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Exploratory Investigation On Theoretical Predictors Of The Electronic Leash

By: **Catherine D. Marcum**, George E. Higgins, and Bethany Poff

Abstract

As technology has become an ever-present facet in the lives of young people, they have become reliant on it to form and maintain relationships. It has also helped facilitate negative relationship behaviors. The purpose of this study is to investigate theoretical predictors of negative relationships in a sample of university students. Results indicated that low self-control is a significant predictor of the behavior, but deviant peer association was not significant.

Exploratory investigation on theoretical predictors of the electronic leash

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ABSTRACT

As technology has become an ever-present facet in the lives of young people, they have become reliant on it to form and maintain relationships. It has also helped facilitate negative relationship behaviors. The purpose of this study is to investigate theoretical predictors of negative relationships in a sample of university students. Results indicated that low self-control is a significant predictor of the behavior, but deviant peer association was not significant.

1. Introduction

Technology has immersed itself into almost every facet of our daily lives. Age knows no boundary when it comes to using technology for entertainment, educational and professional purposes. It is not uncommon to see toddlers using tablets and grandparents actively engaging in social networking activity. Depending upon perception of those involved, communication and information technologies have become a permanent fixture in a large portion of current romantic relationships. This is especially true with younger couples, as they have been raised in an era where technology communication is perceived as a necessity. Use of technology to fuel and maintain romantic relationships has dramatically changed the way that young couples communicate, find information on their mates, flirt, and even engage in sexual activity (PEW, 2013).

The present study will explore how the reliance on technology has negatively impacted relationship maintenance in a sample of university students. The current research regarding communication via technology and relationships will be presented, followed by a discussion of how the behavior explored in this study is a version of cyberstalking. After collecting data from a sample of university students, the analysis and results will be explained. Lastly, we will

provide interpretation and real-life implications of these findings as it relates to understanding romantic relationships in this era.

1.1. Literature review

Communication via texting on the mobile telephone is not unusual, if not preferred, but younger individuals involved in romantic relationships. Sending a quick message is often preferred rather than putting effort into having a lengthy telephone conversation. Email and instant messaging, other popular mediums of quick communication involving no direct interaction, are other ways to relay information, schedule dates, and keep in touch (Torress, Robles, & DeMarco, 2013).

Social networking websites, another popular medium for communication, gives users the opportunity to maintain a personal profile to represent to the Internet community, as well as communicate with friends and family directly (Papacharissi, 2011). Social networking websites often play a crucial role in initiating and maintaining relationships (Carpenter & Spottswood, 2013; Papp, Danielewicz, & Cayemberg, 2013; Torress et al., 2013; Trepte & Reinecke, 2013). In fact, studies have indicated that social networking websites facilitate closeness and intimacy between romantic partners if the website is used correctly (Blais, Craig, Pepler, & Connolly, 2008; Caughlin & Sharabi, 2013). Facebook, one of the most popular social networking websites, has more than 1 billion users, some of who visit the website at least 6 days a week and use it as a relationship maintenance tool (Facebook, 2013).

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Facebook specifically affords romantic partners the ability to communicate publicly or privately, advertise relationship status and even link to their partner's profile (Fox & Warber, 2013; Fox, Warber, & Makstaller, 2013; McEwan, 2013). However, Facebook also allows the ability to track a partner without his/her knowledge through posting, events, and check-ins (Tokunga, 2011).

Consistent involvement of technology in our lives has ignited concern amongst professionals and scholars. Clinicians, academics, and legislators have all expressed interest on the negative impact that technology has had on social skill development (Bonetti, Campbell, & Gilmore, 2010; Pierce, 2009), physical health (Arora et al., 2013; Rosen et al., 2014), and sexual development (Hua, 2012). As mobile telephones and Internet connections are increasingly becoming a reliant method of relationship communication, it can also result in conflict and aggression (Fox, Osborn, & Warber, 2014; Kellerman, Margolin, Borofsky, Baucom, & Iturralde, 2013; Schnurr, Mahatmya, & Basche, 2013). In fact, romantic partners may turn to technological advances to monitor and spy on their significant other without their knowledge. Legally, these behaviors can be considered cyberstalking.

1.2. Cyberstalking

The accepted definition of cyberstalking is the use of the Internet and other technological devices to monitor or harass another person in a threatening way (Bocij & McFarlane, 2003; Reyns, Henson, & Fisher, 2012). Cyberstalkers can gather personal information to threaten or intimidate the victim, or send unwanted, repetitious emailing or instant messaging (Baum, Catalano, Rand, & Rose, 2009). In addition, sophisticated methods such as computer spyware, listening devices and bugs, and video/digital cameras can also be used to stalk online. Cyberstalkers can impersonate their victim online by accessing email accounts or social networking accounts and posing as that person (Sheridan & Grant, 2007). While federal and state legislation currently recognize cyberstalking as a serious criminal issue, there is still debate of whether it is an extension of stalking in the physical sense or its own entity in regards to a social problem (McFarlane & Bocij, 2003; Pittaro, 2007; Sheridan & Grant, 2007).

