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Patterns of Cyber Harassment and Perpetration among College Students in the United States: A Test of Routine Activities Theory

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Abstract

A sample of 298 college students at a large southwestern state university (female 68.8%) completed an online survey about their experiences of being victimized by and engaging in perpetration of cyber-harassment of romantic partners. The findings partially supported the application of Routine Activities Theory to understand the predictors of cyber-harassment for victims and victimizers. Victimization for women was associated with greater general risk-taking propensity and reported online exposure and disclosure. For both men and women, greater risk propensity and online disclosure were associated with greater reports of perpetrating such harassment.

Keywords: Cyber-Harassment, Risk Propensity, Online Exposure, Online Disclosure, College Students.

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Introduction

New electronic technologies have contributed to the prevalence of intimate partner violence (IPV) by enabling perpetrators with convenient tools to intimidate, isolate, and stalk their victims in new and damaging ways (Dixon & Bowen, 2012; Melander, 2010). IPV is defined as physical, sexual, or psychological abuse or harm perpetrated by a current or former partner or common-law spouse, non-marital dating partner or boyfriend/girlfriend of same or opposite sex (Centers for Disease Control and Prevention, 2016). Research has shown that the consequences of psychological abuse can be equally as devastating as physical abuse. Equally concerning is that this form of abuse may open the door to physical abuse or sexual harassment (Dixon & Bowen, 2012; Halder & Jaishankar, 2011; Melander, 2010). College students are at particular risk for the effects of this type of IPV, due to their high usage of electronic technology (Dixon & Bowen, 2012; Melander, 2010). According to the Pew Research Center (2014), some 97% of US college students use the internet, while 73% use social networking sites. Ninety-eight percent of the population aged 18-29 have a cell phone (83% of these are smart phones), 81% use their phones to text, and more than half use their phones to access the internet and email (Pew Research Center, 2014). This high usage of electronic technology opens college students to the possibility of online harassment, as well as victimization and perpetration of IPV

We use the term cyber harassment to include IPV conducted through electronic technology. Cyber harassment involves threatening, insulting, harassing, or harming individuals via electronic communications such as email and cell phones (Beran & Li, 2005). Unlike cyber bullying, which is largely used to describe the experiences of children and teenagers, cyber harassment is not limited to abuse or aggression from peers, but refers more to unwanted acts and behaviors among adults, including intimate partners, acquaintances or strangers (Campbell, 2005; Jameson, 2008; Miller, 2006; Welsh & Lavoie, 2012). Examples of cyber harassment include undesirable sexual solicitation, sexual harassment, voyeuristic behavior, obscene comments, and spamming (Behm-Morawitz & Schipper, 2015; Dempsey et al., 2011). The related concept of cyber stalking involves conduct directly targeting the victim, rather than only communicating about a victim (Lipton, 2011, Miller, 2006). Welsh and Lavoie (2012) argue that both cyber bullying and cyber stalking are different forms of cyber harassment. Age is the parameter to differentiate between the two types of crimes, with cyber bullying describing a type of cyber harassment involving children and youth, while cyber stalking refers to forms of cyber harassment among adults (Miller, 2006; Welsh & Lavoie, 2012).

The purpose of this study is to explore how online behaviors may make college students vulnerable to cyber harassment by their intimate partners. Routine Activities Theory (RAT; Cohen & Felson, 1979) was employed as the theoretical framework of this study. Individual differences in vulnerability to being cyber harassed, particularly propensity for risk taking, as well as amount of online exposure and disclosure, which exposes students to motivated online offenders, were expected to be predictive of their reported experience of cyber victimization. Under the framework of RAT, this study also investigated whether these same individual differences and behavioral factors predicted reported perpetration of cyber harassment. Although RAT has been used widely as a theory of victimization (Clodfelter, Turner, Hartman, & Kuhns, 2010; Holt & Bossler, 2008; Ngo & Paternoster, 2011; Reynolds, Henson, & Fisher, 2011), empirical research has also shown that RAT is applicable to be used as a theory of offending (Chan, Heide, & Beauregard, 2011; Miller, 2012; Sasse, 2005) and of the overlap in being cyber harassed

