet surveys, university announcements, and the like. Couper (2000) has explained that in comparison to other modes of survey administration (e.g., mail, phone), web surveys often attain lower rates of participation (e.g., under 10% for single invitation surveys).
Further, in Dillman et al.’s (2009) comparison of response rates of mixed-mode surveys, the authors reported that response rates varied widely across mode of administration (mail, telephone, interactive voice response, Internet). For instance, the response rate for mail surveys was the highest at 75%, while the response rate for the web survey was the lowest at 12.7%. The response rate for the current study is therefore not surprising considering no incentives were provided to respondents (as they were in Dillman et al.’s study), and the generally low rates of participation in similar studies of comparable populations (e.g., Hilinski, 2009; Nobles et al., 2009).

Missing Data Issues

Potential missing data problems required deleting additional cases for which no data were provided by respondents on the dependent variables. Allison (2001) has suggested that cases with missing values may be treated with a variety of statistical techniques including listwise deletion, pairwise deletion, mean substitution, maximum likelihood estimation, multiple imputation, and others, but that none of these techniques are advisable for missing data on dependent variables (Allison, 2001; Little and Rubin, 2002). In the survey instrument used to gather data for the current study, many of the dependent variables appeared toward the end of the questionnaire, which unfortunately means that as cases were lost to attrition, the majority of the missing data were missing on the dependent variables. Following Allison’s advice (personal communication, July 10, 2009), cases were deleted that were missing data on the four cyberstalking victimization variables (the primary dependent variables) and the identity fraud victimization variable. By deleting these cases, an additional 278 cases were lost, making the final sample size 974. Accordingly, the final response rate for the following analysis is 9.8% (n = 974/9,926).
Sample Characteristics

The sample consisted of 974 undergraduate students attending school full time during spring of 2009. The sample had the following characteristics: a majority of respondents were female (61%), white (86%), and the mean age of respondents was 20.22 years. In addition, 93.9% of sample respondents indicated they were heterosexual/straight, and the majority of respondents were either single (42.2%) or in a serious/long-term dating relationship (40.2%); the remainder of respondents were casually dating (12.7%) or married/living with someone (4.5%). With respect to where students lived during the school year, most were living off-campus in non-university housing (46.7%), followed by on-campus housing (23.2%), in the home of a parent, guardian or relative (23.1%), or in off-campus university housing (7.1%). A majority of students lived with a student roommate (60.9%), and 8.5% lived alone. Fraternity or sorority members made up 12% of the sample, and university athletic team members made up 7.4%.

Table 3.1 provides select sample characteristics and population characteristics which were provided by the university registrar’s office. It is evident upon examining Table 3.1 that some demographic characteristics of the sample are quite different than the characteristics of the population from which it was drawn. In terms of gender, for instance, the population was comprised of 51.3% males and 48.7% females, but the final sample of students who participated in the study was 39% male and 61% female. In terms of age and race, the differences between the population and the sample are much less substantial. The sample is overrepresentative of whites, and the youngest members of the population (i.e., 18 - 21 year olds), and underrepresentative of blacks and those in the 22 - 24 age group. Those who identified themselves as Asian or Hispanic closely match their percentages in the university student population.
Table 3.1: Select Sample and Population Characteristics

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Sample Statistics</th>
<th>University Population Characteristics&lt;sup&gt;20&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage  N</td>
<td>Percentage  N</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>39% 379</td>
<td>51.3% 8,200</td>
</tr>
<tr>
<td>Female</td>
<td>61% 593</td>
<td>48.7% 7,786</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>7.7% 75</td>
<td>6.5% 1,053</td>
</tr>
<tr>
<td>19</td>
<td>25.9% 252</td>
<td>23.8% 3,805</td>
</tr>
<tr>
<td>20</td>
<td>27.1% 264</td>
<td>22.7% 3,639</td>
</tr>
<tr>
<td>21</td>
<td>21.7% 211</td>
<td>18.6% 2,979</td>
</tr>
<tr>
<td>22</td>
<td>13.1% 128</td>
<td>15.6% 2,495</td>
</tr>
<tr>
<td>23</td>
<td>2.9% 28</td>
<td>8.7% 1,403</td>
</tr>
<tr>
<td>24</td>
<td>1.6% 16</td>
<td>3.8% 612</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>86% 828</td>
<td>80.3% 12,830</td>
</tr>
<tr>
<td>Black</td>
<td>6% 58</td>
<td>8.9% 1,423</td>
</tr>
<tr>
<td>Asian</td>
<td>3.2% 31</td>
<td>3.4% 555</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.6% 15</td>
<td>1.4% 226</td>
</tr>
<tr>
<td>Other</td>
<td>3.2% 31</td>
<td>5.9% 952</td>
</tr>
</tbody>
</table>

Note: The mean age and (standard deviation) for the sample are 20.22 (s = 1.34) and for the larger university sample are 20.54 (s = 1.59).

Survey Instrument

Construction of the survey instrument began in the early months of 2007 and continued for more than two years following Dillman’s (2007) and Dillman, Smyth, and Christian’s (2008) Tailored Design Method. The final incident-based survey instrument is located in Appendix 6 and contains an individual-level questionnaire and an incident-level questionnaire. The surveys were designed to measure the extent of student victimization and to collect other relevant information such as demographics, lifestyles, and routine activity patterns. In terms of organization, the questionnaire was divided into three main parts: (1) demographics and lifestyle

<sup>20</sup> Since enrollment at the university is constantly changing, the characteristics of the population fluctuate on a daily basis. The population characteristics depicted in Table 3.1 provide a snapshot of how the population looked on May 18, 2009.
questions, (2) questions about online social network usage, and (3) questions pertaining to other online routine activities (e.g., website visitation) and victimization (i.e., cyberstalking experiences). The length of time it took to complete the survey varied from respondent to respondent, but in general should not have taken much longer than 15-25 minutes.

It is difficult to say exactly how many items the questionnaire contains because of skip patterns and contingency questions. The number of answers a respondent would be asked to provide depended upon how they answered previous questions, in particular those questions related to cyberstalking victimization. For instance, respondents who indicated they had been the recipient of unwanted sexual advances online on more than one occasion were asked to report how many different people made unwanted sexual advances toward them (i.e., 1-4 people, 5 or more people). The number of offenders reported by the respondent corresponded with the number of incident reports they were asked to fill out, up to five reports. These incident reports contained nine questions each, which asked respondents to disclose details of the incident such as how the respondent knew that person, how long they had known that person, and the consequences of incident.

Pilot Test

In the course of developing the survey instrument, a pilot test of the questionnaire and the survey software was conducted. During fall quarter 2007 (late November), the online survey was administered to a group of about 40 criminal justice students seeking master’s degrees at the university. There were two advantages of pilot testing the questionnaire on these students: first, they were not eligible for inclusion in the final sample; and second, they were (for the most part) recently undergraduates, so their interpretation of the questions and format of the survey should have closely approximated an “undergrad’s” perceptions. As part of the pilot test, the group was
divided into three subgroups; each student was assigned a different “role” to cover all possible stalking scenarios (e.g., repeatedly contacted, but not harassed, threatened, sexually harassed, targeted for identify theft). After the students had taken the questionnaire, each group met as a focus group with the author and the co-investigator to discuss their experiences with the survey content and administration. Based on feedback from these students, the questionnaire was further revised.

**Dependent Variables: Cyberstalking Victimization and Identity Fraud**

As noted above, cyberstalking victimization is the primary dependent variable. Cyberstalking victimization is defined as repeated pursuit (two or more occasions) of the victim by the perpetrator using electronic devices or the Internet. There are four types of the pursuit behaviors that each represent a different form of cyberstalking victimization. These elements can occur together, or singly, but if any or all of them have taken place, a cyberstalking victimization incident has occurred. Each of these four victimization indicators was measured as a dichotomous variable (0 = No, 1 = Yes), representing whether or not the respondent had ever (in their lifetime) experienced any one of the four types of cyberstalking victimization. These four types of cyberstalking victimization include: (1) having been contacted repeatedly after asking the other party to stop, (2) having been repeatedly harassed or annoyed, (3) having repeatedly been the recipient of unwanted sexual advances, or (4) having been repeatedly threatened with violence. In addition, previous research (e.g., Bocij, 2003; Jerin & Dolinsky, 2001) has suggested that identity fraud victimization, such as having one’s identity assumed online, is a form of cyberstalking. However, identity fraud is qualitatively different than these four forms of cyberstalking because it is not necessarily a crime of repeated pursuit. For this reason, identity fraud is measured in the current study, but is not included as one of the pursuit
behaviors comprising cyberstalking victimization. Appendix 7 lists the survey items used to construct each dependent, independent, and control variable.

The possibility of creating a multi-item cyberstalking victimization scale was explored. A reliability analysis that included all four measures yielded an unacceptably low Cronbach’s alpha (0.473). In fact, no combination of the variables resulted in an acceptable reliability statistic\(^{21}\). This result suggests that while each of these four pursuit behaviors may be labeled *cyberstalking*, they are indicators of four distinct types of pursuit by the perpetrator. A composite measure of cyberstalking based on the four types of cyberstalking victimization was created, indicating whether or not the respondent had ever\(^{22}\) been a victim of any of the four types of cyberstalking. This measure was coded as a dichotomous variable (0 = Never experienced cyberstalking, 1 = experienced at least one type of cyberstalking). For instance, if the respondent indicated they had been the recipient of only unwanted sexual advances, they would be assigned a value of 1; likewise, someone who had experienced all four types of victimization would also be assigned a value of 1; only those respondents who did not experience any of the four types of cyberstalking were assigned a score of 0. Table 3.2 provides the descriptive statistics for these six dependent variables.

Based on responses to the victimization survey, measures of each of the lifestyle/routine activities concepts (online exposure, online guardianship, online proximity, and online target attractiveness) were constructed. The operationalization of online delinquency and low self-control will also be discussed.

\(^{21}\) Typically, a Cronbach’s alpha over 0.60 would indicate favorable conditions for scale construction.

\(^{22}\) Estimates generated in the current study will measure lifetime prevalence of victimization.
<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Scale</th>
<th>Mean</th>
<th>S.D.</th>
<th>Range</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single-Item Measures of Cyberstalking Victimization and Identity Fraud</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contacted</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.23</td>
<td>0.42</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Harassed</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.20</td>
<td>0.40</td>
<td>0 – 1</td>
<td>964</td>
</tr>
<tr>
<td>Sexual Advances</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.14</td>
<td>0.34</td>
<td>0 – 1</td>
<td>953</td>
</tr>
<tr>
<td>Violently Threatened</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.04</td>
<td>0.20</td>
<td>0 – 1</td>
<td>942</td>
</tr>
<tr>
<td>Identity Fraud</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.11</td>
<td>0.31</td>
<td>0 – 1</td>
<td>943</td>
</tr>
<tr>
<td><strong>Four-Item Composite Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyberstalking</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.41</td>
<td>0.49</td>
<td>0 – 1</td>
<td>974</td>
</tr>
</tbody>
</table>

**Independent Variables: Measures of Online Lifestyles/Routine Activities**

*Online Exposure*

Traditionally, the concept of exposure has been measured by examining the nonhousehold activities of study participants (e.g., the number of nights out) under the assumption that more time out of the home equates to greater exposure to risk of victimization (e.g., Cohen et al., 1981; Miethe & Meier, 1994). In studies focused upon college students, exposure has been operationalized in terms of public behaviors and in terms of presence in risky environments (i.e., presence of alcohol or drugs) (Fisher, et al., 2002; Mustaine & Tewksbury, 1999). A similar measure for online exposure is problematic as one can just as easily engage in online activities at home as they can anywhere else. However, the main idea of increased exposure to risk can be adapted to fit online environments. The concept of online exposure was operationalized using six of the survey questions asking respondents about how much time they spend online and what online activities they participate in (i.e., social networks, blogs) that might
reveal information about them. These six measures of online exposure include: (1) how much
time the respondent spends online each day (measured as a count of hours), (2) how many social
networks/blogs the respondent has (measured as a count of SN), (3) how many times a week the
respondent updates the information on their social network/blog (measured as a count of
updates), (4) how many hours a day the respondent spends on their social network/blog
(measured as a count of hours), (5) how many photos the respondent has posted on their social
network/blog (measured as a count of photos), and (6) whether they regularly use AOL Instant
Messenger (measured as a dichotomy, 0 = No, 1 = Yes). Descriptive statistics for the online
exposure variables are provided in Table 3.3.

Online Guardianship

Prior research has often focused upon two dimensions of guardianship: the physical and
the social (e.g., Mustaine & Tewksbury, 1998; Newman, 1996; Wilcox Rountree & Land, 1996;
Sampson & Wooldredge, 1987; Tewksbury & Mustaine, 2003). The physical dimension of
guardianship has been measured in previous work by examining various aspects of target
hardening such as locking doors, the presence of dogs, and police patrols. These precautions are
unlikely to have any effect on cybervictimization; however, the idea that guardianship
discourages victimization can be adapted for use in online environments. Choi’s (2008) and Holt
and Bossler’s (2009) studies of college student cybervictimization operationalized guardianship
in terms of students’ security features on their computer (e.g., presence of firewalls, anti-virus
software). Unfortunately, measures of the presence of firewalls and security programs are not
available in the current data. The guardianship measures that are available may be more
applicable to cyberstalking victimization because firewalls and security programs for the most
part do not protect against repeated contact or pursuit behaviors (i.e., they are designed to protect
against malicious software, and not routine online activities). In the current study, the physical aspect of guardianship is measured by two variables: (1) whether the respondent has their online social network/blog account set to private or limited access, and (2) whether they use or have used a profile tracker that keeps track of who views their account. Each of these two items is measured as a dichotomy (0 = No, 1 = Yes). These measures are potentially limited in that they are both premised on the respondent currently or previously using a social network or blog account. However, 96.3% of the sample had a social network or blog at the time of the survey or prior to the survey, so these measures of guardianship are applicable to the majority of the sample. Table 3.3 provides descriptive statistics for the online guardianship variables.

**Online Proximity**

The proximity to crime element of routine activities theory represents the potential target’s physical proximity to motivated offenders. Prior work examining college students’ victimization has operationalized this theoretical concept in terms of routine activities that bring potential targets into physical proximity with motivated offenders (e.g., Cass, 2007). Because cybercrimes do not involve the physical convergence of victims and offenders, this concept needs to be adapted to fit virtual environments. As Eck and Clarke (2003) have pointed out, victims and offenders need not necessarily converge in physical space. There are a number of crimes (e.g., mail bombings, harassing phone calls, health care fraud) in which victims and offenders come together through a network. While the authors do not specifically address the idea of proximity to motivated offenders vis-à-vis the network, it seems reasonable that proximity may be adapted to include greater proximity to offenders via the network. This is the approach taken in the current study to operationalize online proximity. Accordingly, three measures of online proximity have been developed: (1) whether the respondent has ever added
<table>
<thead>
<tr>
<th>Online Lifestyle/Routine Activities Variables</th>
<th>Scale</th>
<th>Mean</th>
<th>s</th>
<th>Range</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online Exposure Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Online</td>
<td>(Time in hours per day)</td>
<td>3.93</td>
<td>3.93</td>
<td>1 – 16</td>
<td>969</td>
</tr>
<tr>
<td>Number of Social Networks (SN)</td>
<td>(Number of SNs)</td>
<td>2.60</td>
<td>1.70</td>
<td>1 – 15</td>
<td>901</td>
</tr>
<tr>
<td>Number of SN Updates</td>
<td>(Number of updates per week)</td>
<td>2.41</td>
<td>3.85</td>
<td>0 – 25</td>
<td>906</td>
</tr>
<tr>
<td>Time on Social Network</td>
<td>(Number of hours per day)</td>
<td>1.58</td>
<td>1.72</td>
<td>1 – 16</td>
<td>904</td>
</tr>
<tr>
<td>Number Photos on SN</td>
<td>(Number of photos)</td>
<td>350.37</td>
<td>466.76</td>
<td>0 – 5000</td>
<td>880</td>
</tr>
<tr>
<td>Use AOL Instant Messenger</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.35</td>
<td>0.48</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td><strong>Online Guardianship Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN Set to Private</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.82</td>
<td>0.38</td>
<td>0 – 1</td>
<td>906</td>
</tr>
<tr>
<td>Use a Profile Tracker</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.12</td>
<td>0.33</td>
<td>0 – 1</td>
<td>907</td>
</tr>
<tr>
<td><strong>Online Proximity Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Added Stranger as Friend</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.72</td>
<td>0.45</td>
<td>0 – 1</td>
<td>907</td>
</tr>
<tr>
<td>Number of Friends on SN</td>
<td>(Number of friends)</td>
<td>513.50</td>
<td>524.73</td>
<td>7 – 5000</td>
<td>887</td>
</tr>
<tr>
<td>Friend Service</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.03</td>
<td>0.18</td>
<td>0 – 1</td>
<td>903</td>
</tr>
<tr>
<td><strong>Online Target Attractiveness Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Name</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.71</td>
<td>0.45</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Relationship Status</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.77</td>
<td>0.42</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.67</td>
<td>0.47</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Instant Messenger ID</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.37</td>
<td>0.48</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Email Address</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.65</td>
<td>0.47</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Other SN Addresses</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.09</td>
<td>0.28</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Interests/Activities</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.74</td>
<td>0.44</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Photos</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.88</td>
<td>0.32</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Videos</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.36</td>
<td>0.48</td>
<td>0 – 1</td>
<td>974</td>
</tr>
<tr>
<td>Composite Measure</td>
<td>(Mean target attractiveness)</td>
<td>0.58</td>
<td>0.23</td>
<td>0 – 1</td>
<td>974</td>
</tr>
</tbody>
</table>
someone as “friend” on their online social network whom they didn’t know (i.e., a stranger), (2) how many “friends” in total the respondent has across all of their online social networks, and (3) whether the respondent has ever joined an online service that assisted them in acquiring new “friends” for their online social network. Table 3.3 presents the descriptive statistics for the online proximity variables.