Recent studies have indicated that cyberstalking is becoming a prominent issue in the field of cybercrime. In the National Crime Victimization Survey's Supplemental Victimization Survey, 21.5 percent of respondents who were stalked in the physical realm also reported experiencing cyberstalking (Baum et al., 2009). A nationally representative study of college women in the United States indicated that 25% of respondents who were stalked offline also experienced cyberstalking (Fisher, Cullen, & Turner, 2002). A study measuring only cyberstalking indicated that just over 40 percent of respondents had experienced cyberstalking (Reyns et al., 2012), while a study focused solely on social network users estimated cyberstalking victimization to just over 6% (Dreßing, Bailer, Anders, Wagner, & Gallas, 2014).

Cyberstalking and the term "cyber dating abuse" have recently began being used interchangeably, especially recognized as a consistent problem between adolescent and young adult romantic partners (Borrajo, Gamez-Guadix, Prereda, & Calvete, 2015; Lyndon, Bonds-Raacke, & Cratty, 2011; Zweig, Dank, Yahner, & Lachman, 2013). The definition of cyber dating abuse often mirrors the same behaviors identified as cyberstalking: monitoring and surveillance of a partner (Burke, Wallen, Vail-Smith, & Knox, 2011; Lyndon et al., 2011); sending threatening or rude emails and messages (Bennet, Guran, Ramos, & Margolin, 2011; Hinduja & Patchin, 2011; Kellerman et al., 2013; Zweig et al., 2013); and posting humiliating photographs (Hinduja & Patchin, 2011; Lyndon et al., 2011). While this phenomenon is in its infancy in regard to empirical research, the few studies available have found that between 12 and 17% of young adults admitted to committing cyber dating abuse (Bennet et al., 2011; Korchmaros, Ybarra, Langhinrichsen-Rohling, Boyd, & Lenhart, 2013). For example, Hinduja and Patchin (2011) found that approximately 10% of adolescents reported their romantic partners gave them instruction on what they were permitted to do online and threatened them otherwise. Between 11 and 31.5% of adolescents and young adults has been a victim of cyber dating abuse (Bennet et al., 2011; Hinduja & Patchin, 2011; Zweig et al., 2013). Picard (2007) found that 30% of teenagers reported receiving between 10 and 30 messages an hours from a romantic dating to track location and who they were spending time with at that moment. These abusive behaviors, much like offline stalking, can be extremely harmful to victims, causing depression, anxiety, substance abuse, and posttraumatic stress symptoms (Prospero, 2007; Shorey, Febres, Brasfield, & Stuart, 2012; Shorey et al., 2011).

To what extent are romantic partners monitoring their significant other's actions and behaviors, and does it cross the line into stalking? In addition, are there theoretical predictors of this intrusive relationship behavior? The present study will investigate the possibility of explaining these unhealthy relationship patterns by applying two popular criminological theories: General Theory of Crime and Social Learning Theory.

2. Theoretical application

2.1. General Theory of crime

General Theory of Crime asserts that low self-control is the predictive factor of criminality. Gottfredson and Hirschi's (1990) argued that individuals who were exposed to ineffective parenting, characterized by lack of bond, poor supervisory monitoring, and inconsistent discipline, were more likely to develop lower levels of self-control (Gibbs, Giever, & Higgins, 2003; Gibbs, Giever, & Martin, 1998). Individuals with low self-control generally overlook the long-term consequences of their actions and tend toward self-serving behaviors that are impulsive and risky (Gibbs & Giever, 1995; Grasmick, Tittle, Bursik, & Arneklev, 1993). Gottfredson and Hirschi (1990) argued that individuals with low self-control are unable to see the consequences of their actions:

> … the dimensions [characteristics] of self-control are, in our view, factors affecting the calculation of the consequences of one's acts. The impulsive or shortsighted person fails to consider the negative or painful consequences of his acts; the insensitive person has fewer negative consequences to consider; the less intelligent person also has fewer consequences to consider (has less to lose). (Gottfredson & Hirschi, 1990, p. 95).

A multitude of criminological research studies have indicated that low self-control is a predictor of criminality (see meta-analysis by Pratt and Cullen, 2000). Specifically in regard to cybercrime, General Theory of Crime has been used to explain illegal music downloading (Higgins, Wolfe, & Marcum, 2008; Hinduja & Ingram, 2008), movie piracy (Higgins, Fell, & Wilson, 2007), software piracy (Higgins & Wilson, 2006; Moon, McCluskey, & McCluskey, 2010), and hacking behaviors online (Bossler & Burruss, 2010; Bossler, Holt, & May, 2012). Crime is attractive to individuals with low self-control because it provides the immediate benefits for the individual without considering the long-term impact of the act for themselves or others. This logic can also be applied to cyberstalking, as has been empirically applied in the past as well (Holt & Bossler, 2009; Reyns et al., 2012). The impulsive person is not likely to foresee the negative or painful consequences of stalking

the victim, but instead the instant gratification of tracking and uncovering knowledge.