and engaging in such harassment (Forde & Kennedy, 1997; Jennings, Piquero, & Reingle, 2012; Klevens, Duque, & Ramirez, 2002; Maxfield, 1987; Mustaine & Tewksbury, 2000, Osgood et. al., 1996; Smith & Ecob, 2007; Tewksbury & Mustaine, 2000). For example, Jennings et al. (2012) found that the more a youth interacts with delinquent peers in the absence of a capable guardian, the greater the likelihood of that youth engaging in violent perpetrating, as well as experiencing violent victimization.

Review of Literature

a. Incidence and Impact of IPV among College Students

College and university students in the United States are at high risk of victimization through intimate partner violence (IPV) (Chan et al., 2011; Melander, 2010; Straus, 2008). In 2011, the College Dating Violence and Abuse Poll found that 43% of college women polled reported being in a relationship characterized by some form of abuse, including: physical, psychological, sexual, or controlling behaviors. The National Coalition Against Domestic Violence (2007) found that 21% of college students (of unspecified gender) report having experienced dating violence by a current partner, and 32% reported violence by a previous partner. Depending on the definition used and the type of violence being investigated, as many as one in three couples in college report some form of dating violence (Kaukinen, Gover, & Hartman, 2012).

Gender has been a key risk factor, based on the common finding that IPV is primarily perpetrated by men against women in an attempt to control or dominate one's partner (Mustaine & Tewksbury, 1999). Early studies have borne this out, finding higher rates of victimization among women and perpetration among men (Kaukinen, 2014). Women are more likely to suffer sexual assault and be seriously injured by their partners, while men are more likely to be the victims of psychological abuse (Kaukinen, 2014).

Recent studies are finding that rates of perpetration by men and women are more similar than previously thought (Kaukinen et al., 2012; Kaukinen, 2014; Tilyer & Wright, 2014). In a study by Burke, Wallen, Vail-Smith, and Knox (2011), females reported engaging in controlling and monitoring behavior more than males, but in Welsh and Lavoie's (2012) study, women were much more likely to report unwanted contact than men. Dating violence among college students has been found to occur most frequently in the context of a mutually violent relationship, with both parties enacting the role of perpetrator and victim (Cercone, Beach, & Arias, 2005; Kaukinen et al., 2012). Cercone et al. (2005) found that men and women were equally likely to report perpetration and victimization in terms of psychological aggression and minor assault, as well as being victims of severe physical assault. However, females admitted to committing more severe physical assault on their partners.

b. Cyber Harassment among College Students: Online Risks, Offline Risks, and IPV

A limited number of studies on college students have been conducted to capture the extent of cyber-harassment/cyber-stalking among this population (Finn, 2004). Melander's (2010) study found that one third of undergraduate students had experienced some form of computer-based cyber harassment. Finn (2004) found that 10- 15% of students had experienced cyber harassment, but only 7% had reported this harassment to authorities.

Alexy, Burgess, Baker, and Smoyak (2005) found that 4% of the studied population reported being victims of cyber stalking.

The rise in technology use clearly allows for an increase in the opportunity and means for cyber harassment in relationships (Behm-Morawitz & Schipper, 2015; Beran & Li, 2005; Melander, 2010). College students are using technology in record numbers, rendering them more susceptible to manipulation and intrusion in their daily routines (Schenk & Fremouw, 2012). In general, some of the most frequent ways in which technology is abused under the form of cyber harassment are texting (either in a threatening and harassing manner or via repetitive and relentless contact), checking a partner's online history, texts, email, monitoring social networking sites, using GPS to locate a partner, and demanding passwords to a partner's accounts (Burke et al., 2011; Dixon & Bowen, 2012). Consequently, these habits and practices may put college students at high risk for face-to-face intimate partner violence (Dixon & Bowen, 2012; Melander, 2010).