**Online Target Attractiveness**

According to Cohen et al. (1981: 508), target attractiveness is “the material or symbolic desirability of persons or property targets to potential offenders, as well as the perceived inertia of a target against illegal treatment.” This means that a target might appear attractive to a potential offender if it has some value to the offender or if it easily targeted (e.g., the weight of something makes it easy to remove, a person does not have the capacity to resist an attack). As noted above, Clarke (1999) has also argued that hot products, or those products that are repeatedly targeted, are CRAVED (i.e., Concealable, Removable, Available, Valuable, Enjoyable, and Disposable). Newman and Clarke (2003) have further argued that information such as social security numbers or credit card numbers have CRAVED attributes. Depending upon the crime, different types of information may be attractive targets for offenders. In the context of college student victimization, past works have operationalized target attractiveness as the possession of cash as disposable income (Fisher et al., 1998). These are not ideal measures of online target attractiveness, as a would-be stalker is not likely to have any knowledge of a target’s material wealth. In the case of cyberstalking, any information that facilitates the pursuit of the victim (e.g., email addresses, phone numbers) or discloses details about the potential victim (e.g., sexual orientation, photos) may make the target more attractive, at least to stranger stalkers. The current study utilizes nine indicators of target attractiveness based on the type of
information respondents may have posted/provided on their online profiles (i.e., online social network, blog) including: (1) their full name, (2) their relationship status, (3) their sexual orientation, (4) their instant messenger ID, (5) their email address, (6) address for other social network/blog sites, (7) interests and/or activities, (8) photos, and (9) videos. Each of these nine items was measured as a dichotomy (0 = No, 1 = Yes). A composite measure of online target attractiveness was created based upon the respondent’s mean level of attractiveness. To compensate for any missing values on these nine indicators, only respondents who answered four of the nine questions were included in the calculation of the composite variable. Table 3.3 provides descriptive statistics for the online target attractiveness variables.

**Online Deviance**

A strong relationship between deviant behavior and/or delinquency and victimization is consistently reported in studies of victimization (e.g., Lauritsen, Laub & Sampson, 1992; Lauritsen, Sampson & Laub, 1991; Sampson & Lauritsen, 1990). In the present study, online deviance is measured with eight items representing different deviant acts. Each of the eight items was measured as a dichotomy (0 = No, 1 = Yes). Respondents were asked if they have participated in any of the following activities: (1) repeatedly contacted or attempted to contact someone online after they asked/told you to stop, (2) repeatedly harassed or annoyed someone online after they asked/told you to stop, (3) repeatedly made unwanted sexual advances toward someone, (4) repeatedly spoken to someone in a violent manner or threatened to physically harm them online after they asked/told you to stop, (5) attempted to hack into someone's online social network account, (6) downloaded music or movies illegally, (7) sent sexually explicit images to someone online or through text messaging, and (8) received sexually explicit images from
someone online or through text messaging. Table 3.4 provides the descriptive statistics for the online deviance variables.

Table 3.4: Online Deviance Variables

<table>
<thead>
<tr>
<th>Deviance Variables</th>
<th>Scale</th>
<th>Mean</th>
<th>s</th>
<th>Range</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacted someone</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.03</td>
<td>0.17</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Harassed someone</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.02</td>
<td>0.15</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Unwanted Sexual Advances</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.01</td>
<td>0.08</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Threatened someone</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.01</td>
<td>0.10</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Hack</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.13</td>
<td>0.34</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Illegal downloads</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.65</td>
<td>0.47</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Sent explicit images</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.24</td>
<td>0.43</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td>Received explicit images</td>
<td>(0 = No, 1 = Yes)</td>
<td>0.38</td>
<td>0.48</td>
<td>0 – 1</td>
<td>791</td>
</tr>
<tr>
<td><strong>Eight-Item Composite Measure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Deviance</td>
<td>(Mean level of deviance)</td>
<td>0.19</td>
<td>0.18</td>
<td>0 – 1</td>
<td>791</td>
</tr>
</tbody>
</table>

Similar to the online target attractiveness measure, a composite measure of the respondent’s mean online deviance was created. Once again, to compensate for any missing values on these indicators of online deviance, only respondents who answered four of the eight questions pertaining to deviance were included in the calculation of the composite variable. Descriptive statistics for this composite measure appear in Table 3.4.

**Low Self-Control**

According to Gottfredson and Hirschi (1990), once the effects of low self-control are considered in predicting crime and other negative life outcomes (e.g., deviance, victimization),
other predictors in the statistical models become spurious. For example, target attractiveness may be a robust predictor of cyberstalking victimization if the role of low self-control is not considered; however, the elements of target attractiveness that make one more likely to be victimized can really be traced back to the individual’s self-control. In this scenario, low self-control may affect one’s likelihood to post sexually provocative photos online or describe drug and drinking habits on their blog (behaviors that may signal an attractive target to potential offenders). Therefore, once this underlying trait is taken into account, target attractiveness should no longer be as robust a predictor of victimization. For these reasons, it is important to consider the role of low self-control in explaining cyberstalking victimization.

The current study utilizes a single measure of low self-control based upon four survey items. Respondents were asked how strongly they agreed with statements measuring a propensity toward low self-control, including “I consider myself to be argumentative,” “I have trouble controlling my temper,” “I often confront people when they make me upset,” and “I consider myself to be a risk-taker.” These four statements were rated by respondents with values on the items ranging from 1 (“strongly agree”) to 4 (“strongly disagree”), so higher scores indicate a higher propensity toward self-control. These scales were reversed to reflect lower self-control at higher scores (i.e., 4 = low self-control). Descriptive statistics for the self-control survey items appear in Table 3.5. These four items were combined into a single measure of low self-control with a Cronbach’s α of 0.55. This alpha is somewhat low by conventional standards for scale construction and presents a potential limitation to the study’s findings related to the effects of low self-control, but if the measure performs as expected it can be thought of as conservative estimation of the effects of low self-control on cyberstalking victimization.
Another possible limitation exists in the measures used to construct this measure of low self-control. Namely, the standard for measuring low self-control was set by Grasmick, Tittle, Bursik, and Arneklev (1993) in their assessment of Gottfredson and Hirschi’s (1990) general theory of crime. The authors utilized a 24-item scale to measure this latent trait. This scale was not utilized in current study, although many of the core concepts are represented in the self-control survey items (i.e., risk-taking, low tolerance for frustration). This presents a potential limitation to study findings; however, this is not a fatal shortcoming, as other researchers (e.g., Schreck et al., 2002; Schreck et al., 2006) have measured low self-control without utilizing Grasmick et al.’s scale. Further, Pratt and Cullen (2000: 952), upon conducting a meta analysis of studies estimating the effects of low self-control on offending concluded that self-control was one of the most robust predictors of crime, and that “…the effect size was not significantly affected by whether self-control was measured by an attitudinal or behavioral measure or
whether it was measured by Grasmick et al.’s (1993) scale or by scales developed by other scholars.” The authors argue that “This latter finding is important because it suggests that self-control’s effects are sufficiently robust that they are not sensitive to different ways in which self-control is operationalized,” (Pratt & Cullen, 2000: 952).

**Control Variables**

**Demographics**

Previous victimization research has identified certain demographic characteristics as potentially important predictors of victimization (e.g., Fisher et al., 1998; Hindelang et al., 1978; Miethe & Meier, 1994; Rand, 2008; Sampson, 1987). In line with previous research, the following demographic characteristics will be included as control variables: race (0 = white, 1 = nonwhite), sex (0 = male, 1 = female), and respondent’s age (measured in years). Relationship status will also be included as a control variable in the analysis (0 = not single, 1 = single).

**Deviant Peers**

It is also necessary to control for the influence of peer associations in the form of “delinquent” or “deviant” friends as previous research suggests that these associations may represent proximity to motivated offenders as well as less-than-capable guardianship (e.g., Jensen & Brownfield, 1986; Lauritsen et al., 1991; Schreck et al., 2006; Wilcox, Tillyer & Fisher, 2009). A measure of deviant peers was created based on three survey responses to the following survey item: “How likely do you think it is a friend or acquaintance will use the information on your social network/blog to do any of the following?” Respondents rated the likeliness of three forms of online pursuit by peers including: harassment, stalking, and threats of physical harm; responses ranged from not likely at all (1) to very likely (10). A single measure representing these three responses yielded a Cronbach’s $\alpha$ of 0.80.
Risky Offline Activities

A large body of empirical evidence points to risky lifestyles and routine activities as correlates of a variety of types of offline victimization (e.g., Fisher et al., 1998; Jensen & Brownfield, 1986; Henson et al., in press; Lasley, 1989; Miethe, Stafford, & Sloane, 1990; Mustaine & Tewksbury, 1998; Sampson & Lauritsen, 1990; Sampson & Wooldredge, 1987). However, it is unclear whether these types of risky offline activities increase one’s chances of online victimization. To control for the effects of risky offline activities, a measure based on three survey items was created. These three survey items appear in Appendix 7, and measure the students’ frequency of party attendance, bar and night club patronage, and alcohol consumption. The Cronbach’s $\alpha$ for these three items is 0.67.

STATISTICAL TECHNIQUES

Bivariate Analyses

Bivariate relationships between the independent variables and between the independent and dependent variables will be calculated and presented in the next chapter. Two types of statistics will be used to represent the strength and direction of the relationships between variables: point biserial correlation coefficients ($r_{pb}$) and Phi coefficients ($\varphi$). The point biserial correlation coefficient is essentially a special case of Pearson’s $r$ in which one of the variables in the relationship is nominal and dichotomous and the other is continuous. Phi coefficients are generated using chi-square and are appropriate to use as a measure of association when both variables in the bivariate relationship are nominal and dichotomous. In the case of both statistics, their interpretation is the same as the Pearson product-moment correlation coefficient (Pearson’s $r$) (Field, 2005).
Multivariate Analyses

As noted, each of the four cyberstalking victimization variables (contact, harass, sexual advances, and threats of violence) have been measured as dichotomies (0 = No, 1 = Yes). Identity fraud, and the overall cyberstalking victimization measure, which simply measures whether the respondent answered affirmatively to any of the four cyberstalking questions are also dichotomous (0 = No, 1 = Yes). The dichotomous nature of the dependent variables makes binary logistic regression the appropriate multivariate technique to explore the relationships between the lifestyle/routine activity variables and the cyberstalking victimization variables (Pampel, 2000). According to Pampel (2000: 18), this technique can be described as “regression on a dependent variable that transforms nonlinear relationships into linear relationships.” After estimating logistic regression models, it is customary to report model fit statistics (i.e., -2 log likelihood, model chi square), as well as log-odds (B), Exp(B) (odds ratios), and standard errors. In logistic regression, the coefficients are represented by the (B) statistic, and characterize the nature of the relationship between the independent variables and the dependent variable. Since these coefficients are presented as log-odds, their interpretation is not intuitive. For that reason, odds ratios, which are easier to interpret, are calculated and reported. Coefficients with p-values less than 0.05 will be considered statistically significant, meaning that the null hypothesis can be rejected at the alpha 0.05 level.

SUMMARY

This chapter has explained the methodology for selecting the study’s sample, described the sample’s characteristics, laid out how the lifestyle/routine activities theoretical concepts were adapted to an online environment, and provided descriptive statistics for the independent and dependent variables. Chapter 4 will present the results of the statistical analyses and Chapter 5
will conclude the dissertation with a discussion of the results, implications for crime prevention, and limitations of the study.
Chapter 4

RESULTS

This chapter presents three sets of results. First, the extent of cyberstalking victimization among members of the sample is reported. Lifetime prevalence of victimization and characteristics of victims are reported for each type of cyberstalking victimization, identity fraud victimization, and the composite cyberstalking victimization measure. Second, bivariate analyses and results are briefly discussed. Correlations between the independent and dependent variables were initially calculated to explore the nature of these relationships and to inform the multivariate analyses. Third, binary logistic regression models that estimate the effects of the independent variables—online lifestyle/routine activities, online delinquency, and low self-control—on each of the dependent variables are presented and discussed. These dependent variables are: unwanted contact, harassment, unwanted sexual advances, threats of violence, identity fraud, and overall cyberstalking victimization.

EXTENT OF VICTIMIZATION

Lifetime Prevalence of Victimization by Types of Pursuit

Figure 4.1 illustrates the lifetime prevalence of cyberstalking victimization across the four types of pursuit behaviors (i.e., contact, harassment, sexual advances, violent threats), identity fraud, and overall cyberstalking. Among sample members, the prevalence of cyberstalking victimization was 40.8% ($N = 397$). Across types of online pursuit behaviors, repeated contact was the most frequent method of cyberstalking, with over 23.3% ($N = 227$) of the sample having such an experience. The next most frequent method of cyberstalking experienced by respondents was repeated harassment, with 20.1% ($N = 196$) of the sample.
experiencing online harassment, followed by unwanted sexual advances at 13.9% \((N = 132)\). Identity fraud (having someone else pose as the victim online) was experienced by 10.6% \((N = 100)\) of respondents, and threats of violence through electronic communications was experienced by the fewest respondents with 4.4% \((N = 41)\) of the sample being threatened online.

**Lifetime Prevalence of Victimization by Victim Characteristics and Types of Online Victimization**

Demographic characteristics have long been identified as consistent correlates of a variety of types of victimization (e.g., Cohen et al., 1981; Hindelang et al., 1978; Rand, 2008; Wilcox et al., 2009). Therefore, demographic characteristics such as sex, age, race, and relationship status are considered in current estimates of the extent of victimization amongst members of the sample. Table 4.1 presents the extent of victimization broken down by: sex, age (under 21/21 and over) race (white/nonwhite), and relationship status (single/non-single). In addition, extent of victimization among certain groups (e.g., white females, single males) is reported in Table 4.2.
Sex

Table 4.1 summarizes the extent of cyberstalking victimization among males and females in the sample across types of cyberstalking victimization and identity fraud. A higher percentage of sample females were victimized compared to sample males for unwanted contact, harassment, sexual advances, and overall cyberstalking, and as Table 4.1 illustrates, each of these differences in victimization between males and females is statistically significant. For the composite cyberstalking measure, 46.3% of females were cyberstalked compared to 32.1% of males: $\chi^2 (1, N = 972) = 19.27, p < 0.01$. For unwanted contact, 27.9% of females were victimized compared to 16.1% of male respondents: $\chi^2 (1, N = 972) = 18.12, p < 0.01$. Regarding harassment, 25.2% of females were victimized compared to 12.9% of males: $\chi^2 (1, N = 962) = 21.37, p < 0.01$. For sexual advances, 18% of female respondents were victimized, while 7.5% of males had such an experience: $\chi^2 (1, N = 951) = 21.08, p < 0.01$. Slightly more males than females were threatened with violence through electronic communications (5.4% compared to 3.7%), but this 1.7% difference in victimization between males and females is not statistically significant: $\chi^2 (1, N = 940) = 1.56, p = 0.41$. Finally, the percentage of males and females in the sample who experienced identity fraud was equal, with 10.6% of each sex having had someone pose as them online.

Age

Table 4.1 also presents the extent of cyberstalking victimization by age (under 21/21 or older) across types of online pursuit and identity fraud. Respondents in under 21 years age group experienced slightly more overall cyberstalking victimization than did those in the 21 years and
Table 4.1: Extent of Victimization by Demographics and Type of Online Victimization\(^a\)

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Contact % (n)</th>
<th>Harass % (n)</th>
<th>Sexual Advances % (n)</th>
<th>Threats % (n)</th>
<th>Violence % (n)</th>
<th>ID Fraud % (n)</th>
<th>Cyberstalking % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males (379)</td>
<td>16.1% (61)</td>
<td>12.9% (49)</td>
<td>7.5% (28)</td>
<td>5.4% (20)</td>
<td>10.6% (39)</td>
<td>32.1% (122)</td>
<td></td>
</tr>
<tr>
<td>Females (593)</td>
<td>27.9% (165)**</td>
<td>25.2% (147)**</td>
<td>18.0% (104)**</td>
<td>3.7% (21)</td>
<td>10.6% (61)</td>
<td>46.3% (274)**</td>
<td></td>
</tr>
<tr>
<td>Age (n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 21 (591)</td>
<td>24.5% (145)</td>
<td>20.6% (121)</td>
<td>15.0% (87)</td>
<td>3.8% (22)</td>
<td>9.6% (55)</td>
<td>42.1% (249)</td>
<td></td>
</tr>
<tr>
<td>21 and Over (383)</td>
<td>21.4% (82)</td>
<td>19.8% (75)</td>
<td>12.0% (45)</td>
<td>5.1% (19)</td>
<td>12.1% (45)</td>
<td>38.6% (148)</td>
<td></td>
</tr>
<tr>
<td>Race (n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (828)</td>
<td>22.1% (168)</td>
<td>20.2% (169)</td>
<td>13.8% (114)</td>
<td>4.5% (37)</td>
<td>10.8% (88)</td>
<td>39.8% (335)</td>
<td></td>
</tr>
<tr>
<td>Nonwhite (135)</td>
<td>32.8% (40)**</td>
<td>21.8% (26)</td>
<td>14.5% (17)</td>
<td>3.5% (4)</td>
<td>10.1% (12)</td>
<td>48.8% (59)*</td>
<td></td>
</tr>
<tr>
<td>Rel. Status (n)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single (411)</td>
<td>18.8% (78)</td>
<td>19.3% (80)</td>
<td>11.1% (45)</td>
<td>4.0% (16)</td>
<td>10.5% (43)</td>
<td>36.8% (153)</td>
<td></td>
</tr>
<tr>
<td>Non-Single (558)</td>
<td>26.9% (149)**</td>
<td>21.1% (115)</td>
<td>16.1% (87)*</td>
<td>4.7% (25)</td>
<td>10.2% (57)</td>
<td>43.9% (243)**</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)Numbers may not add to 974 due to missing data

\(p \leq 0.05; **p \leq 0.01\)
over age group (42.1% compared to 38.6%), although the difference is not statistically
significant: \( \chi^2 (1, N = 974) = 1.17, p = 0.15 \). Amounts of victimization across age groups (under
21 years, 21 years and over) for the other dependent variables are also fairly comparable. For
instance, 20.6% of those under 21 experienced harassment, while 19.8% of those 21 and older
were harassed. There are no statistically significant differences in victimization across age
groups for any of the types of cyberstalking victimization or identity fraud victimization \((\alpha \leq 0.05)\).

Table 4.2 illustrates the extent of cyberstalking victimization across sex and age
categories. The results indicate that females under 21 years old experienced the most
victimization, followed closely by females 21 years and older; males experienced the least
overall cyberstalking with 33.5% of those under 21 being cyberstalking and 30% of those 21 and
older being victimized.

Table 4.2: Percentage and Number of Males and Females Victimized\(^a\) in Lifetime by Select
Demographic Characteristics

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>Race</th>
<th>Relationship Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Under 21</td>
<td>21 and Over</td>
<td>White</td>
</tr>
<tr>
<td>Males</td>
<td>33.5% (77)</td>
<td>30.0% (45)</td>
<td>31.0% (102)</td>
</tr>
<tr>
<td>Females</td>
<td>47.8% (172)</td>
<td>44.0% (102)</td>
<td>45.4% (233)</td>
</tr>
</tbody>
</table>

\(^a\)Based on summary cyberstalking measure.

\(\text{Race}\)

In terms of race, nonwhites experienced more overall cyberstalking victimization than did
whites (48.8% compared to 39.8%); this difference is statistically significant: \( \chi^2 (1, N = 964) = 3.24, p = 0.04 \). Across types of online victimization, whites and nonwhites were victimized to a
comparable degree with the exception of unwanted contact. For this type of online pursuit
behavior, there is a statistically significant difference in victimization across race groups: \( \chi^2 (1, N \)
= 964) = 6.79, \( p = 0.008 \). None of the other differences in victimization across race groups are statistically significant for the other types of online pursuit behaviors or identity fraud victimization (\( \alpha \leq 0.05 \)).

Table 4.2 also provides information related to the gender and race of cyberstalking victims. The group that experienced the most cyberstalking victimization was nonwhite females, with 53.2% of this group experiencing some form of cyberstalking during their lives. The next most frequently victimized group was white females with 45.4% of white females experiencing cyberstalking. Nonwhite males were the next most victimized group at 40%, followed by white males at 31%.

**Relationship Status**

In Table 4.1 relationship status is presented as single and non-single (including dating, in a long-term relationship, married, and living with someone). The pattern that emerges from viewing the data this way is that non-singles are victimized more often than are people who are single. This was the case for every type of pursuit and the cyberstalking composite measure. For the overall cyberstalking variable, nearly 44% of those in a relationship have been cyberstalked, compared to 36.8% of those who are single, and this difference is statistically significant: \( \chi^2 (1, N = 969) = 5.04, p = 0.01 \). There is also a statistically significant difference between singles and non-singles for harassment: \( \chi^2 (1, N = 959) = 8.88, p = 0.002 \) and sexual advances: \( \chi^2 (1, N = 948) = 4.89, p = 0.02 \). The exception to this pattern is identity fraud victimization, which slightly more singles in the sample experienced compared to non-singles (10.5% compared to 10.2%); this difference between singles and non-singles is not statistically significant: \( \chi^2 (1, N = 939) = 0.00, p = 0.54 \).
In examining relationship status and sex together, females are more likely to be
cyberstalked than are males, regardless of relationship status. Among females, 48.2% of non-
singles were victimized, while over 43% of singles were victims of cyberstalking. Singles males
experienced less victimization, with 30.7% males being victims of cyberstalking; nearly 34% of
non-single males experienced some type of cyberstalking victimization.

Summary

A number of points warrant discussion regarding the estimates of cyberstalking
victimization produced in the current study. First, it appears that cyberstalking victimization
may be more prevalent than physically proximal stalking. If the estimates of lifetime prevalence
are compared to the lifetime stalking estimates reported by Tjaden and Thoennes (1998) (i.e., 8%
of women and 2% of men), they indicate that cyberstalking is more widespread than physical
stalking. Second, compared to the estimates of cyberstalking victimization from previous
studies, the estimates produced in the current study suggest that this type of victimization is more
prevalent than previously reported, with nearly 41% of respondents being victimized at some
time in their lives. Estimates of victimization from past work range between 3.7% (Alexy et al.,
2005) to 31% (Spitzberg & Hoobler, 2002), making the estimates from the current study the
highest produced to date on the extent of cyberstalking victimization. One possible explanation
for this figure is that multiple types of pursuit were included in the calculation of the overall
cyberstalking victimization measure. Third, females are disproportionately victims of
cyberstalking compared to males. This is true of every type of cyberstalking victimization
except threats of violence. Fourth, beyond gender, certain groups appear to be disproportionately
victimized. For instance, 53.2% of nonwhite females were victimized, compared to 40% of
nonwhite males. Further, single individuals were victimized less than those in relationships,
which may indicate that dating partners are responsible for a portion of the stalking. Thus, to answer the first research question, the lifetime prevalence of cyberstalking victimization for members of the sample is nearly 41%, with different groups disproportionately being victimized. However, identifying which demographic groups have been victimized does not entirely explain what influences one’s likelihood of victimization. To understand what exposes individuals to risk, it is important to consider online lifestyles and routine activities within the domain of cyberstalking victimization.

**BIVARIATE RESULTS**

The bivariate relationships between the independent (and control) variables used in the study appear in Table 4.3. Point biserial correlation coefficients ($r_{pb}$) and Phi coefficients ($\phi$) are used to assess the direction and strength of the association between two discrete variables. While these statistics describe the association between two variables, they do not take into account the effects of the other variables used in the analyses. The purpose of calculating such statistics is to gain an initial understanding of the general bivariate relationships between variables. The coefficients express both the direction and strength of a relationship and range between -1.00 and 1.00. While there is no universally agreed upon criteria for determining what constitutes a “strong” or “weak” relationship in the social sciences, Fox, Levin and Forde (2009) have provided the following criteria: -1.00 (perfect negative correlation), -.60 (strong negative association), -.30 (moderate negative correlation), -.10 (weak negative correlation), .00 (no correlation), +.10 (weak positive correlation), +.30 (moderate positive correlation), +.60 (strong positive correlation), and 1.00 (perfect positive correlation). Table 4.4 illustrates the associations
Table 4.3: Bivariate Relationships\(^a\) between Independent Variables and Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Time Online</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Number SN</td>
<td>0.187**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) SN Updates</td>
<td>0.200**</td>
<td>0.120**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Time on SN</td>
<td>0.496**</td>
<td>0.242**</td>
<td>0.366**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Photos on SN</td>
<td>-0.032</td>
<td>0.042</td>
<td>0.083**</td>
<td>0.110**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) AOL IM</td>
<td>0.205**</td>
<td>0.235**</td>
<td>0.112**</td>
<td>0.197**</td>
<td>0.061</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) SN Private</td>
<td>-0.022</td>
<td>-0.061</td>
<td>-0.021</td>
<td>0.014</td>
<td>0.150**</td>
<td>0.001</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Profile Tracker</td>
<td>0.109**</td>
<td>0.273**</td>
<td>0.44</td>
<td>0.201**</td>
<td>0.073*</td>
<td>0.096**</td>
<td>0.000</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9) Add Stranger</td>
<td>0.047</td>
<td>0.132**</td>
<td>0.084**</td>
<td>0.104**</td>
<td>0.037</td>
<td>0.044</td>
<td>-0.037</td>
<td>0.079*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10) Friends on SN</td>
<td>0.064*</td>
<td>0.189**</td>
<td>0.066*</td>
<td>0.195**</td>
<td>0.276**</td>
<td>0.099**</td>
<td>0.025</td>
<td>0.111**</td>
<td>0.168**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>(11) Friend Service</td>
<td>0.036</td>
<td>0.112**</td>
<td>0.062</td>
<td>0.101**</td>
<td>0.000</td>
<td>0.007</td>
<td>-0.023</td>
<td>0.060</td>
<td>0.064*</td>
<td>0.112**</td>
<td>1.00</td>
</tr>
<tr>
<td>(12) Attractiveness</td>
<td>0.071*</td>
<td>0.169**</td>
<td>0.244**</td>
<td>0.153**</td>
<td>0.202**</td>
<td>0.246**</td>
<td>-0.023</td>
<td>0.183**</td>
<td>0.154**</td>
<td>0.187**</td>
<td>-0.014</td>
</tr>
<tr>
<td>(13) Deviance</td>
<td>0.069*</td>
<td>0.203**</td>
<td>0.054</td>
<td>0.108**</td>
<td>0.073*</td>
<td>0.112**</td>
<td>-0.075*</td>
<td>0.118**</td>
<td>0.146**</td>
<td>0.119**</td>
<td>0.078*</td>
</tr>
<tr>
<td>(14) Low Self-Cont.</td>
<td>0.030</td>
<td>0.081*</td>
<td>0.071*</td>
<td>0.030</td>
<td>0.046</td>
<td>0.067*</td>
<td>-0.011</td>
<td>0.111**</td>
<td>0.090**</td>
<td>0.093**</td>
<td>0.089**</td>
</tr>
<tr>
<td>(15) Gender</td>
<td>-0.089**</td>
<td>0.056</td>
<td>-0.010</td>
<td>0.102**</td>
<td>0.255**</td>
<td>0.020</td>
<td>0.177**</td>
<td>0.135**</td>
<td>-0.070*</td>
<td>0.038</td>
<td>-0.002</td>
</tr>
<tr>
<td>(16) Age</td>
<td>0.005</td>
<td>0.067*</td>
<td>-0.121**</td>
<td>-0.086**</td>
<td>0.052</td>
<td>-0.027</td>
<td>0.008</td>
<td>0.055</td>
<td>-0.011</td>
<td>-0.058</td>
<td>0.045</td>
</tr>
<tr>
<td>(17) Nonwhite</td>
<td>0.140**</td>
<td>0.055</td>
<td>0.033</td>
<td>0.130**</td>
<td>-0.084**</td>
<td>-0.075*</td>
<td>-0.028</td>
<td>0.090**</td>
<td>0.016</td>
<td>0.067*</td>
<td>0.122**</td>
</tr>
<tr>
<td>(18) Non-single</td>
<td>-0.055</td>
<td>0.064*</td>
<td>0.002</td>
<td>0.021</td>
<td>0.107**</td>
<td>0.038</td>
<td>0.090**</td>
<td>0.067*</td>
<td>-0.015</td>
<td>0.027</td>
<td>0.027</td>
</tr>
<tr>
<td>(19) Peer Deviance</td>
<td>0.027</td>
<td>0.093**</td>
<td>0.102**</td>
<td>0.046</td>
<td>0.052</td>
<td>0.097**</td>
<td>0.038</td>
<td>0.074*</td>
<td>0.115**</td>
<td>0.090**</td>
<td>0.103**</td>
</tr>
<tr>
<td>(20) Offline Risk</td>
<td>0.003</td>
<td>-0.072*</td>
<td>0.012</td>
<td>-0.002</td>
<td>0.178**</td>
<td>0.001</td>
<td>0.058</td>
<td>-0.004</td>
<td>0.151**</td>
<td>0.209**</td>
<td>-0.004</td>
</tr>
</tbody>
</table>

\(^a\) Due to differences in level of measurement across variables, three types of correlation coefficients are reported – Pearson’s \(r\), point biserial correlation coefficients (\(r_{pb}\)) and Phi coefficients (\(\varphi\)).
Table 4.3: Bivariate Relationships\(^a\) between Independent Variables and Control Variables (cont.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Time Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Number SN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(3) SN Updates</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Time on SN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Photos on SN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) AOL IM</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) SN Private</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Profile Tracker</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9) Add Stranger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(10) Friends on SN</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>(11) Friend Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12) Attractiveness</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(13) Deviance</td>
<td>.078*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(14) Low Self-Cont.</td>
<td>.043</td>
<td>.115**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(15) Gender</td>
<td>-.039</td>
<td>-.040</td>
<td>-.078*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(16) Age</td>
<td>-.039</td>
<td>.063*</td>
<td>.010</td>
<td>.013</td>
<td>1.00</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(17) Nonwhite</td>
<td>-.078*</td>
<td>.128**</td>
<td>.015</td>
<td>.015</td>
<td>.010</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(18) Non-single</td>
<td>.013</td>
<td>.038</td>
<td>.111**</td>
<td>.217**</td>
<td>.090**</td>
<td>-.056</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(19) Peer Deviance</td>
<td>.120**</td>
<td>.140**</td>
<td>.128**</td>
<td>.001</td>
<td>.018</td>
<td>-.024</td>
<td>.012</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>(20) Offline Risk</td>
<td>.077*</td>
<td>.184**</td>
<td>.132**</td>
<td>-.115**</td>
<td>.096**</td>
<td>-.096**</td>
<td>.005</td>
<td>.138**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

\(^a\) Due to differences in level of measurement across variables, three types of correlation coefficients are reported – Pearson’s \(r\), point biserial correlation coefficients \((r_{pb})\) and Phi coefficients \((\phi)\).

\(* p \leq 0.05; ** p \leq 0.01\)
between the independent and dependent variables. Those bivariate relationships in Table 4.4 that are weak\textsuperscript{23} or better according to Fox et al.’s criteria and statistically significant (α ≤ 0.05) will be discussed below.

**Online Exposure**

As reported in Table 4.4, each of the online exposure variables is statistically associated with having experienced cyberstalking victimization. Specifically, the amount of time spent online is positively associated with unwanted contact (r\textsubscript{pb} = .075, p ≤ .05) and threats of violence (r\textsubscript{pb} = .075, p ≤ .05). The number of online social networks owned by the respondent is positively related to all six types of online victimization, but has the strongest relationship with overall cyberstalking (r\textsubscript{pb} = .210, p < .001). Likewise, the number of times a day an individual updates their online social networking website is positively related to five of the six dependent variables, the exception being online threats. The number of hours per day spent engaging in online networking is positively associated with three types of cyberstalking: unwanted contact (r\textsubscript{pb} = .101, p ≤ .01), sexual advances (r\textsubscript{pb} = .082, p ≤ .05), and overall cyberstalking (r\textsubscript{pb} = .105, p ≤ .001). Further, the number of photos posted on one’s online social network is positively associated with all of the victimization variables except threats of violence, and the use of AOL Instant Messenger is significantly and positively associated with: unwanted contact (φ = .088, p ≤ .01), harassment (φ = .068, p ≤ .05), sexual advances (φ = .079, p ≤ .05), and the summary cyberstalking measure (φ = .155, p ≤ .001). While these relationships can all be characterized as weak, they nevertheless suggest that to some degree online exposure puts one at risk for cyberstalking victimization.

\textsuperscript{23} Weak or better relationships are reported because none of the relationships are moderately strong or better.
### Table 4.4: Bivariate Relationships\(^a\) between Independent/Control Variables and Victimization Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Contact</th>
<th>Harass</th>
<th>Sexual Advances</th>
<th>Threats Violence</th>
<th>Violence</th>
<th>Cyberstalking</th>
<th>ID Fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Online Exposure Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Online</td>
<td>.075*</td>
<td>.019</td>
<td>.021</td>
<td>.075*</td>
<td>.048</td>
<td>-.008</td>
<td></td>
</tr>
<tr>
<td>Number of Social Networks (SN)</td>
<td>.176***</td>
<td>.129***</td>
<td>.157***</td>
<td>.087**</td>
<td>.210***</td>
<td>.071*</td>
<td></td>
</tr>
<tr>
<td>Number of SN Updates</td>
<td>.065*</td>
<td>.080*</td>
<td>.122***</td>
<td>-.008</td>
<td>.126**</td>
<td>.109***</td>
<td></td>
</tr>
<tr>
<td>Time on Social Network</td>
<td>.101**</td>
<td>.047</td>
<td>.082*</td>
<td>.042</td>
<td>.105***</td>
<td>.051</td>
<td></td>
</tr>
<tr>
<td>Number Photos on SN</td>
<td>.085**</td>
<td>.065*</td>
<td>.092**</td>
<td>-.034</td>
<td>.136***</td>
<td>.095**</td>
<td></td>
</tr>
<tr>
<td>Use AOL Instant Messenger</td>
<td>.088**</td>
<td>.068*</td>
<td>.079*</td>
<td>.053</td>
<td>.155***</td>
<td>.037</td>
<td></td>
</tr>
<tr>
<td><strong>Online Guardianship Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN Set to Private</td>
<td>.039</td>
<td>.023</td>
<td>.031</td>
<td>.004</td>
<td>.045</td>
<td>.006</td>
<td></td>
</tr>
<tr>
<td>Use a Profile Tracker</td>
<td>.184***</td>
<td>.071*</td>
<td>.140***</td>
<td>.120***</td>
<td>.183***</td>
<td>.084**</td>
<td></td>
</tr>
<tr>
<td><strong>Online Proximity Variables</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Added Stranger as Friend</td>
<td>.153***</td>
<td>.142***</td>
<td>.147***</td>
<td>.041</td>
<td>.218***</td>
<td>.131***</td>
<td></td>
</tr>
<tr>
<td>Number of Friends on SN</td>
<td>.104***</td>
<td>.048</td>
<td>.116***</td>
<td>-.024</td>
<td>.121***</td>
<td>.092**</td>
<td></td>
</tr>
<tr>
<td>Friend Service</td>
<td>.063*</td>
<td>.028</td>
<td>.083*</td>
<td>.030</td>
<td>.072*</td>
<td>.113***</td>
<td></td>
</tr>
<tr>
<td><strong>Target Attractiveness</strong></td>
<td>.084**</td>
<td>.078*</td>
<td>.084**</td>
<td>.005</td>
<td>.135***</td>
<td>.041</td>
<td></td>
</tr>
<tr>
<td><strong>Online Deviance</strong></td>
<td>.182***</td>
<td>.163***</td>
<td>.208***</td>
<td>.116***</td>
<td>.240***</td>
<td>.098**</td>
<td></td>
</tr>
<tr>
<td><strong>Low Self-Control</strong></td>
<td>.149***</td>
<td>.053</td>
<td>.063*</td>
<td>.070*</td>
<td>.110***</td>
<td>.094**</td>
<td></td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.137***</td>
<td>.149***</td>
<td>.149***</td>
<td>-.041</td>
<td>.141***</td>
<td>.061</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.017</td>
<td>-.040</td>
<td>.046</td>
<td>.005</td>
<td>-.005</td>
<td>-.060</td>
<td></td>
</tr>
<tr>
<td>Nonwhite</td>
<td>.084**</td>
<td>.013</td>
<td>.006</td>
<td>-.017</td>
<td>.057</td>
<td>-.005</td>
<td></td>
</tr>
<tr>
<td>Non-single</td>
<td>.096**</td>
<td>.021</td>
<td>.072*</td>
<td>.018</td>
<td>.072*</td>
<td>.078*</td>
<td></td>
</tr>
<tr>
<td>Peer Deviance</td>
<td>.181***</td>
<td>.173***</td>
<td>.191***</td>
<td>.083**</td>
<td>.226***</td>
<td>.157***</td>
<td></td>
</tr>
<tr>
<td>Risky Offline Activities</td>
<td>.009</td>
<td>-.035</td>
<td>.064*</td>
<td>.024</td>
<td>.035</td>
<td>.090**</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Due to differences in level of measurement across variables, two types of correlation coefficients are reported – point biserial correlation coefficients \((r_{pb})\) and Phi coefficients \((\phi)\).
Online Guardianship

Of the two online guardianship variables, only use of a profile tracker is significantly related to victimization. According to Table 4.4, the use profile trackers on online social networks is positively related to all six types of victimization: unwanted contact ($\varphi = .184, p \leq .001$), harassment ($\varphi = .071, p \leq .05$), sexual advances ($\varphi = .140, p \leq .001$), threats of violence ($\varphi = .120, p \leq .001$), overall cyberstalking ($\varphi = .183, p \leq .001$), and identity fraud victimization ($\varphi = .084, p \leq .01$). These results suggest that online guardianship, as operationalized in the current study, does not protect individuals from online victimization. Indeed, while using a profile tracker is significantly related to victimization, the effects are opposite expectations. This may reflect a temporal ordering issue, where respondents acquired online tracking programs after experiencing problems online. It may also be that these theoretical concepts are not necessarily mutually exclusive. For instance, below, the add stranger variable will be discussed in terms of online proximity, because adding strangers as friends to online profiles brings potentially motivated offenders into online proximity with potential targets. However, not adding strangers as friends could also be considered a form of self-guardianship, so it may not be the case that guardianship does not affect victimization, but rather that neither of these two variables produced the expected protective results.