College students are well known for indulging in risky online and offline behaviors (Huang et al., 2014; Lyndon, Bonds-Raacke, & Cratty, 2011; Reich, Subrahmanyam, & Espinoza, 2012; Schenk & Fremouw, 2012; Walker, Sockman, & Koehn, 2011). In terms of offline risks, behaviors such as drug and alcohol use, sexual risk taking, and multiple sexual partners, are highly associated with IPV (Kaukinen, 2014), and these factors are likely to also predict online risks behaviors, as discussed below (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Reich et al., 2012).

College students tend to develop habits in their technology usage that may increase their risk of victimization. Increased levels of exposure and proximity to offenders add to their attractiveness as a target (Welsh & Lavoie, 2012). The high level of personal disclosure facilitated by technology may increase risk (Gross & Acquisti, 2005; Melander, 2010). Many technology users have become comfortable in not only disclosing personal information but also physical location, with many cell phones including GPS locators and websites encouraging "check ins" in specific places, thus allowing potential offenders to monitor, track, or stalk victims (Dixon & Bowen, 2012). Melander (2010) points out that "...those who use technological forms of communication tend to be less inhibited in their online interactions and may type or text things that they would not customarily say in real life" (p. 18).

c. Routine Activities Theory Applied to Cyber Harassment

Many theories attempt to explain the bases of intimate partner violence, including feminist, social learning, and social exchange theories (Anderson, 1997; Jasinski, 2001). Recent research, however, suggests that these largely gender based theories cannot account for the fact that in many cases women may no longer be the sole victim or the primary victim, particularly in the case of psychological or cyber abuse, and that these limitations must be addressed.

Routine Activities Theory (RAT) shifts the emphasis away from gender roles, learning, or negotiation-based frameworks in explaining victimization and towards examining risk factors that result from the changing patterns of life experienced through new technology. Developed by Cohen and Felson (1979), RAT relates daily routine activities with the occurrence of direct contact crime. RAT proposes that these crimes occur at the intersection of three factors or conditions: an accessible, attractive, and suitable target in a position of exposure to victimization, the presence of a motivated offender (proximity),

and the lack of a capable guardian to prevent this crime from taking place (guardianship) (Cohen & Felson, 1979). Since this theory was developed, a number of studies have been carried out that support its relevance in understanding face-to-face crime.

Target suitability/attractiveness involves the characteristics or behaviors of targets that make them attractive and available to likely offenders (Cohen & Felson, 1979; Welsh & Lavoie, 2012). These could be social activities, economic status, alcohol and drug use, to name a few (Cohen & Felson, 2010). In applying RAT to cyber harassment, Welsh and Lavoie (2012) operationalized target attractiveness in terms of risk taking propensity, while Reynolds et al. (2011) operationalized this in terms of gender, romantic relationship status, and degree of online information disclosure.

Exposure and proximity to potential offenders are often considered together in applying RAT to face-to-face crime, but it may be informative to separate the concepts with regard to understanding cyber harassment. According to the Pew Research Center, the sheer amount of time spent online and on cell phones is increasing exponentially across all ages and all income brackets in the United States. Some 97% of adults aged 18–29 used the Internet in 2014 (Pew Research Center, 2014), and by 2012, 67% were using their phones to access social networking sites (Pew Research Center, 2014). The constant accessibility of modern technology, such as smart phones and computers, opens vast new worlds of virtual encounters. Victims can be contacted at almost any time, which may lead to feelings of increased vulnerability (Melander, 2010). Online offenders have the potential to be creative in terms of harassment, utilizing technology to threaten, stalk, isolate, control, or cause legal trouble for their victims.