Online Proximity

As the results in Table 4.4 illustrate, all three of the online proximity variables have consistent effects across types of online pursuit. For instance, the add stranger variable (measuring whether the respondent allows strangers access to their online social networks) is significantly and positively associated with all types of online victimization except online threats. These variable effects are as follows: unwanted contact ($\varphi = .153, p \leq .001$), harassment
(φ = .142, \( p \leq .001 \)), sexual advances (φ = .147, \( p \leq .001 \)), overall cyberstalking (φ = .218, \( p \leq .001 \)), and identity fraud victimization (φ = .131, \( p \leq .001 \)). The number of friends a respondent has online and the use of a friend service are positively related to four of the six types of victimization: contact, sexual advances, ID fraud and overall cyberstalking. These effects are presented in Table 4.4. Once again, while these relationships are considered weak, they do point to the potential importance of online proximity to motivated offenders in explaining cyberstalking victimization.

**Online Target Attractiveness**

As can be seen in Table 4.4, online target attractiveness is significantly and positively associated with: unwanted contact (\( r_{pb} = .084, p \leq .01 \)), harassment (\( r_{pb} = .078, p \leq .05 \)), sexual advances (\( r_{pb} = .084, p \leq .01 \)), and the summary cyberstalking measure (\( r_{pb} = .135, p \leq .001 \)). This relationship is weak, but is encouraging in terms of the applicability of the theoretical concept in explaining online types of victimization.

**Online Deviance**

Table 4.4 indicates that participating in online deviance is positively and statistically associated with all six of the online victimization measures: contact (\( r_{pb} = .182, p \leq .001 \)), harassment (\( r_{pb} = .163, p \leq .001 \)), sexual advances (\( r_{pb} = .208, p \leq .001 \)), threats (\( r_{pb} = .116, p \leq .001 \)), overall cyberstalking (\( r_{pb} = .240, p \leq .001 \)) and identity fraud victimization (\( r_{pb} = .098, p \leq .01 \)). This provides preliminary support for the idea that a deviant online lifestyle (e.g., hacking, media piracy, harassment) puts one at added risk of online victimization.

**Low Self-Control**

As argued above, a propensity toward low self-control might increase one’s likelihood of online victimization by agitating/aggravating others online into retaliation (e.g., threats), or by
making one more likely to give out information or participate in risky online encounters. As the results reported in Table 4.4 indicate, the low self-control measure is positively and statistically associated with: contact ($r_{pb} = .149$, $p < .001$), sexual advances ($r_{pb} = .063$, $p < .05$), online threats ($r_{pb} = .070$, $p < .05$), overall cyberstalking ($r_{pb} = .110$, $p < .001$), and identity fraud ($r_{pb} = .094$, $p < .01$).

**Summary**

Overall, the bivariate results indicate that the lifestyle/routine activities perspective may have some utility in explaining cyberstalking victimization. Each of the lifestyle/routine activity theory (LRAT) concepts of online exposure, online proximity, online target attractiveness, online deviance and low self-control produced significant bivariate relationships ($\alpha \leq 0.05$). In particular, online exposure and online deviance were consistently related to victimization across types of online pursuit and identity fraud victimization; these two relationships are statistically significant at the $\alpha \leq 0.05$ level. The bivariate results also suggest possible risk factors for victimization (e.g., spending more time online, granting strangers access to personal information, engaging in deviant routine activities online). To more fully explore the effects of the LRAT variables on victimization, binary logistic regression models will be presented below.

**MULTIVARIATE RESULTS**

Before modeling the relationships between online lifestyles/routines and cybervictimization, it was necessary to check for multicollinearity between the independent variables. Multicollinearity occurs when predictor variables in a multiple regression are highly correlated, and makes it difficult to determine the relative contributions of such variables to the variation in the dependent variable. Accordingly, tolerance and variance inflation factor statistics were calculated to determine whether multicollinearity exists between study variables.
As illustrated in Appendix 8, multicollinearity is not a statistical issue with the variables used in this analysis.

Missing data, however, does pose a potential problem in the following analysis. A substantial number of missing cases may call into question the validity of the results. For this reason, missing values on the independent variables were imputed using maximum likelihood (ML) estimation techniques. This technique uses the expectation maximization (EM) algorithm and a two step process (i.e., an expectation step and a maximization step) to substitute ML estimates for cases with missing values. As Allison (2001: 19) has explained, “These two steps are repeated multiple times in an iterative process that eventually converges to the ML estimates.” This technique has been described as efficient, practical, especially effective for large samples, and is considered superior to imputation by multiple regression techniques because it makes fewer demands on the data (Allison, 2001; Garson, 2006). It is also currently the most common method of imputation (Garson, 2006). Binary logistic regression models were estimated both on the imputed data and the original data (with missing values). The results were not substantively different across analyses, so only the models of the imputed data will be presented and discussed below.

Table 4.5 provides logistic regression coefficients, standard errors, and odds ratios for the four types of online pursuit, identity fraud, and the overall cyberstalking victimization variable. The regression coefficients represent log odds, meaning that for every one unit change in the independent variable, there is a change in the log of the odds (corresponding to the value of the coefficient). If the log of the odds is positive, the probability of the outcome increases as the

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24 As noted previously, it is not advisable to impute missing data on dependent variables, which is why only missing values on the independent variables were imputed using maximum likelihood estimation (Allison, 2001).
value of the variable increases; if the log of the odds is negative, the probability of the outcome decreases as the value of the variable increases. Since the interpretation of the coefficient values is not intuitive, odds ratios (exponentiated coefficients) are also presented. For Exp(B), values greater than 1.00 mean that odds increase as the independent variable increases, while values less than 1.00 mean odds decrease as the independent variable increases. As an example, a value of 2.27 (the log odds of online deviance on online harassment), is difficult to interpret, but an odds ratio of 9.72 (for engaging in online deviance) can be interpreted as an increase in online harassment by 9.7 times as participation in online deviance increases.

Model fit statistics, including -2 log likelihood (-2LL), model chi-square ($G_M$), and Nagelkerke $R^2$ are also presented in Table 4.5. The -2 log likelihood represents an index of the model’s fit, with the value of the statistic being higher in poorly fitting statistical models. The value of the statistic is reduced as explanatory variables are added to the model, improving the model’s fit, with a perfectly fitting model having a -2 log likelihood value of zero (Mertler & Vannatta, 2005). This reduction indicates that the model is better at predicting the dependent variable than it was before the addition of the independent variable(s). To measure how much improved the model is as independent variables are added is expressed by the model chi-square statistic (Field, 2005). This statistic represents the difference between a model containing only the constant, and the model under examination (Mertler & Vannatta, 2005). According to Menard (2002, 2010), if the value of $G_M$ is statistically significant, the null hypothesis is rejected and it can be concluded that the inclusion of the independent variables in the model improves prediction of the dependent variable over a model in which only the constant is used. The Nagelkerke $R^2$ statistic also offers a measure of the significance of the model. The value of this statistic represents the proportion of variation in the dependent variable that is explained by the
independent variables. For instance, in Model 1 (Table 4.5) the independent variables explain 20% of the variation in unwanted contact victimization (Nagelkerke $R^2 = 0.20$). Overall then, the model fit statistics for Models 1-6 presented in Table 4.5 indicate that these models fit well with the data. The results of the logistic regression analyses for each of these six dependent variables will be presented and discussed below in Table 4.5.

**Online Exposure**

As Table 4.5 illustrates, the online exposure variables were not consistent predictors of cyberstalking and identity fraud victimization across statistical models. There were, however, a few variables that yielded statistically significant effects on victimization. For instance, the online exposure variable measuring the number of times a day the respondent updates their online social networking account (SN Update), is a statistically significant and positive predictor of receiving unwanted sexual advances. The magnitude of this effect was quite modest, as it also was for identity fraud victimization. The number of social networking accounts that a respondent has opened (Number SN) is also a positive predictor of victimization, increasing the odds of unwanted contact and overall cyberstalking victimization slightly. The final online exposure variable to produce statistically significant effects is the variable measuring whether the respondent uses AOL Instant Messenger (IM). Use of AOL IM increases odds of overall cyberstalking victimization by nearly 1.5 times. None of the other online exposure variables produced statistically significant effects on any of the six victimization variables.

**Online Guardianship**

For the concept of online guardianship, use of a profile tracker by the respondent increases odds of victimization for four of the six types of online victimization. As Table 4.5 indicates, for unwanted contact, sexual advances, and overall cyberstalking victimization, odds
Table 4.5: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Victimization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1: Unwanted Contact</th>
<th></th>
<th>Model 2: Harassment</th>
<th></th>
<th>Model 3: Sexual Advances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>S.E.</td>
<td>Exp(B)</td>
<td>Coefficient</td>
<td>S.E.</td>
</tr>
<tr>
<td><strong>Online Exposure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Online</td>
<td>0.05</td>
<td>(0.04)</td>
<td>1.05</td>
<td>0.02</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Number SN</td>
<td>0.10*</td>
<td>(0.05)</td>
<td>1.11</td>
<td>0.08</td>
<td>(0.06)</td>
</tr>
<tr>
<td>SN Updates</td>
<td>0.00</td>
<td>(0.02)</td>
<td>1.00</td>
<td>0.03</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Time on SN</td>
<td>-0.04</td>
<td>(0.06)</td>
<td>0.96</td>
<td>-0.08</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Photos on SN</td>
<td>0.00</td>
<td>(0.00)</td>
<td>1.00</td>
<td>0.00</td>
<td>(0.00)</td>
</tr>
<tr>
<td>AOL IM</td>
<td>0.07</td>
<td>(0.18)</td>
<td>1.08</td>
<td>0.03</td>
<td>(0.19)</td>
</tr>
<tr>
<td><strong>Guardianship</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN Private</td>
<td>0.29</td>
<td>(0.24)</td>
<td>1.34</td>
<td>0.15</td>
<td>(0.24)</td>
</tr>
<tr>
<td>Profile Tracker</td>
<td>0.60*</td>
<td>(0.24)</td>
<td>1.83</td>
<td>0.03</td>
<td>(0.27)</td>
</tr>
<tr>
<td><strong>Online Proximity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add Stranger</td>
<td>0.75***</td>
<td>(0.22)</td>
<td>2.12</td>
<td>0.83***</td>
<td>(0.23)</td>
</tr>
<tr>
<td>Friends on SN</td>
<td>0.00</td>
<td>(0.00)</td>
<td>1.00</td>
<td>0.00</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Friend Service</td>
<td>0.05</td>
<td>(0.42)</td>
<td>1.05</td>
<td>-0.02</td>
<td>(0.45)</td>
</tr>
<tr>
<td><strong>Attractiveness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN Private</td>
<td>0.15</td>
<td>(0.41)</td>
<td>1.16</td>
<td>0.34</td>
<td>(0.43)</td>
</tr>
<tr>
<td><strong>Online Deviance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add Stranger</td>
<td>1.86***</td>
<td>(0.54)</td>
<td>6.42</td>
<td>2.27***</td>
<td>(0.56)</td>
</tr>
<tr>
<td><strong>Low Self-Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.49**</td>
<td>(0.16)</td>
<td>1.63</td>
<td>0.14</td>
<td>(0.17)</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.70***</td>
<td>(0.20)</td>
<td>2.02</td>
<td>0.95***</td>
<td>(0.21)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.26</td>
<td>(0.18)</td>
<td>0.77</td>
<td>-0.28</td>
<td>(0.19)</td>
</tr>
<tr>
<td>Nonwhite</td>
<td>0.40</td>
<td>(0.25)</td>
<td>1.49</td>
<td>-0.10</td>
<td>(0.27)</td>
</tr>
<tr>
<td>Non-single</td>
<td>0.29</td>
<td>(0.18)</td>
<td>1.33</td>
<td>-0.11</td>
<td>(0.18)</td>
</tr>
<tr>
<td>Deviant Peers</td>
<td>0.19***</td>
<td>(0.05)</td>
<td>1.21</td>
<td>0.20***</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Risky Offline Act.</td>
<td>-0.01</td>
<td>(0.01)</td>
<td>0.99</td>
<td>-0.02*</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.12***</td>
<td>(0.57)</td>
<td>0.01</td>
<td>-4.07***</td>
<td>(0.57)</td>
</tr>
</tbody>
</table>

-2 Log-likelihood 921.44  871.21  641.39
Model $\chi^2$ 136.22***  102.37***  125.29***
Nagelkerke R$^2$ 0.20  0.16  0.22
N 974 964 953

* p ≤ .05; ** p ≤ .01; *** p ≤ .001
### Table 4.5: Binary Logistic Regression Coefficients, Standard Errors, and Exponentiated Coefficients for Victimization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 4: Threats of Violence</th>
<th>Model 5: Cyberstalking</th>
<th>Model 6: Identity Fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>S.E.</td>
<td>Exp(B)</td>
</tr>
<tr>
<td><strong>Online Exposure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time Online</td>
<td>0.09</td>
<td>(0.06)</td>
<td>1.09</td>
</tr>
<tr>
<td>Number SN</td>
<td>0.07</td>
<td>(0.09)</td>
<td>1.07</td>
</tr>
<tr>
<td>SN Updates</td>
<td>-0.04</td>
<td>(0.05)</td>
<td>0.96</td>
</tr>
<tr>
<td>Time on SN</td>
<td>-0.02</td>
<td>(0.11)</td>
<td>0.98</td>
</tr>
<tr>
<td>Photos on SN</td>
<td>0.00</td>
<td>(0.00)</td>
<td>1.00</td>
</tr>
<tr>
<td>AOL IM</td>
<td>0.12</td>
<td>(0.38)</td>
<td>1.13</td>
</tr>
<tr>
<td><strong>Guardianship</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN Private</td>
<td>0.46</td>
<td>(0.49)</td>
<td>1.59</td>
</tr>
<tr>
<td>Profile Tracker</td>
<td>1.10*</td>
<td>(0.44)</td>
<td>2.99</td>
</tr>
<tr>
<td><strong>Online Proximity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add Stranger</td>
<td>0.20</td>
<td>(0.44)</td>
<td>1.23</td>
</tr>
<tr>
<td>Friends on SN</td>
<td>-0.00</td>
<td>(0.00)</td>
<td>0.99</td>
</tr>
<tr>
<td>Friend Service</td>
<td>0.39</td>
<td>(0.77)</td>
<td>1.48</td>
</tr>
<tr>
<td><strong>T. Attractiveness</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add Stranger</td>
<td>-0.44</td>
<td>(0.76)</td>
<td>0.64</td>
</tr>
<tr>
<td><strong>Online Deviance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add Stranger</td>
<td>2.41*</td>
<td>(0.99)</td>
<td>11.13</td>
</tr>
<tr>
<td><strong>Low Self-Control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-0.38</td>
<td>(0.38)</td>
<td>0.68</td>
</tr>
<tr>
<td>Age</td>
<td>-0.23</td>
<td>(0.36)</td>
<td>0.79</td>
</tr>
<tr>
<td>Nonwhite</td>
<td>-0.68</td>
<td>(0.60)</td>
<td>0.50</td>
</tr>
<tr>
<td>Non-single</td>
<td>0.09</td>
<td>(0.36)</td>
<td>1.10</td>
</tr>
<tr>
<td>Deviant Peers</td>
<td>0.13</td>
<td>(0.09)</td>
<td>1.14</td>
</tr>
<tr>
<td>Risky Offline Act.</td>
<td>0.01</td>
<td>(0.01)</td>
<td>1.00</td>
</tr>
<tr>
<td>Constant</td>
<td>-5.26***</td>
<td>(1.05)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

| -2 Log-likelihood | 302.09    | 1111.82 | 564.40 |
| Model $\chi^2$    | 35.12*    | 204.97 *** | 73.37*** |
| Nagelkerke R²     | 0.12      | 0.26    | 0.15   |
| N                 | 942       | 974     | 943    |

* p ≤ .05; ** p ≤ .01; *** p ≤ .001
of victimization are nearly doubled by use of an online profile tracker, and for online threats of violence, odds of victimization are nearly tripled. These findings are contrary to expectations, since these programs are designed to allow users to keep track of who is viewing their information, and take measures to limit access of potential offenders if problems develop. One explanation for this counterintuitive finding is that the effect may reflect a response to victimization rather than a precursor to it. In other words, the finding may be an artifact of temporal ordering. Individuals who experienced problems with cybervictimization may have adopted profile trackers to stay safe in the future.

**Online Proximity**

As Table 4.5 indicates, the online proximity variables are among the strongest and most robust predictors of victimization across types of cyberstalking. In particular, the *add stranger* variable, indicating whether the respondent allows people they do not know access to their personal profile pages (e.g., social networks) online, increases risks of victimization for five of the six dependent variables. For unwanted contact and harassment, adding a stranger increases odds of victimization by more than two times; for sexual advances and overall cyberstalking, doing so increases odds of victimization over 2.5 times; and for identity fraud, adding a stranger increases odds of victimization by nearly three times. The second statistically significant predictor of victimization is use of a friend service. These services (e.g., friend trains, whore trains) allow the host (the website) to “advertise” the user’s profile, and automatically bring the user into contact with other users who are looking for online friends (or for something more). Individuals who used these services are more likely to experience identity fraud, suggesting that offenders may seek opportunities for victimization through these services. Use of a friend service increases odds of identity fraud victimization nearly 2.7 times.
Online Target Attractiveness

The online target attractiveness measure, which was comprised of nine separate indicators of target attractiveness, is not significantly associated with any of the cyberstalking victimization dependent variables or identity fraud victimization. This is contrary to expectations that a more attractive target is more likely to be targeted by motivated offenders. It was hypothesized that individuals who provide more personally identifying information and/or information making it easier for cyberstalkers to contact victims would present more attractive targets. However, it is possible that the current measure of target attractiveness is not a reliable measure of the LRAT concept.

Online Deviance

As reported in Table 4.5, online deviance is the strongest predictor of victimization in five of the six logistic regression models, increasing odds of unwanted contact over six times, harassment nearly ten times, sexual advances nearly 18 times, threats of violence over 11 times, and overall cyberstalking over 13 times. As discussed in Chapter 2, participation in deviant lifestyles is hypothesized to primarily have the effect of exposing these individuals to added risks of victimization (e.g., they are likely to come into contact with others engaging in the same sorts of activities, they open themselves up to retaliation if they are caught or confronted). The measure of deviance utilized in the present study was based on measures of participation in eight deviant activities (e.g., hacking, sexting, online harassment, media piracy), and the strong relationships between this measure and the victimization variables indicates that engaging in these activities is not only many times illegal, but also a precursor to cybervictimization.
Low Self-Control

With the exception of unwanted contact, low self-control failed to stand out as a predictor of cyberstalking victimization. For unwanted contact, individuals characterized as possessing low self-control are over 1.6 times more likely to be the recipients of unwanted contact (i.e., being contacted after asking the other person to cease communication). Individuals having low self-control may be more likely to participate in risky activities online (e.g., downloading illicit materials that may include viruses, being less careful in deciding whom to allow access to their personal information online), or may behave in such ways as to pester or provoke others into contacting them. The statistically significant bivariate relationship between low self-control and online deviance ($r = 0.115, p < 0.001$) provides support for the former proposition.

Control Variables

Among the control variables, gender stands out as a predictor of victimization for four of the five cyberstalking victimization variables. Specifically, being female is a positive predictor of unwanted contact, harassment, sexual advances, and overall cyberstalking. Age affects only one type of cybervictimization, with individuals over 21 years old being less likely to experience identity fraud victimization. The deviant peers control variable is a significant and positive predictor of five of the six dependent variables, increasing odds of unwanted contact, harassment, sexual advances, overall cyberstalking and identity fraud. The final control variable to affect odds of victimization is participation in offline risky activities; however, such activities were negatively associated with harassment victimization, and the variable effects are modest.

SUMMARY

When examining the five cyberstalking victimization variables and the identity fraud victimization variable, several patterns emerge. A summary of the effects of the lifestyle/routine
activity variables on cyberstalking victimization and identity fraud victimization appear in Table 4.6. First, online exposure increases risks for unwanted contact, sexual advances, overall cyberstalking, and identity fraud victimization. Of the six measures of online exposure, three variables exhibited effects on cybervictimization: use of AOL IM, the number of online social networks, and the number of daily updates to online social networks. Second, online guardianship did not significantly reduce victimization. In fact, use of an online profile tracker is a significant, positive predictor of victimization. Third, two of the online proximity variables are positively related to victimization. In particular, adding strangers as friends to online social networks had fairly robust effects across models, increasing likelihood of victimization for five of the six types of cybervictimization. This is consistent with lifestyle/routine activities theory, as greater proximity to motivated offenders (whether in physical space or online) is expected to result in added risk of victimization. Fourth, online target attractiveness did not yield any statistically significant effects across types of cyberstalking or identity fraud. Theoretically, a more attractive target would be more likely to be targeted/pursued by offenders, but this was not the case in the current analysis. Fifth, online deviance is a robust predictor of cyberstalking victimization for every type of victimization except identity fraud, with those participating in online deviance being more likely to experience cyberstalking. Not only are the effects of online deviance consistent, but they are strong. For instance, as Table 4.5 illustrates, participating in online deviance increases risks of being the recipient of unwanted sexual advances by nearly 18 times. Finally, consistent with Gottfredson and Hirschi’s (1990) general theory of crime, individuals characterized as having low self-control are more likely to be cyberstalked; however, this was only the case for unwanted contact.
Table 4.6: Summary of Lifestyle/Routine Activities Findings for Cyberstalking Victimization

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Unwanted Contact</th>
<th>Harassment</th>
<th>Sexual Advances</th>
<th>Threats of Violence</th>
<th>Cyberstalking Victimization</th>
<th>Identity Fraud</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Exposure</td>
<td>Number of Social Networks (+)</td>
<td>Number of Social Network Updates (+)</td>
<td>Number of Social Networks (+)</td>
<td>Number of Social Network Updates (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Guardianship</td>
<td>Profile Tracker (+)</td>
<td>Profile Tracker (+)</td>
<td>Profile Tracker (+)</td>
<td>Profile Tracker (+)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Proximity</td>
<td>Add Stranger (+)</td>
<td>Add Stranger (+)</td>
<td>Add Stranger (+)</td>
<td>Add Stranger (+)</td>
<td>Add Stranger (+)</td>
<td></td>
</tr>
<tr>
<td>Target Attractiveness</td>
<td>Online Deviance (+)</td>
<td>Online Deviance (+)</td>
<td>Online Deviance (+)</td>
<td>Online Deviance (+)</td>
<td>Online Deviance (+)</td>
<td></td>
</tr>
<tr>
<td>Low Self-Control</td>
<td>LSC (+)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Items in parentheses indicate the direction of the coefficient.
Chapter 5 concludes the dissertation with a discussion of these results, particularly in terms of the extent of victimization, what puts individuals at risk, and the implications of the findings for lifestyle/routine activities theory. Ideas for preventing cyberstalking will also be presented, followed by an assessment of the limitations of the study and directions for future cyberstalking victimization research.
Chapter 5

DISCUSSION

This chapter will address each of the three research questions that guided the study: (1) what is the extent of cyberstalking victimization amongst members of the sample?; (2) what puts college students at risk for cyberstalking victimization?; and (3) can lifestyle/routine activities theory be adapted to explain victimizations in cyberspace? Next, the implications of the study results for preventing cyberstalking in the future will be discussed, followed by a review of the limitations of the study, directions for future research, and some concluding remarks.

SUMMARY OF RESULTS

Extent of Victimization

The lifetime prevalence of overall cyberstalking amongst members of the sample is 40.8%, meaning that nearly 41% of the sample has experienced some form of cyberstalking victimization in their lives. Of those respondents who were cyberstalked, 23.3% experienced unwanted contact, 20.1% experienced harassment, 13.9% were the target of unwanted sexual advances, and 4.4% were threatened with violence. 10.6% of respondents experienced identity fraud victimization. These estimates raise three important points. First, if this finding were to be reaffirmed through replication, it would suggest that cyberstalking is more prevalent\(^\text{25}\) than physically proximal stalking. Second, while only speculative, cyberstalking may partially account for why there appears to have been a surge in stalking victimization over the last decade. In 1998, Tjaden and Thoennes reported that one million residents of the United States had

\(^{25}\) Estimates from Tjaden and Thoennes’ (1998) national-level study of stalking estimate prevalence at 8.1% of women and 2.1% of men, and in assessments of the extant literature, Sheridan, Blaauw, and Davies (2003) reported that estimates from studies of the lifetime prevalence of stalking range from 12%-16% for women and 4%-7% for men, while Spitzberg and Cupach (2007) reported ranges of 8%-32% for women and 2%-13% for men in their assessment.
experienced stalking in the 12 months prior to the survey. In 2009, Baum et al. (2009) published results of a national study on stalking indicating that 3.4 million adults in the United States had been stalked in the year before the survey was administered\textsuperscript{26}. Cyberstalking may account for some of the disparity in these estimates, as technologies making cyberstalking victimization possible (e.g., proliferation of the Internet and Internet-capable devices) have spread exponentially during this time. Third, this estimate is higher than previously published estimates of cyberstalking victimization. As discussed in Chapter 1, current estimates of cyberstalking victimization range\textsuperscript{27} widely from 3.5% to over 31% of sample populations (Spitzberg & Hoobler, 2002). One of the reasons for this diversity in estimates is that most studies of cyberstalking victimization to date have only reported estimates of the harassment element of cyberstalking, neglecting the other types of pursuit behaviors that comprise this type of victimization (i.e., unwanted contact, sexual advances, threats of violence).

In addition to estimating the extent of cyberstalking victimization, the current study also identified groups that are most at risk of victimization. It was hypothesized that those possessing certain demographic characteristics (e.g., being female) would be disproportionately victimized, and the data supported this expectation. For instance, females were significantly more likely to be the victims of unwanted contact, online harassment, sexual advances, and overall cyberstalking than were males; nonwhites experienced more unwanted contact and overall cyberstalking than did whites; and for relationship status, non-singles were significantly more likely to be victims of unwanted contact, sexual advances, and overall cyberstalking than were...

\textsuperscript{26} Measurement of stalking across these two studies is fairly comparable, although Tjaden and Thoennes (1998) did not measure cyberstalking victimization, while Baum et al. (2009) did.

\textsuperscript{27} This range does not include Bocij’s (2003) study estimate of 82\%.
single individuals. Moving beyond demographic explanations of victimization, the current study also identified those lifestyles and routine activities that put individuals at risk for cyberstalking victimization.

**Lifestyles and Routine Activities as Risk Factors for Cyberstalking**

The second research question asked what factors put individuals at risk of cyberstalking victimization\(^{28}\). It was hypothesized that online lifestyles and routine activities may make some individuals more likely to be victimized. The logistic regression results indicate that this is the case, with a number of online activities increasing victimization risk.

*Online Exposure*

As discussed in Chapter 3, the LRAT concept of exposure is hypothesized to increase victimization by increasing individuals’ exposure to motivated offenders and risky situations (Cohen et al., 1981). In the current analysis, three measures of online exposure are associated with increases in cyberstalking victimization: (1) the number of social networks the respondent has opened, (2) the number of daily updates to those networks, and (3) the use of AOL Instant Messenger. The victim’s number of social networks and the number of daily updates to these networks theoretically both provide more opportunities for victimization. For instance, someone who provides information and daily updates on multiple online social networks reaches a larger “audience” than someone who only maintains and updates a single online network account. The third exposure variable to produce statistically significant results with victimization is use of AOL Instant Messenger. AOL IM is a real time communication application used with computers or wireless devices (e.g., iPhone) that allows users to send text back and forth. The ease and immediacy of communication allowed by AOL IM makes various pursuit behaviors a relatively

\(^{28}\) This measure includes the four types of pursuit, and does not include identity fraud victimization.
simple task for cyberstalkers. Further, AOL IM does not require users to obtain permission before adding other users to their buddy lists. In essence, not only are stalkers able to easily communicate with their victims in real time, but they can also monitor whether their victims are online or not, which can facilitate the online pursuit. This may be the reason that use of AOL IM is a statistically significant and positive predictor of cyberstalking victimization.

Past research examining the victimization of college students have generally reported that exposure increases victimization across a variety of types of victimization (Fisher et al., 1998, 2002; Mustaine & Tewksbury, 1999, 2002). The current study adds to this body of work, reaffirming the importance of exposure in increasing college students’ risks of victimization, and adds a new type of victimization to the list – cyberstalking.

*Online Guardianship*

Lifestyle/routine activity theory postulates that all else equal, more guarded or protected targets are less likely to be victimized, and that the presence of guardians reduces criminal opportunities and discourages offenders from taking advantage of opportunities. In the current study, online guardianship was measured by asking respondents if they use online profile trackers designed to monitor who is viewing their information, and by asking if they have their online social network accounts set to limited or private access. Neither of these measures of online guardianship produced results in accord with theoretical expectations. First, use of a profile tracker is *positively* associated with cyberstalking victimization. As previously discussed, it is possible that this effect is a methodological artifact of the survey question. In the survey, the question measuring whether the respondent used an online profile tracker did not specify whether this form of online guardianship was adopted as a result of previous problems encountered online (e.g., unwanted messages, harassment), or whether a profile tracker was
being used before, during, or after a victimization incident. As a result, it is difficult to
determine causally whether use of such an online device increases risks for cyberstalking.
Second, having one’s online profile set to limited access did not significantly impact risks of
victimization for any of the cyberstalking variables. Considering these two findings, the current
study does not find support for the LRAT concept of guardianship in reducing victimization.
This is not entirely surprising as previous studies examining college student victimization in both
physical space and cyberspace have produced mixed results on the effects of guardianship
(Bossler & Holt, 2009; Fisher et al., 1998; Marcum, 2009; Mustaine & Tewksbury, 1999).
Reynald (2009) and Tillyer and Eck (2009) have also pointed out that the guardianship
component of routine activities theory is in need of further attention from researchers, and the
current study findings support this position.

Online Proximity

Adding strangers as friends to one’s online social networks was positively correlated with
every type of pursuit except threats of violence, and it is clear why this would be the case. As an
example, if a potential stalker is online browsing profiles on Facebook or Myspace (or some
other online social network) and comes across a profile picture of someone he/she finds
attractive, they can send a request to that person to be added as one of their online friends. If the
target agrees to this, that potential stalker can now view, access, or download
anything/everything that the victim has posted on their online profile. This enables the
cyberstalker to see what that person is writing about (e.g., what they are going to do that day),
potentially what their contact information is (if the victim has that information listed online),
what their interests are, their relationship status, as well as other information that would be useful
in pursuing and becoming more attached to the victim. The strong and consistent effect of online
proximity across types of victimization may also explain the lack of statistically significant findings for the target attractiveness and guardianship variables. While a possible victim may have information posted online about themselves online (i.e., target attractiveness), the stalker cannot view or make use of this information unless the victim has granted them access. Not granting unwanted parties as friends can also be considered a form of self-guardianship.

According to the proximity element of lifestyle/routine activities theory, increased physical proximity to motivated offenders results in an increase in crime and victimization. As was argued in Chapter 3, the idea of proximity can be transitioned from physical space to online networks, and the results of the current study suggest online proximity to motivated offenders does increase likelihood of cyberstalking victimization. These results are in accord with previous work examining the victimization of college students from a LRAT perspective (Fisher et al., 1998; Mustaine & Tewksbury, 1998, 1999, 2002).

**Target Attractiveness**

Target attractiveness, as it was conceived in the current study, did not impact likelihood of victimization. As mentioned previously, this could be the result of difficulty in operationalizing the theoretical concept (Dunham & Monk, 2009). Indeed, in past work involving college student victimization, only Fisher and colleagues (1998, 2002) have reported effects of target attractiveness in accord with theoretical predictions. It may be that the current measures of target attractiveness simply do not adequately gauge what makes one an attractive target for cyberstalkers. It may also be that, as argued above, online proximity and allowing strangers access to personal information simply matters more in predicting victimization than does target attractiveness. The positive and statistically significant bivariate relationship \(r_{pb} = .154, p \leq .01\) between these two variables indicates that more attractive targets may also be more
likely to grant strangers access to their online information. More work is needed in exploring
this theoretical concept, especially as it pertains to online types of victimization (Dunham &
Monk, 2009). To date, the current study represents the first attempt at examining the effects of
target attractiveness in predicting cyberstalking or cybervictimization.

Online Deviance

As previously discussed, engaging in risky activities (i.e., deviant lifestyles) has emerged
as a key risk factor for a variety of types of victimization (e.g., Jensen & Brownfield, 1987;
Lauritsen et al., 1991; Sampson & Lauritsen, 1990), and it appears that cyberstalking
victimization is no exception. Consistent with previous work examining the cybervictimization
of college students (Choi, 2008; Bossler & Holt, 2009; Holt & Bossler, 2009), online deviance
(i.e., persistently contacting others, harassing others, making unwanted sexual advances toward
others, threatening others, hacking, illegally downloading materials online, and
sending/receiving sexually provocative images via text message) is a strong predictor of five of
the six victimization variables (the exception being identity fraud29). Participating in these sorts
of activities not only represents a deviant lifestyle, but it exposes these individuals to others who
are participating in the same kinds of activities; that proximity allows for the possibility of these
individuals being victimized themselves (i.e., opportunity). These results not only add further
support to the hypothesis that participation in deviant or risky lifestyles and routine activities
increases likelihood of victimization, but also that such activities among college students
increase likelihood of cyberstalking victimization.

29This suggests that there are different opportunity structures for cyberstalking as compared to identity fraud.
Low Self-Control

Finally, an underlying propensity toward low self-control was expected to impact cyberstalking victimization in two ways: (1) individuals who have low self-control are hypothesized to take fewer precautions when engaging in online activities (e.g., they may be more likely to visit risky websites or allow strangers access to their personal information); and (2) those with low self-control might be more likely to be aggressive, argumentative, or rude in their online interactions with others, making them targets of online victimization, such as harassment or threats. Those with low self-control are also hypothesized to be more likely to engage in deviant and risky activities online, as indicated by the statistically significant bivariate relationship between online deviance and low self-control ($r = 0.115, p < 0.001$). The low self-control variable operated as expected only for one dependent variable – unwanted contact. That low self-control did not affect likelihood of victimization for the other types of cyberstalking victimization or identity fraud victimization as expected may be the result of how it was operationalized. In the future, more accepted and convention measures of low self-control should be used in studying cyberstalking victimization to determine whether low self-control impacts likelihood of cybervictimization.

Summary of Risk Factors for Cyberstalking

In summary, the key question that emerges is: who is victimized online and why? Based on the results presented in Chapter 4, there are certain demographic groups who are disproportionately victimized, and there are certain lifestyles and routine activities that put individuals at risk for cyberstalking victimization. Consistent with theory, those who are exposed to motivated offenders, those who come into online proximity with motivated offenders, and those who engage in online deviance themselves are most at risk for becoming cybercrime
victims. In addition, females and those with deviant peers are more likely to experience cyberstalking. Attention now turns to an assessment of how well lifestyle/routine activity theory can explain victimization in cyberspace environments.

**Lifestyle/Routine Activities Theory and Cyberstalking**

The lifestyle/routine activity perspective is the preeminent theory in Victimology, but has thus far not been extensively applied to cybervictimization. Thus, one of the key questions this dissertation sought to answer was whether the theory could fruitfully be applied to online types of victimization, and specifically cyberstalking. In Chapter 3 it was argued that each of the core concepts in the theory (i.e., exposure, proximity, guardianship, target attractiveness, deviant lifestyles, and low self-control) could be adapted to virtual environments. However, while each of the concepts found an online counterpart, not all of them were significantly related to victimization. Interestingly, guardianship and target attractiveness (as they were operationalized here) did not influence the likelihood of cybervictimization as expected\(^30\). Therefore, the results suggest moderate support for the utility of lifestyle/routine activities theory in explaining cyberstalking, but more work is needed. The following section discusses how some of the arguments against applying the theory to cybercrimes can be reconciled.

*Toward a Cyber-Lifestyle/Routine Activities Theory*

Yar (2005) has argued that routine activities theory cannot make a theoretical transition to cyberspace. While acknowledging that some of the “core concepts,” such as motivated offenders and guardianship find an online counterpart, he argues that other aspects of applying the theory to cybercrimes cannot be reconciled (Yar, 2005: 424). His main argument against a cyber-lifestyle/routine activities theory is that routine activities theory is premised on the

\(^{30}\) In this case, online guardianship was positively related to victimization.
intersection in *time* and *space* of victims and offenders in facilitating environments, and in cyberspace this convergence is less apparent, or in the author’s words:

…whereas people, objects and activities can be clearly located within relatively fixed and ordered spatio-temporal configurations in the “real world”, such orderings appear to destabilize in the virtual world. In other words, the routine activity theory holds that the “organization of time and space is central” for criminological explanation (Felson 1998: 148), yet the cyber-spatial environment is chronically spatio-temporally *disorganized*. The inability to transpose RAT’s postulation of ‘convergence in space and time’ into cyberspace thereby renders problematic its straightforward explanatory application to the genesis of cybercrimes (Yar, 2005: 424).