Beyond exposure, however, the online environment's ease and encouragement of disclosing personal information may make overly disclosing users particularly vulnerable to being cyber harassed, as well as provide means for perpetrators to engage in such harassment. While research indicates that users of social networking sites are much less likely to be socially isolated and receive more social support than the average American (Pew Research Center, 2010), these sites encourage the creation of profiles that may include such personal information as gender, birth date, relationship status, and sometimes even the home address or the class schedule of the user (Welsh & Lavoie, 2012). Utilizing this information, an offender can victimize a user repeatedly over an extended period of time (Reynolds et al., 2011). The disclosure of personal information can increase the risk of many kinds of online victimization, from stalking and harassment to identity theft, by strangers or intimate partners. However, users often seem unaware of these risks, and the disclosure of this type of information is perceived as normal in online interactions (Welsh & Lavoie, 2012).

The unregulated nature of the online environment creates a lack of *guardianship* over the use of communication and cyber-technology that presents ample opportunity for a motivated offender to harass or abuse an intimate partner. Measuring such lack of guardianship in potential and actual victims of cyber harassment to test RAT, however, is problematic, since perceptions of guardianship are only relevant to perpetrators.

Welsh and Lavoie (2012) conducted a partial test of RAT's applicability to predicting cyber-harassment victimization for a sample of college student social network users and, in support of the theory, found that both online exposure and online disclosure of personal information (proximity) significantly predicted the likelihood of being victimized independent of the effect of degree of proneness to risk taking (target

availability/attractiveness). Welsh and Lavoie did not attempt to directly measure guardianship, but suggested that degree of disclosure reflects potential victims' lack of guardianship. Reynolds et al. (2011) attempted a full test of RAT in predicting college student cyber-harassment victimization and also obtained findings supportive of the theory, but their conceptualization and measurement of the components of RAT somewhat differed from Welsh and Lavoie's (2012). Reynolds et al. found that target attractiveness, as conceptualized in terms of online disclosure, was not predictive of being cyber harassed but being female and in a romantic relationship was predictive. Online exposure produced similar effects as in Welsh and Lavoie's study, while proximity was conceptualized in terms of stranger access to user online profiles, which was predictive of being cyber harassed. Guardianship was conceptualized in terms of using profile trackers and limiting profile access, but the authors admit that such "self-guardianship" is not really reflective of RAT's emphasis on the lack of guardianship as perceived by perpetrators of cyber harassment. In contrast, Ngo and Paternoster's (2011) study of the applicability of RAT to predicting various forms of cyber victimization in college students found that, over and above the individual differences variable of low self-control (related to risk taking propensity), exposure, disclosure, and guardianship (self-guardianship, such as use of security software) items were generally not predictive of being cyber victimized).

Current Study

The purpose of this study was to examine the effects of online behaviors as risk factors for cyber harassment. Part of the study was a replication of Welsh and Lavoie (2012)'s study using a U.S. instead of a Canadian college student sample. Beyond testing whether online exposure and disclosure predicted being victimized by cyber harassment over and above the effects of target attractiveness (based on risk propensity), we also tested whether target attractiveness interacted with online exposure and disclosure to exacerbate the risk of being victimized. The present study also tested Routine Activities Theory in terms of predicting the likelihood of perpetrating cyber harassment, which has not been widely tested. Cohen & Felson (1979) note that "the routine activity approach might in the future be applied to the analysis of offenders and their inclinations as well" (p. 605), and RAT has been used in several empirical studies to examine offending (Chan et al., 2011; Miller, 2012; Sasse, 2005), as well as in studies analysing the overlap of victim and offender (Jennings et al., 2012; Klevens et al., 2002). Finally, the moderating effects of gender are also considered in this current study.