Yar’s point is well-taken. Clearly, as it is, the theory does not make a straightforward transition to explain crimes in cyberspace, but the core theoretical concepts and the notion that the three essential elements of a crime (i.e., victims, offenders, environments) intersect to create criminal opportunities, can be adapted to crimes involving cyberspace networks.

As was argued in Chapter 2, cybercrimes need to be thought of as network problems, meaning that victims and offenders do not come together in physical space, but instead interact through cyberspace networks (Eck & Clarke, 2003). Networks can facilitate this “coming together” of victims and offenders for a variety of types of crime, ranging from telemarketing scams, to mail fraud, to a range of cybercrimes. This reconceptualizing of the place element in routine activities theory as a cyberspace network however, does not end the discussion. To say that a cyberspace network alone is a proxy for a place is analogous to saying that a victim and offender being in the same state or the same country is enough to satisfy the criteria of the victim and offender intersecting in space. Clearly, victims and offenders can be part of the same
cyberspace network and never manifest opportunities for victimization. For this reason, it is useful to consider places in terms of specific virtual domains, such as websites. For instance, conceptually it makes more sense to think of a chat room or an online social networking site such as Myspace as a specific place for cyberstalking to occur, than to consider “the Internet” as a place. Further, online places are more manageable with respect to limiting opportunities for victimization through manipulation of the virtual environment (Reyns, 2010). The reason being that it is a simpler proposition to design crime prevention measures into a virtual domain through web design, security, and programming than it is to redesign physical environments with brick and mortar.

The theoretical transition of the place element from physical space, to networks, to online places, however, does not address Yar’s second criticism—that of the temporal divergence of victims and offenders. As an example, say a cyberstalker sends a threatening message to his victim through a social networking page. The victim may not be online to receive the message. Indeed, the victim may not know that they’ve been sent a message for hours, days, or even weeks, eliminating the traditional conception of an intersection in real time. However, in this scenario, the threatening message is still waiting for the victim, and when the recipient does eventually check their messages, the victim and offender’s action will intersect in time. The victim and offender may not interact in the “traditional” sense (i.e., face-to-face); instead, the offender acts, and waits for the victim to experience the intent of the act (i.e., the outcome or cyberstalking incident will have transpired).

Figure 5.1 depicts this asynchronous intersection of victims and offenders in online environments. Note that the conditions under which the victim and offender converge are contingent on both the place/network as well as an overlap in time. This overlap in time where
there is this action and reaction may be very near (e.g., AOL IM, Skype) or the time lag may be longer. The shaded inner triangle indicates the opportunity for a cybercrime such as cyberstalking to occur. Figure 5.1 may also prove a useful tool for applying lifestyle/routine activities to other types of crime in which the victim and offender do not physically meet (e.g., various types of frauds, such as Nigerian money schemes).

**Figure 5.1: The Asynchronous Intersection of Victims and Offenders in Online Environments**

![Diagram](image)

In sum, based on the results of the current study (e.g., the effects of online exposure, online proximity, and online deviance on overall cyberstalking victimization), lifestyle/routine activities theory can be modified to explain online types of victimization. As Tillyer and Eck (2009) have argued:

- Routine activities theory focuses on offenders making contact with targets at places.
- Some crimes, however, involve “crime at a distance.” Mail bombers, for example, do not come close to their targets. Internet fraudsters are able to steal from victims from
anywhere in the world. Either routine activities theory is limited to place-based crimes or it needs revision (Tillyer & Eck, 2009: 286).

The authors further suggest that Eck and Clarke’s (2003) substitution of *systems* for *places* solves the problem. The current study, therefore, supports Tillyer and Eck’s (2009) call for revising routine activities theory to explain crime and victimization within systems rather than restricting the theory solely to crimes transpiring within traditional conceptions of place. As the authors point out, research on routine activities in systems is still in the very early stages, and so the current study adds to this small body of research in testing the application of lifestyle/routine activities theory in cyberspace (a system). The next section addresses how cyberstalking victimization might be prevented in the future by reducing opportunities for victimization.

**PREVENTING CYBERSTALKING BY REDUCING OPPORTUNITIES**

Knowing what puts individuals at risk for victimization has obvious implications for preventing victimization in the future. One strategy for reducing cyberstalking victimization is to remove opportunities for it to occur (Reyns, 2010). The foremost method for doing so is situational crime prevention, which is a scientific method for reducing opportunities for crime (Clarke, 2010). By manipulating the immediate situation or environment in which crimes occur, and focusing on very specific forms of crime, this method has proven to be successful in reducing a number of types of crime (e.g., see Clarke, 1980, 1983, 1997). There are 25 techniques of situational crime prevention grouped into five broad categories, including: (1) increasing the effort involved to commit the crime, (2) increasing the risks associated with engaging in the crime, (3) reducing the rewards associated with carrying out the crime, (4)
reducing provocations to commit the crime, and (5) removing excuses for rationalizing the crime (Cornish & Clarke, 2003).

This study has identified several factors which increase likelihood of cyberstalking victimization. Specifically, the number of open social networking accounts, the number of daily updates to these accounts, use of AOL Instant Messenger, use of an online profile tracker, allowing strangers access to online information, engaging in online deviance, and possessing low self-control were all positive predictors of cyberstalking victimization. Table 5.1 presents some preventive tactics, grounded in situational crime prevention, prior research on cyberstalking, and the results of the current study, for reducing opportunities for cyberstalking victimization. In terms of increasing the effort involved in successfully committing the crime, individuals can control who has access to their personal information online, limit online exposure, and limit their online proximity to motivated offenders. Increasing the risk can be accomplished by reporting unwanted contacts to online place managers, such as website administrators or service providers. Rewards can be reduced by minimizing the exposure of one’s personal information online, keeping personal information vague, and deflecting unwanted attempts at communication (e.g., block the user’s attempts at communication through filters). Reducing provocations can be accomplished by not reciprocating when contacted unless it is to inform the other party (the cyberstalker) to cease communications, and by ensuring that the cyberstalker is not intentionally provoked through name-calling or sending an unintended message (e.g., that the victim may be romantically interested). Excuses can be removed by making it clear to the cyberstalker that the repeated contacts or pursuit behaviors are unwanted and unacceptable, and by avoiding risky environments.
Table 5.1: Using Situational Crime Prevention to Limit Opportunities for Cyberstalking

<table>
<thead>
<tr>
<th>Increase the Effort</th>
<th>Increase the Risks</th>
<th>Reduce the Rewards</th>
<th>Reduce Provocations</th>
<th>Remove Excuses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control access to online information</strong></td>
<td><strong>Report unwanted contact</strong></td>
<td><strong>Minimize exposure of personal information</strong></td>
<td><strong>Do not escalate interactions</strong></td>
<td><strong>Do not mislead the cyberstalker</strong></td>
</tr>
<tr>
<td>- Do not make email address or other contact information available to strangers</td>
<td>- If unwanted contact occurs through email, blogs, websites, text messages, message boards or online social networks, report the behaviors to place managers</td>
<td>- Do not post personal information (interests, relationship details) online</td>
<td>- Do not intentionally agitate or threaten potential cyberstalkers if unwanted communications are received</td>
<td>- Cyberstalkers should know that the pursuit behaviors are unwanted and unacceptable</td>
</tr>
<tr>
<td>- Change online identity if necessary</td>
<td></td>
<td>- Do not post contact information (e.g., phone numbers, email addresses) online</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Limit online exposure</strong></td>
<td><strong>Make it easier to report cyberstalking</strong></td>
<td><strong>Keep personal information vague</strong></td>
<td><strong>Do not reciprocate</strong></td>
<td><strong>Avoid risky cyber-environments</strong></td>
</tr>
<tr>
<td>- Minimize the number of social networks information is posted on</td>
<td>- Online place managers can make it easier to report unwanted contacts/pursuit by providing more ways to do so</td>
<td>- If participation in online communities requires disclosing information, it should be kept vague</td>
<td>- If unwanted online communications transpire, do not reciprocate unless it is to tell the other party to stop</td>
<td>- Stay out of cyber-environments that could make one a target (e.g., chat rooms oriented around sex)</td>
</tr>
<tr>
<td>- Limit the number of daily updates to online social networks</td>
<td>- Place managers can ensure that electronic communications are not anonymous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Limit online proximity</strong></td>
<td><strong>Improve surveillance of cyber-environments</strong></td>
<td><strong>Deflect unwanted communications</strong></td>
<td><strong>Control problem users</strong></td>
<td><strong>Provide a code of conduct</strong></td>
</tr>
<tr>
<td>- Do not allow strangers access to online social networks</td>
<td>- Online place managers can monitor sites for misuse</td>
<td>- Enable spam filters on incoming messages</td>
<td>- Online place managers can restrict access of websites or web-communications of those identified as problems</td>
<td>- Place managers and super controllers should post rules or a code of conduct for site users</td>
</tr>
<tr>
<td>- Do not allow strangers access to other personal web sites</td>
<td>- Super controllers can make crime prevention a priority</td>
<td>- Block communications from unwanted parties</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Reyns (2010).
Third parties can also play a role in reducing opportunities for cyberstalking victimization. Those who have influence over the routine activities of places are called place managers (Eck, 1994), and these individuals could feature prominently in preventing cybercrimes such as cyberstalking. Sampson, Eck, and Dunham (2010) suggested that controllers (i.e., guardians, handlers, and place managers) sometimes fail in their supervision/protection responsibilities, and when that happens, crimes are more likely to be successfully carried out. The authors argue that other parties (such as people, organizations, or institutions) called super controllers ultimately provide the incentives for controllers, thereby regulating crime.

Figure 5.2 illustrates the relationship between controllers and super controllers as suggested by Sampson, et al. (2010). According to the authors, there are a number of types of super controllers depending upon the prospective crime scenario (e.g., organizations, media, different types of markets), but an example related to the prevention of cyberstalking may be those decision-makers that set the agenda for internet providers and companies with websites. A programmer or web designer may have some level of control over what transpires within the website they are responsible for, making them a place manager for that website, but they are still restricted by the tools they are provided with and the constraints placed upon them by their superiors; these superiors are super controllers. Ultimately, online place managers and super controllers may have a large role to play in preventing cybercrimes. Table 5.1 provides ideas for online place managers and super controllers in preventing cyberstalking victimization, such making it easier to report problem behaviors online, improving surveillance in cyber-

31 Controllers are those who discourage crime (e.g., security guards, bystanders) and have varying degrees of responsibility and effectiveness in doing so (Clarke, 1992; Felson, 1995).
environments (e.g., monitoring sites for misuse), controlling problem users (e.g., restricting access to site or services), and providing a code of conduct for site users (i.e., to remove excuses).

Figure 5.2: The New Crime Triangle

Source: Adapted from Sampson, Eck, and Dunham (2010).

LIMITATIONS

The results reported in this dissertation should be considered in light of the limitations of the data. Certain methodological choices raise four issues that potentially limit the usefulness of the study’s results: (1) the response rate, (2) temporal order considerations, (3) the measure of low self-control, and (4) the possible overlap/cross-over between physical stalking and cyberstalking. Regarding the response rate, as was argued in Chapter 3, while it is not uncommon to receive a low response rate for a web-based survey (e.g., Couper, 2000; Dillman et al., 2009), this does not mean that the usual dangers associated with low response rates (e.g., lack of generalizability) are not a concern. In addition, the sample was drawn from a single urban university in the Midwest, further limiting the generalizability to post-secondary student
populations. Therefore, the results should be approached with some caution, with an eye for their utility.

The second issue that potentially limits the results is temporal order of the relationships among the variables. Namely, while the measures of cyberstalking victimization are unbounded (i.e., lifetime prevalence of victimization), the measures of the independent variables (e.g., time online, number of parties attended) are temporally bounded (e.g., within the last month). This allows for the possibility that the relationships between variables with different time referents do not operate in the manner they appear to. An example is the effect of guardianship on cyberstalking, in which the guardianship measure, using a profile tracker, actually increased likelihood of victimization 1.8 times. As previously discussed, it may be that adopting such guardianship measures was a reaction to a previous victimization, and not an antecedent to cyberstalking victimization.

The third limitation is the measure of low self-control. As was described in Chapter 3, Grasmick et al.’s (1993) 24-item scale for measuring self-control was not utilized in the current study. Instead, fewer survey questions measuring some of the primary behaviors associated with low self-control were used, and reliability of the survey items used to construct the measure was somewhat low by traditional scale construction standards (Cronbach’s $\alpha = 0.55$). There are two possible explanations for the performance of low self-control in the current study: (1) either the survey items used to construct the measure do not adequately reflect the theoretical concept, or (2) the effects of low self-control manifest themselves differently in online environments.

A final issue that needs to be addressed is the cross-over between physical stalking and cyberstalking. The study was designed to measure those online behaviors that may act as risk factors for online victimization. However, it also makes sense that online victimization may be
influenced by one’s offline lifestyle. While these effects were controlled, measures of physical stalking were not collected. In the future, it would be beneficial to explore this possible cross-over between physical lifestyles/routine activities, online lifestyles/routine activities, physical stalking, and cyberstalking.

**FUTURE RESEARCH**

Limitations also provide opportunities for improvements in future research. The next step in studying cyberstalking should be to make methodological improvements in the areas discussed above, particularly in attaining higher response rates, using more conventional and tested measures of self-control, and developing bounded measures of victimization. Further, the sample used in the current study was drawn from a single urban university in the Midwest. In the future it would be beneficial to expand to other universities and other populations to better understand the cyberstalking victimization of college students. Moreover, the data presented in the current study represent a single point in time, and ideally longitudinal data is desirable in establishing causal relationships. Therefore, succeeding studies in cyberstalking would benefit from obtaining longitudinal data. Perhaps most critical to advancing the field of cyberstalking research is a need for work that examines the links between physically proximal stalking and cyberstalking. As was explained in Chapter 1, it is not clear whether cyberstalking is different that physically proximal stalking. It is true that mechanically it is different (electronic devices are used to pursue the victim), but many questions remain unanswered. Is cyberstalking part of a pattern or other behaviors that largely take place in offline? Are there differences in lifestyle, self-control, or deviance among cybercrime victims? Among cyberstalkers? Future research should strive to answer these questions, as such answers would not only inform the cyberstalking knowledge base, but the stalking literature as well.
Future researchers may also consider expanding on or testing the revised lifestyle/routine activity theory as proposed in the current study. As argued by Tillyer and Eck (2009), the rethinking of some types of crimes as systems problems is an untapped source for future research on routine activities theory (Eck & Clarke, 2003). The current study has taken Eck and Clarke’s (2003) model a step further by also addressing the issue of time with respect to the intersection in time and space of motivated offenders and suitable targets in facilitating environments. The lifestyle/routine activities model utilized in the current study has potential in explaining not only internet-based crimes, but any crime committed at a distance (i.e., systems crimes).

**CONCLUDING REMARKS**

If the results presented in this dissertation are representative of the cyberstalking victimization of college students in the United States generally, then it is clear that cyberstalking is a problem in need of address, both administratively by universities and legally by law makers. Although the measure of cyberstalking employed herein was based on lifetime prevalence of victimization, for the majority of the sample, their lifetime Internet use is likely only about ten years or so. The finding that over 40% of the sample experienced one or more types of online pursuit in this short amount of time suggests that, like the growth of technologies that facilitate the crime, cyberstalking is likely to increase, particularly among young people such as college students (Parsons-Pollard & Moriarty, 2009). Further, the state laws that prohibit behaviors such as cyberstalking not only vary from state to state, but tend to be overly broad, creating difficulties for victims, law enforcement, and prosecutors. While not examined in the current study, cyberstalking also has harmful consequences, creating a number of psychological and emotional responses in victims (Parsons-Pollard & Moriarty, 2009). According to Karjane, Fisher, & Cullen (2002), university policies governing stalking and cyberstalking behaviors are
either inadequate or do not exist, and considering the prevalence of victimization suggested by
this study, and the daily growth of technologies and networks to facilitate the crime, this is an
issue that may soon be difficult for universities to ignore. For all of these reasons, more work is
needed in measuring, responding to, and understanding the consequences of cyberstalking. Only
then can cybercrime laws and university policies address the issue based on empirical evidence.
REFERENCES


Appendix 1: States with Cyberstalking-Related Laws and Inclusion of Fear in Definition of Cyberstalking

<table>
<thead>
<tr>
<th>State</th>
<th>Mention of Fear</th>
<th>Requirement of Fear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Alaska</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Arizona</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Arkansas</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>California</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Colorado</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Connecticut</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Delaware</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Florida</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Georgia</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Idaho</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Illinois</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Indiana</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Iowa</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Kansas</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Louisiana</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Maine</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Maryland</td>
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<td>No</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Michigan</td>
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<td>No</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mississippi</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Missouri</td>
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<td>No</td>
</tr>
<tr>
<td>Montana</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Nebraska</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Nevada</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>New Jersey</td>
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<td>No</td>
</tr>
<tr>
<td>New Mexico</td>
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<td>Yes</td>
</tr>
<tr>
<td>New York</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>North Dakota</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

32 The state either has a cyberstalking law or a harassment or stalking law covering cyberstalking.
<table>
<thead>
<tr>
<th>State</th>
<th>Requirement of Fear</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Oklahoma</td>
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<td>No</td>
</tr>
<tr>
<td>Oregon</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>South Carolina</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>South Dakota</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Tennessee</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Texas</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Utah</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Vermont</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Virginia</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Washington</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>West Virginia</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Wyoming</td>
<td>Yes*</td>
<td>Yes</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>18</td>
</tr>
</tbody>
</table>

*Indicates some variation of the word fear such as “a feeling of serious alarm” or “severe emotional distress.”

Note: If a state included a number of conditions for legally defining an incident as stalking (among them fear) that may not be akin to the emotional state of fear (such as annoyance) the Requirement of Fear column listed above was marked “no.” For example, Texas’ statute begins “A person commits an offense if, with intent to harass, annoy, alarm, abuse, torment, or embarrass another…” In this case, Texas’ statute provides for a number of behaviors that will be considered stalking, and does not necessarily require “fear,” “alarm,” or “torment” as a necessary condition of cyberstalking.


Online Social Networks: A New Arena for Victimization

We are inviting you to participate in a first-of-its-kind research study examining the phenomena of online social networks and blogs. As part of our doctoral dissertation research, this survey will ask questions about your use of the Internet and online social networks/blogs, as well as any annoyances and/or dangers you have encountered online. This survey is designed to allow undergraduate college students to speak out about any negative online experiences they have had, and it will serve as the basis for the examination of the possible threats of online social networks/blogs.

You were randomly selected to participate in this research study, along with 10,000 of your fellow students. Participation in this survey will take 10-20 minutes of your time. Your responses will be both password and firewall protected, and will be made available only to the researchers. Once you have finished the survey, your participation will be complete, and you will not be contacted further. In addition, your personal identification information, including your email address, will not be associated with your responses in an effort to preserve your anonymity. There is no payment or direct benefits to you for participation.

PARTICIPATION IN THIS RESEARCH STUDY IS STRICTLY VOLUNTARY, AND YOU HAVE THE OPTION OF QUITTING AT ANY TIME. Participation or non-participation will not affect any legal rights that you would normally have. If, in the event you feel upset or emotionally distressed as a result of the information you provided for this survey, you do have the option of contacting the University Counseling Center, 316 Dyer Hall (513-556-0648). If you have any questions about the survey or study, you are welcome to contact us. The University of Cincinnati Institutional Review Board - Social and Behavioral Sciences reviews all non-medical research projects that involve human participants to be sure the rights and welfare of participants are protected. If you have questions about your rights as a research participant, you may contact the University of Cincinnati Institutional Review Board - Social and Behavioral Sciences at (513) 558-5784. If you have a concern about the study you may also call the UC Research Compliance Hotline at (800) 889-1547, or you may write to the Institutional Review Board at University of Cincinnati, 1060 Union Hall, 2999 Coleraine Drive, Cincinnati, OH 45221.
Board-Social and Behavioral Sciences, G-28 Wherry Hall, ML 0567, 3225 Eden Avenue, PO Box 670567, Cincinnati, OH 45267-0567, or you may email the IRB office at irb@ucmail.uc.edu. The results of the survey are scheduled to be made available in June of 2010; please contact the investigators listed at the top of this page for more information.

**By taking this survey, you are indicating your consent for your answers to be used for research study. Please print a copy of this Information Sheet for your records.**
Appendix 3: 1st Wave Email Invitation

Subject Line: Online Social Networks Research Project

Hello Fellow UC Student,

As part of our doctoral dissertation research, we are inviting you to participate in a first-of-its-kind survey examining the phenomena of online social networks and blogs, such as Myspace and Facebook. You will be asked questions about your use of the Internet and online social networks/blogs, as well as any annoyances and/or dangers you have encountered online including any possible cyberstalking incidents. This survey is essential for our dissertation work, which is a requirement for graduation, and we greatly appreciate your help. If you have any questions, please let us know. Thank you so much for your participation!

To participate in our study, please follow the link below:

http://www.zoomerang.com/Survey/?p=WEB2292ZKV4NAY

Sincerely,
Billy Henson, M.S.
Department of Criminal Justice

Brad Reyns, M.S.
Department of Criminal Justice
Appendix 4: 2nd Wave Email Invitation

Subject Line: Online Social Networks Research Project

Hello Fellow UC Student,

As college students, we often help each other out. We are asking for a few minutes of your time to complete a survey that will help us carry out our doctoral dissertation research.

We invite you to participate in a first-of-its-kind survey examining the phenomena of online social networks and blogs, such as MySpace and Facebook. Questions ask about your use of the Internet and online social networks/blogs, as well as any annoyances and/or dangers you have encountered online including any possible cyberstalking incidents.

Your responses are essential for us to finish our degree. We greatly appreciate your help. If you have any questions, please let us know. If you have previously completed the survey, please disregard this email. Thank you so much for your participation!

To participate in our study, please follow the link below:

http://www.zoomerang.com/Survey/?p=WEB2295WEYVCCG

Sincerely,
Billy Henson, M.S.
Department of Criminal Justice

Brad Reynolds, M.S.
Department of Criminal Justice
Appendix 5: Final Wave Email Invitation

Subject Line: Online Social Networks Research Last Call

Hello Fellow UC Student,

We have previously invited you to participate in our study of online social networks and related phenomena. This is our third and final wave of invitations. We are asking for more students to participate because we have fallen short of our target response goal. Your responses are essential for us to finish our degrees. We hope you will help us.

We are asking for a few minutes of your time to complete a survey that will help us carry out our doctoral dissertation research. The survey should take about 15 minutes. Questions ask about your use of the Internet and online social networks/blogs, as well as any annoyances and/or dangers you have encountered online including any possible cyberstalking incidents.

We greatly appreciate your help. If you have any questions, please let us know. If you have previously completed the survey, please disregard this email. Thank you so much for your participation!

To participate in our study, please follow the link below:

http://www.zoomerang.com/Survey/?p=WEB2295WEYVCCG

Sincerely,

Billy Henson, M.S.
Department of Criminal Justice

Brad Reyns, M.S.
Department of Criminal Justice
Appendix 6: Cyberstalking Survey Instrument

Questions marked with an asterisk (*) are necessary to complete the survey.

1. *Would you like to continue with the survey?
   - Yes
   - No
   (If yes, survey continues; if no, survey ends)

2. What is your gender?
   - Male
   - Female

3. *What is your age?
   - Under 18
   - 18
   - 19
   - 20
   - 21
   - 22
   - 23
   - 24
   - Over 24
   (If 18 – 24, survey continues; if no, survey ends)

4. What is your race/ethnicity?
   - American Indian
   - Asian/Pacific Islander
   - African American
   - Hispanic
   - White
   - Other/Unknown

5. What is your grade/class standing?
   - Freshman
   - Sophomore
   - Junior
   - Senior
   - Graduate
   - Other
6. What is your sexual orientation?
   - Heterosexual/Straight
   - Gay/Lesbian
   - Bisexual
   - Other

7. What is your current relationship status?
   - Single
   - Casual Dating
   - Long-Term Dating
   - Married/Living with Someone
   - Divorced/Separated/Widowed

8. Where do you live during the school year?
   - On-Campus Housing
   - Off-Campus University Housing
   - Off-Campus Non-University Housing
   - Home of Parent/Legal Guardian or Relative

9. With whom do you live during the school year?  (Check all that apply)
   - Live Alone
   - Student Roommate(s)
   - Non-Student Roommate(s)
   - Romantic Partner/Significant Other
   - Parents
   - Other Relatives

10. What clubs/organizations do you participate in regularly? (Check all that apply)
    - University Athletic Teams
    - Greek Organizations
    - Honorary Organizations
    - Religious Organizations
    - Major/Department Organizations
    - None
    - Other, please specify

11. Did you transfer from another college/university?
    - Yes
    - No
12. Which of the following best describes your cumulative undergraduate grade point average?
   - Below 0.67
   - 0.67 - 1.66
   - 1.67 – 2.66
   - 2.67 – 3.66
   - 3.67 – 4.0

13. Since beginning school at UC, how many days/night do you go to parties in an average month?
   - 0 – 30

14. Since beginning school at UC, how many days/night do you go to bars or clubs in an average month?
   - 0 – 30

15. Since beginning school at UC, how many alcoholic drinks do you have in a average week?
   - 0 – 50

16. Since beginning school at UC, how many times do you use drugs in a average week?
   - 0 – 50

17. Please choose the characteristics that best describe you:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outgoing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy going</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easily Upset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quiet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stubborn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intimidating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apologetic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sympathetic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceptive</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
18. Please indicate the most appropriate response to the statements below:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I consider myself to be cautious.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I consider myself to be argumentative.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I have trouble controlling my temper.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I always devote time to studying.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I often confront people when they make me upset.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I consider myself to be a risk-taker.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I spend a lot of time thinking about my future.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I have a lot of money charged on credit cards.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

19. Please indicate the most appropriate response to the statements below:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>I value my mother's opinion.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I value my father's opinion.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I like to spend time with my family.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I frequently talk to my family.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I value my friends' opinions.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I like to spend time with my friends.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>I frequently talk to my friends.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

20. Do you use the Internet in your home/room?
   - Yes
   - No

21. Where else do you access the Internet? *(Please Check All That Apply)*
   - School Library
   - School Computer Lab
   - Work/Office
   - Parents/Relatives’ Home
   - Classroom
   - School Food Court
   - Public Library
   - Coffee Shop/Café
   - PDA/Blackberry
   - Cell Phone
   - Other, please specify
22. On average, how much time do you actively spend online each day? *(Including Email, IM, Blogs, etc.)*
   - Less Than 1 Hour
   - 1 Hour
   - 2 Hours
   - 3 Hours
   - 4 Hours
   - 5 Hours
   - 6 Hours
   - 7 Hours
   - 8 Hours
   - 9 Hours
   - 10 Hours
   - 11 Hours
   - 12 Hours
   - 13 Hours
   - 14 Hours
   - 15 Hours
   - 16 Hours or More

23. What forms of electronic communication do you frequently use? *(Please Check All That Apply)*
   - Instant Messengers (AIM, Yahoo Messenger, etc.)
   - Email
   - Chat Rooms
   - Social Network/Blog Sites (Facebook, MySpace, Twitter etc.)
   - Text Messaging (Cell Phone, PDA, etc.)
   - Online Video Games
   - Other, please specify

24. What is the most frequent method you use to communicate with your family/friends?
   - In Person
   - Over the Phone
   - Online
   - Other

25. What percentage of your friends would you estimate frequently use some type of online communication? *(Example: Instant Messenger, Social Networks, etc.)*
   - 0 – 100 (increments of 5)

26. What percentage of your friends would you estimate that you talk to online, in a average week? *(Example: Instant Messenger, Social Networks, etc.)*
   - 0 – 100 (increments of 5)
PLEASE INDICATE IF YOU HAVE USED ANY OF THE FOLLOWING FORMS OF ONLINE COMMUNICATION TO PERFORM THE DESCRIBED ACTIVITIES.

27. Have you ever flirted with a friend or acquaintance, WITH the intention or hope of pursuing a romantic or sexual relationship, including just hooking up?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Social Network/Blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28. Have you ever flirted with a friend or acquaintance, WITHOUT the intention or hope of pursuing a romantic or sexual relationship, including just hooking up?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Social Network/Blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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</tr>
</tbody>
</table>

29. Have you ever flirted with someone you didn't know, WITH the intention or hope of pursuing a romantic or sexual relationship, including just hooking up?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Social Network/Blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

30. Have you ever flirted with someone you didn't know, WITHOUT the intention or hope of pursuing a romantic or sexual relationship, including just hooking up?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Social Network/Blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
31. Have you ever hooked up (had brief sexual encounter) with someone you met online?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Network/Blog</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messenger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

32. * Do you, or have you in the past, regularly use a social network/blog account? *(Example: MySpace, Facebook, Livejournal, etc.)*

- Yes
- No

(If yes, survey continues with question 33; if no, skips to question 68)

**SOCIAL NETWORK ACTIVITY SECTION**

**ALL OF THE FOLLOWING QUESTIONS ARE REGARDING ONLY SOCIAL NETWORK ACTIVITY. THE FOLLOWING QUESTIONS REFER TO ACTIVITY/COMMUNICATION THROUGH MYSPACE, FACEBOOK, LIVEJOURNAL, ETC.**

33. How long have you had a social network/blog account?

- 1 Month or Less
- 3 – 117 Months (increments of 3)
- 120 Months or More (10 Years)

34. How many social network/blog accounts have you opened, even if you don’t use them regularly?

- 1 – 14
- 15 or More

35. What type of social network/blog account do you have? *(Please Check All That Apply)*

- Bebo
- Classmates.com
- Facebook
- Friendster
- Livejournal
- MySpace
- Orkut
- Twitter
- Windows Live Spaces
- Xanga
- Other, please specify
36. Why did you open a social network/blog account? (Please Check All That Apply)
   o Curiosity
   o To Keep in Touch with Family/Friends
   o To Meet New Friends
   o To Meet New Romantic Partners
   o To Flirt
   o Live Out Fantasy Online
   o Other, please specify

37. How accurate (honest) is the information on your account?
   o Completely False
   o Mostly False with Some Truth
   o Mostly True with Some Exaggeration
   o Completely True

38. In an average week, how many times do you update the information on your social
    network/blog account(s)?
   o 0 – 24
   o 25 or More

39. How many friends would you estimate you have in total on all your online social
    network/blog account(s)?
    (open ended)

40. In an average day, how many hours do you spend on your social network/blog site(s)?
   o Less Than 1 Hour
   o 1 Hour
   o 2 Hours
   o 3 Hours
   o 4 Hours
   o 5 Hours
   o 6 Hours
   o 7 Hours
   o 8 Hours
   o 9 Hours
   o 10 Hours
   o 11 Hours
   o 12 Hours
   o 13 Hours
   o 14 Hours
   o 15 Hours
   o 16 Hours or More
41. What percentage of your friends would you estimate also have social network/blog accounts?
   - 0 – 100 (increments of 5)

42. Which of the following do you include on your social network/blog account(s)? (Please Check All That Apply)
   - First Name
   - Full Name
   - Nickname
   - Birth Date
   - Relationship Status
   - Sexual Orientation
   - Home Town
   - School Address
   - Home Address
   - Job Title
   - Work Name
   - Work Address
   - Instant Messenger ID
   - Email Address
   - Home Phone Number
   - Cell Phone Number
   - School Name
   - Academic Major
   - Class Schedule
   - Clubs/Organizations
   - Address for Other Social Network/Blog Sites
   - Interests/Activities
   - Photos
   - Videos
   - Top Friends
   - Networks
   - Notes/Blogs
   - Applications
   - Other, please specify

43. Have you ever posted a profile picture of yourself on your social network/blog account?
   - Yes
   - No
44. Have you ever posted photos on your social network/blog account, other than a profile picture?
   o Yes
   o No

45. How many photos would you estimate that you have on your social network/blog account?
   (open ended)

46. What types of places are the people in your posted photos typically at? (Please Check All That Apply)
   o Room/Apartment/Home
   o Work
   o Restaurants
   o Sporting Events
   o Extra-Curricular Activities
   o Parties
   o Bars and Clubs
   o Outdoor Activities (Ex: Camping, Swimming, etc.)
   o Other, please specify

47. Have you ever posted any of the following type of photos on your social network/blog account, even if you were only joking around in the pictures?

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<tbody>
<tr>
<td>Yes</td>
<td>No</td>
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<tr>
<td>You and/or Your Friends Drinking Alcohol</td>
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<tr>
<td>You and/or Your Friends Doing Drugs</td>
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<tr>
<td>You and/or Your Friends Doing Things That You Would Consider Sexually Provocative (Ex: Nudity, Sexual Poses, etc.)</td>
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48. Have you ever described any of the following interests or experiences on your social network/blog account?

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<tr>
<td>Yes</td>
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<tr>
<td>Experiences with Alcohol Use</td>
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<td>Experiences with Drug Use</td>
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<tr>
<td>Sexual Experiences, Interests, or Fantasies</td>
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</table>
49. Have you ever joined a club/group through your social network/blog account that encourages any of the following activities?

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<td>Yes</td>
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<td>No</td>
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<tr>
<td>Drinking Alcohol</td>
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<td>Using Drugs</td>
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<tr>
<td>Having Sex</td>
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50. Have you ever added someone as friend whom you didn't know?
   - Yes
   - No

51. Have you ever communicated with someone through other forms of electronic communication that you first met on your social network/blog account? (Example: IM, Email, Text Messaging, etc.)
   - Yes
   - No

52. Have you ever met someone in person that you met for the first time on your social network/blog account?
   - Yes
   - No

53. Have you ever dated someone in person that you met for the first time on your social network/blog account?
   - Yes
   - No

54. Do you have your social network/blog account set to private or limited access?
   - Yes
   - No

55. Have you ever joined an online service that assists you in acquiring new friends for your social network/blog account? (Example: Friendtrain, Whoretrain, Pimptrain, etc.)
   - Yes
   - No

56. Have you ever used an online program that allows you to update multiple social network accounts at once? (Example: ping.fm)
   - Yes
   - No
57. Have you ever used or tried to use a profile tracker that keeps track of who views your account? (Example: *Trakzor*)
  - Yes
  - No

58. How likely do you think it is that someone you had/have an intimate relationship with will use the information on your social network/blog to do any of the following?

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59. How likely do you think it is a friend or acquaintance will use the information on your social network/blog to do any of the following?

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60. How likely do you think it is that a stranger will use the information on your social network/blog to do any of the following?

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61. How afraid are you that someone you had/have an intimate relationship with will use the information on your social network/blog to do any of the following?

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62. How afraid are you that a friend or acquaintance will use the information on your social network/blog to do any of the following?

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63. How afraid are you that a stranger will use the information on your social network/blog to do any of the following?

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64. Has anyone ever hacked into your social network/blog account?
- o Yes
- o No
- o Unsure

65. Has anyone ever hacked into one of your friend's social network/blog account?
- o Yes
- o No
- o Unsure

66. Has anyone ever opened a social network/blog account posing as you?
- o Yes
- o No
- o Unsure

67. Has anyone ever opened a social network/blog account posing as one of your friends?
- o Yes
- o No
- o Unsure
Questions marked with an asterisk (*) are necessary to complete the survey.

ONLINE ACTIVITY SECTION
ALL OF THE FOLLOWING QUESTIONS ARE REGARDING ONLINE ACTIVITY, OTHER THAN SOCIAL NETWORK/BLOG ACCOUNT(S) ACTIVITY, SUCH AS ACTIVITY/COMMUNICATION WITH INSTANT MESSENGERS, EMAIL, TEXT MESSAGING, ETC.

68. Do you regularly use any of the following online sites/groups? (Please Check All That Apply)
   - YouTube
   - Yahoo Groups
   - Google Groups
   - Match.com
   - eHarmony
   - AOL Instant Messenger (AIM)
   - Other, please specify

69. * Have you ever posted photos/videos online?
   - Yes
   - No

   (If yes, continues to question 70; if no, skips to question 73)

70. If so, who do you typically post photos/videos of online? (Please Check All That Apply)
   - Yourself
   - Your Family
   - Your Boyfriend/Girlfriend
   - Your Ex-Boyfriend/Girlfriend
   - Your Spouse/Partner
   - Your Ex-Spouse/Partner
   - Friends of the Same Sex as You
   - Friends of the Opposite Sex as You
   - Other, please specify

71. What types of places are the people in your posted photos/videos typically at? (Please Check All That Apply)
   - Room/Apartment/Home
   - Work
   - Restaurants
   - Sporting Events
   - Extra-Curricular Activities (Example: Organization Meetings)
   - Parties
   - Bars and Clubs
72. Have you ever posted any of the following type of photos/video online, even if you were only joking around? (Please check all that apply)
   - You and/or Your Friends Drinking Alcohol
   - You and/or Your Friends Doing Drugs
   - You and/or Your Friends Acting Sexually Provocative (Example: Kissing, Nudity, etc.)
   - None of the Above

73. Have you ever met someone in person that you first met on online?
   - Yes
   - No

74. Have you ever dated someone that you first met on online?
   - Yes
   - No

75. Have you ever described interests or experiences with any of the following online?

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<thead>
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<th></th>
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<tbody>
<tr>
<td>Alcohol Use</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Drug Use</td>
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<tr>
<td>Sexual Experiences, Interests, or Fantasies</td>
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</tbody>
</table>

76. Has anyone ever hacked into any of your online programs? (Ex: Email, Instant Messenger, etc.)
   - Yes
   - No
   - Unsure

77. Has anyone ever hacked into any of your friends' online programs? (Ex: Email, Instant Messenger, etc.)
   - Yes
   - No
   - Unsure

78. Has anyone ever pretended to be you online, without your permission?
   - Yes
   - No
   - Unsure
79. Has anyone ever pretended to be one of your friends online, without their permission?
   - Yes
   - No
   - Unsure

80. How likely do you think it is that someone you had/have an intimate relationship with will use an online program (Ex. *Instant Messenger, Email, etc.*) to do any of the following?