Methods

Participants

Two hundred ninety-eight undergraduate students taking introductory psychology courses at a large southwestern state university completed an anonymous online survey for research participation credit. The sample was 68.8% female, 30.5% male and .3% other. The majority of the participants identified as straight (93%), followed by bisexual (4%), gay or lesbian (1.7%), and other (1%). The mean age of the sample was 20.8 years. The race/ethnicity of the sample was 27% Caucasian/White, 27.5% Hispanic/Latino, 21.1% Asian/Pacific Islander, 16.1% African American/Black, and 6% other. Almost half of the participants (44.6%) defined themselves as not currently dating, followed by steady or exclusive daters at 34.4%, occasionally dating at 11.6%, married 4.4%, and engaged 3.1%.

Measures

Reported Cronbach's alphas are based on the present sample. Scale scores are the means across all relevant items.

Cyber harassment victimization was assessed by the Cyber Obsessional Pursuit (COP) scale (Spitzberg & Hoobler, 2002; 33 items, $\alpha = .93$), which measures the extent of an individual's experience of being victimized by online stalking or cyber-obsessional pursuit. The COP consists of two sections. The first 24 items asked how many times the participant had been undesirably pursued or victimized by cyber means with a scale ranging from 1 (never) to 6 (over 5 times). The items included "sending excessively needy or disclosure messages," "sending threatening messages," and "meeting first online and then following or stalking you." The second section includes 9 items that assessed the participant's dependence on cyber means to pursue friendships and relationships (e. g., how many good friends do you keep up with primarily via computer? And how many romantic relationships have you initiated or maintained via computer?). For the present analyses, cyber-victimization scores are the mean across the first 24 items.

Cyber harassment perpetration was measured by a modified version of the Cyber Psychological Abuse Scale (CPAS; Leisring & Giumatti, 2014; 12 items, $\alpha = .79$). This modified CPAS used a 6- point Likert response scale ranging from 1 (never) to 6 (more than 10 times). The scale assesses how many times the participant had committed acts of harassment or abuse by cyber means against an intimate partner, including insulting the participant's partner in an email or a text, posting inappropriate or embarrassing information or pictures of them online, keeping tabs on their partner using cyber means, or threatening to harm their partner or their families online or by text.

Risk propensity was assessed by the Domain-Specific Risk-Taking for Adults (DOSPERT; Blais & Weber, 2006; 30 items, $\alpha = .85$) to evaluate the likelihood of engaging in various risky behaviors. The DOSPERT includes items, such as the likelihood of the participant driving a car without a seatbelt, having unprotected sex, or not returning a found wallet that contained \$200.00. The DOSPERT consists of 5 subscales: 1) ethical, 2) financial, 3) health-safety, 4) recreational, 5) social. Responses were measured on a 7-point Likert scale ranging from 1 (extremely unlikely) to 7 (extremely likely). Higher scores indicate greater levels of risk propensity, and the mean response across all 30 items was used for the present analyses.

The *Online Exposure Scale* (Welsh & Lavoie, 2012; 17 items, $\alpha = .78$) measures the type and frequency of online behaviors engaged in by participants in an average week. The 5-point ("never" to "always") Likert scale items questioned participants' usage of the Internet for activities such as shopping, banking, dating or social networking.

The *Online Disclosure Scale* (Welsh & Lavoie, 2012; 24 items, $\alpha = .89$) assesses how likely a participant would be to share various types of personal information online (e.g., his or her email address, sexual orientation, pictures of the participant engaging in risky behavior such as drinking or using drugs, or suggestive photos). The scale consists of 24 items measured on a 5-point Likert scale, with answers ranging from 1 (very likely) to 5 (very unlikely).

Results

Independent sample *t*-tests compared gender differences in cyber harassment-victimization, cyber harassment perpetration, risk propensity, online exposure, and online

disclosure (Table 1). Only risk propensity differed significantly by gender ($t = -4.393, p < .001$), with male college students ($M = 3.48, S.D. = 0.84$) reporting greater levels of risk propensity compared to female college students ($M = 3.03, S.D. = 0.69$). Less than 21% of participants reported having never experienced any cyber-harassment victimization, while only 18% reported having never committed any form of cyber-harassment.

Table 1. Means and Standard Deviations by Gender

	Gender		<i>t</i>
	Female <i>M (SD)</i>	Male <i>M (SD)</i>	
Cyber harassment victimization	1.44 (0.53)	1.35 (0.50)	1.39
Cyber harassment perpetration	1.59 (0.55)	1.49 (0.59)	1.36
Risk propensity	3.03 (0.69)	3.48 (0.84)	-4.39***
Online exposure	2.55 (0.47)	2.67 (0.53)	-1.85
Online disclosure	2.50 (0.56)	2.44 (0.66)	0.79

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 2 presents the correlations among cyber harassment victimization, cyber harassment perpetration, risk propensity, online exposure, and online disclosure, separately by gender. For both men and women, online exposure was significantly positively correlated with online disclosure. Risk propensity was only positively correlated with online exposure and disclosure for men. As expected, degree of being cyber harassed was significantly and positively correlated with cyber harassment perpetration for men and women, but it is notable that this correlation was particularly high for men. For women, cyber harassment victimization was significantly and positively correlated with risk propensity, online exposure, and online disclosure. For men, being cyber harassed was significantly and positively correlated with risk propensity, but not online exposure nor online disclosure. For both women and men, perpetration of cyber harassment was significantly and positively correlated with risk propensity and online disclosure.

Table 2. Correlations among Variables^a

	1	2	3	4	5
Cyber harassment victimization		.375***	.234**	.192*	.165*
Cyber harassment perpetration	.627***		.246***	-0.955	.211**
Risk propensity	.418***	.488***		.076	.045
Online exposure	.154	.010	.228		.365***
Online disclosure	.027	.225*	.256*	.239*	

^a Women above the diagonal and men below the diagonal.
 * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3. Hierarchical Multiple Regression of Cyber-Victimization and Cyber-Abuse Perpetration on Risk Propensity and Situational Variables

	Cyber harassment victimization		Cyber harassment perpetration		Cyber harassment perpetration	
	beta ^a	ΔR^2	beta	ΔR^2	beta	ΔR^2
Cyber harassment victimization					.386	.165***
Gender	-.163*	.010	-.150*	.010	-.087	.004
Risk propensity (RP)	.115	.036**	.235**	.075***	.191**	.039***
Online exposure (OE)	.104		-.056		-.087	
Online disclosure (OD)	.037	.041**	.207**	.039**	.188*	.034**
Gender × RP	-.126	.008	-.019	.002	.031	.000
Gender × OE	-.062		.029		.045	
Gender × OD	-.027	.000	-.028	.001	-.012	.002
RP × OE	.104		-.143		-.179*	
RP × OD	.146	.024	.032	.016	-.024	.027*
Gender × RP × OE	.080		.008		-.026	
Gender × RP × OD	.036	.006	.041	.001	.029	.001

^a Beta for full model.
 * $p < .05$ ** $p < .01$ *** $p < .001$

Hierarchical multiple regressions tested whether online exposure and online disclosure predicted being cyber harassed or engaging in cyber harassment over and above the effects of risk propensity. These analyses also tested the moderating effects of gender and risk propensity on the relationships of online exposure and online disclosure with being cyber harassed or perpetrating cyber harassment. The steps in the hierarchical multiple regressions were: 1) gender, 2) risk propensity, 3) situational risk factor (online exposure and online disclosure) entered as a block, 4) centered interaction term of gender by risk propensity, 5) centered interaction terms of gender by situational factor entered as a block, 6) centered interaction term of risk propensity by situational factor entered as a block, 7) centered 3-way interaction terms of gender by risk propensity by situational factor entered as a block. Given that perpetration of cyber harassment is sometimes retaliation for being harassed; an additional hierarchical regression analysis tested the predictors of perpetration of cyber harassment, after controlling for extent of being cyber harassed.