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81. How likely do you think it is a friend or acquaintance will use an online program (Ex. *Instant Messenger, Email, etc.*) to do any of the following?

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82. How likely do you think it is that a stranger will use an online program (Ex. *Instant Messenger, Email, etc.*) to do any of the following?

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83. How afraid are you that someone you had/have an intimate relationship with will use an online program (Ex. *Instant Messenger, Email, etc.*) to do any of the following?

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172
84. How afraid are you that a friend or acquaintance will use an online program (Ex. Instant Messenger, Email, etc.) to do any of the following?

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<tr>
<td>Threaten to Physically Harm You</td>
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</table>

85. How afraid are you that a stranger will use an online program (Ex. Instant Messenger, Email, etc.) to do any of the following?

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harass You</td>
<td>Not Likely at All</td>
<td>Very Likely</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Stalk You</td>
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<tr>
<td>Threaten to Physically Harm You</td>
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</tbody>
</table>

Questions marked with an asterisk (*) are necessary to complete the survey.

86. * Has anyone ever contacted you or attempted to contact you on more than one occasion online after you asked/told them to stop?
   - Yes
   - No

(If yes, opens incident report; if no, continues to question 87)

Questions marked with an asterisk (*) are necessary to complete the survey.

**Incident Report**

1. * How many different people have contacted you or attempted to contact you on more than one occasion online after you asked/told them to stop?
   - 1 – 4
   - 5 or more

   (An incident report is filled out for each incident up to five)

2. How did you know the person that contacted or attempted to contact you? (Ex: Husband, Ex-Wife, Girlfriend, Ex-Boyfriend, Friend, Former Friend, Stranger, etc.) Please Do Not Put Names
   (open ended)
3. How long have you known that person?
   - N/A
   - Less Than 1 Month
   - 1 – 120 Months
   - More Than 120 Months

4. How many times did that person contact or attempt to contact you after you asked/told them to stop?
   - 1 – 99
   - 100 or More

5. How long did that person contact or attempt to contact you after you asked/told them to stop? *(Ex: 2 weeks, 4 months, etc.)*
   (open ended)

6. How did that person contact or attempt to contact you? *(Please Check All That Apply)*
   - Social Network/Blog Message Board/Wall
   - Social Network/Blog Messenger Program
   - Email
   - Instant Messenger
   - Text Message
   - Telephone
   - Letter
   - In Person
   - Other, please specify

7. Did that person's actions cause you to fear for your personal safety?
   - Yes
   - No

8. How afraid were you?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Afraid at All</td>
<td>Very Afraid</td>
<td></td>
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</tbody>
</table>

9. What did you do as a result of that person repeatedly contacting or attempting to contact you? *(Check All That Apply)*
   - Ignore Him/Her
   - Tell Your Friends or Relatives
   - Report the Incident to the Social Network/Blog Provider
   - Report the Incident to University Staff
   - Report the Incident to the Police
   - Confront that Person Online
   - Confront that Person Face-to-Face/Over the Phone
   - Set Account to Private or Limited
   - Block that Person
Questions marked with an asterisk (*) are necessary to complete the survey.

87. * Has anyone ever persistently harassed or annoyed you on more than one occasion online?
   o Yes
   o No
   (If yes, opens incident report; if no, continues to question 88)

Questions marked with an asterisk (*) are necessary to complete the survey.

Incident Report
1. * How many different people have persistently harassed or annoyed you on more than one occasion online?
   o 1 – 4
   o 5 or more
   (An incident report is filled out for each incident up to five)

2. How did you know the person that persistently harassed or annoyed you? (Ex: Husband, Ex-Wife, Girlfriend, Ex-Boyfriend, Friend, Former Friend, Stranger, etc.) Please Do Not Put Names
   (open ended)

3. How long have you known that person?
   o N/A
   o Less Than 1 Month
   o 1 – 120 Months
   o More Than 120 Months

4. How many times did that person persistently harass or annoy you?
   o 1 – 99
   o 100 or More

5. How long did that person persistently harass or annoy you? (Ex: 2 weeks, 4 months, etc.)
   (open ended)

6. Through what means did that person persistently harass or annoy you? (Please Check All That Apply)
   o Social Network/Blog Message Board/Wall
   o Social Network/Blog Messenger Program
   o Email
   o Instant Messenger
7. Did that person's actions cause you to fear for your personal safety?
   - Yes
   - No

8. How afraid were you?

<p>| | | | | | | | | | |</p>
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<td>6</td>
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<tr>
<td>Not Afraid at All</td>
<td>Very Afraid</td>
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</table>

9. What did you do as a result of that person persistently harassing or annoying you?
   - Ignore Him/Her
   - Tell Your Friends or Relatives
   - Report the Incident to the Social Network/Blog Provider
   - Report the Incident to University Staff
   - Report the Incident to the Police
   - Confront that Person Online
   - Confront that Person Face-to-Face/Over the Phone
   - Set Account to Private or Limited
   - Block that Person
   - Nothing
   - Other, please specify

Questions marked with an asterisk (*) are necessary to complete the survey.

88. * Has anyone ever made unwanted sexual advances toward you on more than one occasion online?
   - Yes
   - No

(If yes, opens incident report; if no, continues to question 89)

Questions marked with an asterisk (*) are necessary to complete the survey.

**Incident Report**

1. * How many different people have made unwanted sexual advances toward you on more than one occasion online?
   - 1 – 4
   - 5 or more

(An incident report is filled out for each incident up to five)
2. How did you know the person that made unwanted sexual advances toward you? (Ex: Husband, Ex-Wife, Girlfriend, Ex-Boyfriend, Friend, Former Friend, Stranger, etc.) Please Do Not Put Names (open ended)

3. How long have you known that person?
   - N/A
   - Less Than 1 Month
   - 1 – 120 Months
   - More Than 120 Months

4. How many times did that person make unwanted sexual advances toward you?
   - 1 – 99
   - 100 or More

5. How long did that person make unwanted sexual advances toward you? (Ex: 2 weeks, 4 months, etc.) (open ended)

6. Through what means did that person make unwanted sexual advances toward you? (Please Check All That Apply)
   - Social Network/Blog Message Board/Wall
   - Social Network/Blog Messenger Program
   - Email
   - Instant Messenger
   - Text Message
   - Telephone
   - Letter
   - In Person
   - Other, please specify

7. Did that person's actions cause you to fear for your personal safety?
   - Yes
   - No

8. How afraid were you?
   
<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<tbody>
<tr>
<td></td>
<td>Not Afraid at All</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Very Afraid</td>
</tr>
</tbody>
</table>

9. What did you do as a result of that person making unwanted sexual advances toward you?
   - Ignore Him/Her
   - Tell Your Friends or Relatives
   - Report the Incident to the Social Network/Blog Provider
   - Report the Incident to University Staff
89. * Has anyone ever spoken to you in a violent manner or threatened to physically harm you on more than one occasion online?
   - Yes
   - No
   (If yes, opens incident report; if no, continues to question 90)

Questions marked with an asterisk (*) are necessary to complete the survey.

**Incident Report**
1. * How many different people have spoken to you in a violent manner or threatened to physically harm you on more than one occasion online?
   - 1 – 4
   - 5 or more
   (An incident report is filled out for each incident up to five)

2. How did you know the person that spoke to you in a violent manner or threatened to physically harm you? (Ex: Husband, Ex-Wife, Girlfriend, Ex-Boyfriend, Friend, Former Friend, Stranger, etc.) Please Do Not Put Names
   (open ended)

3. How long have you known that person?
   - N/A
   - Less Than 1 Month
   - 1 – 120 Months
   - More Than 120 Months

4. How many times did that person speak to you in a violent manner or threaten to physically harm you?
   - 1 – 99
   - 100 or More

5. How long did that person continue to speak to you in a violent manner or threaten to physically harm you? (Ex: 2 weeks, 4 months, etc.)
   (open ended)

6. Through what means did that person speak to you in a violent manner or threaten to physically harm you? (Please Check All That Apply)
   - Social Network/Blog Message Board/Wall
7. Did that person's actions cause you to fear for your personal safety?
   - Yes
   - No

8. How afraid were you?

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<th>Very Afraid</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Afraid at All</td>
</tr>
</tbody>
</table>

9. What did you do as a result of that person speaking to you in a violent manner or threatening to physically harm you?
   - Ignore Him/Her
   - Tell Your Friends or Relatives
   - Report the Incident to the Social Network/Blog Provider
   - Report the Incident to University Staff
   - Report the Incident to the Police
   - Confront that Person Online
   - Confront that Person Face-to-Face/Over the Phone
   - Set Account to Private or Limited
   - Block that Person
   - Nothing
   - Other, please specify
90. Please indicate if you have participated in any of the following activities:

<table>
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<tr>
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<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Repeatedly contacted or attempted to contact someone online after they asked/told you to stop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatedly harassed or annoyed someone online after they asked/told you to stop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatedly made sexual advances toward someone online after they asked/told you to stop.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeatedly spoken to someone in a violent manner or threatened to physically harm them online after they asked/told you to stop.</td>
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<td></td>
</tr>
<tr>
<td>Attempted to hack into someone's online social network account.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downloaded music or movies illegally.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sent sexually explicit images to someone online or through text messaging.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received sexually explicit images from someone online or through text messaging.</td>
<td></td>
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</tbody>
</table>

THANK YOU FOR YOUR PARTICIPATION!

If you have any questions about the survey or study, you are welcome to contact us. The results of the survey are scheduled to be made available in June of 2011; please contact the investigators listed below for more information.

Department of Criminal Justice

Billy Henson, M.S. 513-556-2617 (hensonb@email.uc.edu)
Brad Reyns, M.S. 513-556-2617 (reynsbw@email.uc.edu)

If you have any questions about your rights as a research participant, you may call the Chair of the Institutional Review Board—Social and Behavioral Sciences at 558-5784.

FOR MORE INFORMATION OR ADDITIONAL RESOURCES:

If you feel emotionally distressed as a result of this survey or if you would like more information about the University Counseling Center, please follow this link: University Counseling Center

If you would like more information on the prevalence of and/or the services available for stalking victimization, please visit The National Center for Victims of Crime or The Stalking Victims' Sanctuary.
### Appendix 7: Survey Items Used to Construct the Dependent and Independent Variables

#### Dependent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Survey Items, Coding, and Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td><em>Has anyone ever contacted you or attempted to contact you on more than one occasion online after you asked/told them to stop?</em>&lt;br&gt;Responses recoded as: 0 = Nonvictim, 1 = Victim</td>
</tr>
<tr>
<td>Harassment</td>
<td><em>Has anyone ever persistently harassed or annoyed you on more than one occasion online?</em>&lt;br&gt;Responses recoded as: 0 = Nonvictim, 1 = Victim</td>
</tr>
<tr>
<td>Unwanted Sexual Advances</td>
<td><em>Has anyone ever made unwanted sexual advances toward you on more than one occasion online?</em>&lt;br&gt;Responses recoded as: 0 = Nonvictim, 1 = Victim</td>
</tr>
<tr>
<td>Threats of Violence</td>
<td><em>Has anyone ever spoken to you in a violent manner or threatened to physically harm you on more than one occasion online?</em>&lt;br&gt;Responses recoded as: 0 = Nonvictim, 1 = Victim</td>
</tr>
<tr>
<td>Identity Fraud</td>
<td><em>Has anyone ever pretended to be you online, without your permission?</em>&lt;br&gt;Responses recoded as: 0 = Nonvictim, 1 = Victim</td>
</tr>
<tr>
<td>Cyberstalking</td>
<td>Dichotomous measure of 0 = Nonvictim, 1 = Victim for any of the four types of online pursuit</td>
</tr>
</tbody>
</table>

#### Independent Variables

**Online Exposure Variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Online</td>
<td><em>On average, how much time do you actively spend online each day? (Including email, IM, blogs, etc.)</em>&lt;br&gt;Responses recoded as: 0 to 16 hours or more</td>
</tr>
</tbody>
</table>
Number of Social Networks (SN)  *How many social network/blog accounts have you opened, even if you don’t use them regularly?*
   Responses coded as: 1 to 15 or more

Number of SN Updates  *In an average week, how many times do you update the information on your social network/blog account(s)?*
   Responses coded as: 1 to 25 or more

Time on Social Network  *In an average day, how many hours do you spend on your social network/blog site(s)?*
   Responses recoded as: 0 to 16 hours or more

Number of Photos on SN  *How many photos would you estimate that you have on your social network/blog account?*

Use AOL Instant Messenger  *Do you regularly use any of the following online sites/groups? (Please check all that apply)*
   Youtube
   Yahoo Groups
   Google Groups
   Match.com
   eHarmony
   AOL Instant Messenger (AIM)
   Other, please specify
   AIM variable recoded as: 0 = No, 1 = Yes

**Online Guardianship Variables**

SN Set to Private  *Do you have your social network/blog account set to private or limited access?*
   Responses recoded as: 0 = No, 1 = Yes

Use a Profile Tracker  *Have you ever used or tried to use a profile tracker that keeps track of who views your account?*
   Responses recoded as: 0 = No, 1 = Yes
Online Proximity Variables

Added Stranger as Friend

Have you ever added someone as a friend whom you didn’t know?
Responses recoded as: 0 = No, 1 = Yes

Number of Friends on SN

How many friends would you estimate you have in total on all your online social network/blog account(s)?

Friend Service

Have you ever used an online program that allows you to update multiple social network accounts at once?
Responses recoded as: 0 = No, 1 = Yes

Online Target Attractiveness

Which of the following do you include on your social network/blog account(s)?
Full Name
Relationship Status
Sexual Orientation
Instant Messenger ID
Email Address
Other Social Network Addresses
Interests/Activities
Photos
Videos
Responses recoded as: 0 = No, 1 = Yes
Summed scale 0 – 9
Online Deviance

Please indicate if you have participated in any of the following activities:
Repeatedly contacted or attempted to contact someone online after they asked/told you to stop.
Repeatedly harassed or annoyed someone online after they asked/told you to stop.
Repeatedly made sexual advances toward someone online after they asked/told you to stop.
Repeatedly spoken to someone in a violent manner or threatened to physically harm them online after they asked/told you to stop.
Attempted to hack into someone’s online social network account.
Downloaded music or movies illegally.
Sent sexually explicit images to someone online or through text messaging.
Received sexually explicit images from someone online or through text messaging.
Responses recoded as: 0 = No, 1 = Yes
Summed scale 0 – 8

Low Self-Control

Please indicate the most appropriate response to the statements below:
I consider myself to be argumentative.
I have trouble controlling my temper.
I often confront people when they make me upset.
I consider myself to be a risk-taker.
Responses recoded as: 1 = Strongly Disagree to 4 = Strongly Agree
Cronbach’s α = 0.54
Control Variables

Gender
What is your gender?
Responses recoded as: 0 = Male, 1 = Female

Age
What is your age?
Responses recoded as: 18 – 24

Race
What is your race/ethnicity?
Responses recoded as: 0 = White, 1 = Nonwhite

Non-single
What is your relationship status?
Responses recoded as: 0 = Single, 1 = Not Single

Deviant Peers
How likely do you think it is a friend or acquaintance will use an online program (e.g., Instant Messenger, Email, etc.) to do any of the following?
- Harass You
- Stalk You
- Threaten to Physically Harm You
Responses coded as: 1 = Not Likely at All to 10 = Very Likely
Cronbach’s α = 0.80

Risky Offline Lifestyle
Since beginning school at UC, how many days/night do you go to parties in an average month?
Responses coded as: 0 – 30

Since beginning school at UC, how many days/night to you go to bars or clubs in an average month?
Responses coded as: 0 – 50

Since beginning school at UC, how many alcoholic drinks do you have in an average week?
Responses coded as: 0 – 50
Cronbach’s α = 0.67
### Appendix 8: Collinearity Diagnostics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance</th>
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</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.803</td>
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</tr>
<tr>
<td>Age</td>
<td>0.933</td>
<td>1.071</td>
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<tr>
<td>Nonwhite</td>
<td>0.898</td>
<td>1.114</td>
</tr>
<tr>
<td>Non-single</td>
<td>0.916</td>
<td>1.092</td>
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<tr>
<td>Peer Deviance</td>
<td>0.923</td>
<td>1.083</td>
</tr>
<tr>
<td>Risky Offline Activities</td>
<td>0.825</td>
<td>1.213</td>
</tr>
<tr>
<td>Time Online</td>
<td>0.702</td>
<td>1.424</td>
</tr>
<tr>
<td>Number of Social Networks</td>
<td>0.784</td>
<td>1.275</td>
</tr>
<tr>
<td>Number SN Updates</td>
<td>0.805</td>
<td>1.242</td>
</tr>
<tr>
<td>Time on Social Network</td>
<td>0.608</td>
<td>1.645</td>
</tr>
<tr>
<td>Number of Photos on SN</td>
<td>0.789</td>
<td>1.268</td>
</tr>
<tr>
<td>AOL IM</td>
<td>0.854</td>
<td>1.171</td>
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<tr>
<td>SN Set to Private</td>
<td>0.936</td>
<td>1.068</td>
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<tr>
<td>Use a Profile Tracker</td>
<td>0.854</td>
<td>1.171</td>
</tr>
<tr>
<td>Added Stranger as Friend</td>
<td>0.911</td>
<td>1.097</td>
</tr>
<tr>
<td>Number of Friends on SN</td>
<td>0.804</td>
<td>1.244</td>
</tr>
<tr>
<td>Friend Service</td>
<td>0.942</td>
<td>1.062</td>
</tr>
<tr>
<td>Target Attractiveness</td>
<td>0.800</td>
<td>1.251</td>
</tr>
<tr>
<td>Online Deviance</td>
<td>0.866</td>
<td>1.155</td>
</tr>
<tr>
<td>Low Self-Control</td>
<td>0.921</td>
<td>1.086</td>
</tr>
</tbody>
</table>