Figure 1. Interaction of Risk Propensity by Online Exposure on Cyber Harassment Perpetration

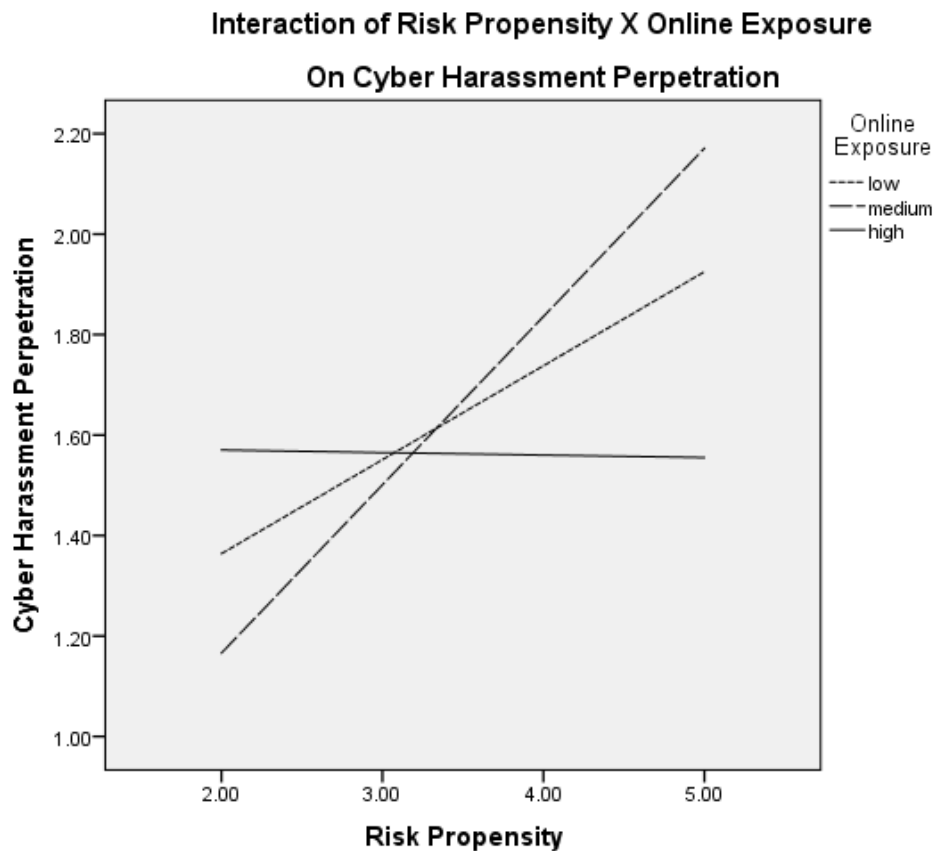


Table 3 presents the results of the multiple regression analyses for being victimized by cyber harassment and perpetrating cyber harassment. In support of Routine Activities Theory, when the situational factors were entered as a block, they continued to be significant predictors of being cyber-victimized and engaging in cyber-victimization over

and above the effects of gender and risk propensity. At this step, online exposure was a significant predictor of being cyber harassed (beta = 0.171, $p < .05$), while online disclosure predicted perpetrating cyber harassment (beta = 0.210, $p < .01$). No interactions reached statistical significance in these analyses. When being victimized by cyber harassment was controlled for in the analyses of predictors of perpetrating cyber harassment, both online exposure and disclosure were significant predictors of perpetrating such harassment at the step the variables were entered (beta = -0.135, $p < .05$, and beta = 0.180, $p < .01$, respectively). These analyses also yielded a significant two-way interaction between risk propensity and online exposure (beta = 0.171, $p < .05$) on perpetrating cyber harassment. As shown in Figure 1, for college students with high online exposure, the relationship between risk propensity and perpetrating cyber harassment is completely attenuated, while this relationship is strongly positive for those low and medium in online exposure.

Discussion and Conclusion

The significance of Routine Activities Theory (RAT; Cohen & Felson, 1979) is its focus on behavioral choices and situational factors over and above individual differences in risk taking propensity, antisociality, psychopathology, and/or previous victimization, as causes of increased likelihood of criminal victimization. Such behavioral choices and situational factors are more amenable to both individual and social interventions to prevent victimization than the latter individual differences factors. While only a partial test of RAT, given the difficulty of measuring guardianship in the online environment, the present findings are supportive of the application of RAT to online intimate partner violence in that, over and above the effects of risk taking propensity, greater reported online exposure was found to be predictive of more experiences of being victimized by cyber harassment, particularly for women.

These effects were also found for predicting reported perpetration of cyber harassment, a perhaps not surprising finding, given the notably high correlations, particularly for men, between reported experiences of being a victim of cyber-harassment and engaging in such harassment. This correlation between degree of victimization and victimizing is consistent with previous findings (Cercone et al., 2005; Kaukinen et al., 2012) and may be the result of cycles of cyber-victimization and retaliation or due to offenders and victims sharing traits that cause them to engage in similar activities (Tilyer & Wright, 2014). It is notable; however, that online exposure was a more salient predictor of being a victim of cyber harassment, while online disclosure was more prominent for perpetrating such harassment, in the latter case, even after controlling for degree of being cyber harassed. This combination of findings suggests that the pervasiveness of online activities in the lives of college students puts them at risk for being cyber harassed merely by increasingly being online, while perpetration of cyber harassment requires increasing proximity to victims. On the other hand, the significant interaction of risk propensity by online exposure for perpetration of cyber harassment suggests that increasing online activity is only salient for perpetrators of cyber harassment who do not already have a personality predisposition to engaging in such harassment.

This study has implications for the intervention and prevention of cyber-abuse. Adolescents and young adults should be targeted for education with regard to personal privacy and safe usage of communication technology, including about the permanence of

cyber communication and its ubiquity, where posts and communications can become viral and constantly accessible. Risk assessments of victims of intimate partner violence should include questions about cyber harassment or abuse. Equally importantly, safety planning with victims should extend to teaching victims how their online habits and behaviors may be leaving them vulnerable to further abuse or victimization. Augustina (2015) makes several recommendations that apply Routine Activities Theory to decrease the risk for cyber victimization.

Limitations of the study included the possible lack of a sufficient sample size to have enough statistical power to detect interaction effects. The survey was only administered to undergraduate psychology students, limiting its generalizability to the general population. The survey depended on self-report, which may have created a social desirability bias, as well as precluded adequately measuring the guardianship aspect of RAT. Men may underreport committing abuse against their partners, perhaps due to awareness of societal condemnation of IPV (Cercone et al., 2005). Since the study was unable to determine the chronology of events, some data regarding the perpetration of abuse against a partner may be flawed, e.g., a victim who admits perpetration of abuse may be responding in self-defence (Cercone et al., 2005; Kaukinen et al., 2012).

Consistent with recent research on cyber-harassment (Burke et al., 2011; Welsh & Lavoie, 2012), the present study found no consistent sex differences in being cyber-harassed or engaging in cyber-harassment. While women are still more likely to be victims of severe physical abuse, young men and women are becoming equally likely to victimize each other, as evidenced by the finding that mutual violence has become the most frequent example of a violent relationship in this demographic (Cercone et al., 2005; Kaukinen et al., 2012). The physical remoteness of cyber-technology may also allow for the disinhibition of IPV for women.

While risk factors have been extensively studied, clarifying the temporal relationship of these factors to the actual experience of abuse or violence requires further research. A longitudinal study that follows students throughout their college career, noting which factors show causality and which may be consequences of experiencing IPV, would be an important contribution to the research literature.

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