2.2. social learning theory

The second theoretical application used in this study, Social Learning Theory, asserts that crime is a learned behavior and this learning process involves four parts. Concepts in the modern-day version of Social Learning Theory originated with Sutherland's Differential Association Theory, where Sutherland argued that people commit crime because of "an excess of definitions favorable to violation of law" (Sutherland, 1942, as cited in Tibbets, 2012, p.142). Definitions are attitudes formed regarding the morality and legality of certain behaviors, and these definitions are learned through association with one's peers (differential association). Criminological research has been generally supportive of the theory, asserting that the relationship between offending and having delinquent peers "is one of the most consistent findings in criminological research" (Kubrin, Stucky, & Krohn, 2009).

The four parts of Social Learning Theory, as applied in this study, is described by Akers (1998): (1) an individual's primary interactions with others in a group; (2) individual's attitudes toward a behavior, including the techniques, rationalization, and drives to perform a behavior; (3) imitation of this behavior; and (4) reinforcement refers to the anticipated and actual rewards and punishments of participation in the behavior (Higgins & Marcum, 2011). Research has demonstrated that differential association is the most supported part of social learning theory (Pratt et al., 2010), and they theory has found support when explaining cybercriminality as well (Bossler & Burruss, 2010; Higgins et al., 2007, 2008; Hinduja & Ingram, 2008; Holt, Burruss, & Bossler, 2010; Morris & Higgins, 2010). In addition, research using a similar combination of theoretical basis such as the present study has also indicated that individuals with lower levels of self-control gravitate toward deviant peer groups offline (Chapple, 2005; Longshore, Chang, Hsieh, & Messina, 2004) and online (e.g., Bossler & Holt, 2010; Wolfe & Higgins, 2009).

3. Present study

The present study is an exploratory examination in the "electronic leash," or the current technological invasiveness behaviors in relationships. This exploratory study will investigate the methods by which respondents monitor and track their significant others, and specifically the theoretical predictors of this behavior. By using two classic criminological theories, we are attempting to determine if low self-control and deviant peer association are predictors of participating in cyber dating abuse/cyberstalking behaviors while in a romantic relationships by a university student sample.

4. Methodology

4.1. Design

A sample of 3000 undergraduate and graduate students enrolled at a mid-sized university in the Southeast was randomly chosen by the university's Office of Institutional Research, Assessment, and Planning. The sample of students was sent three waves of invitation to participate in a survey regarding their online behaviors. Recruited students received an email inviting them to participate in the study, also indicating that they would have the opportunity to enter their names in a drawing for a $75 VISA Gift Card after the completion of the survey (this was the only time identifying information—email address—was requested from participants). If they chose to continue participation, they then clicked

on the link provided and immediately were taken to a page with the informed consent. If the recruited students still agreed to participate after reading the informed consent, they then continued on to complete the online survey. At the end of the third wave, 611 fully completed surveys of individuals in relationships were returned, equating to a 20.4% response rate.

4.2. Measures

The dependent measure for this study was a series of items that captured whether the respondent performed a number of behaviors without their romantic partner's knowledge. We added these items together to create a variety index of activities that the respondent has performed to keep track of their partner. The items included the following:

1. Checking a romantic partner's email without their knowledge;
2. Used a romantic partner's social networking website password without their knowledge;
3. Used a romantic partner's bank account password without their knowledge;
4. Checked a romantic partner's text messages without their knowledge; and
5. Used a tracking application on a romantic partner's telephone without their knowledge.

Each of these items were dichotomous $0 =$ no and $1 =$ yes. The internal consistency of the items was assessed using KR-20 and was acceptable 0.79. Higher scores on the index indicated more variety activities used to monitor their partner's behavior.

We used a number of independent measures to assess the correlates of this behavior. Specifically, we used an individual's level of self-control. Following previous research, we used the Grasmick et al. (1993) scale to capture self-control. Students indicate their level of self-control by responding to 24-items using a 4-point Likert-Type scale ($1 =$ Strongly Disagree to $4 =$ Strongly Agree). The internal consistency of the measure was satisfactory 0.88. Higher scores on the scale indicated lower levels of self-control.

In addition, we included measure of the perception that their friends performed similar behaviors. Specifically, the students responded to items of whether they believed that their non-romantic friends used a tracking application with their romantic partner without their knowledge, whether their friend checked their romantic partner's e-mail without their knowledge, and whether their friend used their romantic partner's online accounts (i.e., social network or financial) without their knowledge. The students marked their perceptions of these behaviors using a dichotomous answer choices (i.e., $0 =$ no and $1 =$ yes). The internal consistency of the items was assessed using KR-20 and was acceptable 0.70. Higher scores on the items indicated the more that the students perceived that their friends performed these behaviors.

The students provided information about their biological sex (0) was for male and (1) for female. The students provided their age $1 = 18{-}20$, $2 = 21{-}23$, $3 = 24{-}26$, and $4 =$ older than 26. The students provided their race by indicating whether they were white (1) or non-white (0). The students provided information about their grade point average by marking a five-point scale where $1 = 2.0$ or below, $2 = 2.1{-}2.5$, $3 = 2.6{-}3.0$, $4 = 3.1{-}3.5$, and $5 = 3.6{-}4.0$, and higher scores indicated higher grade point average.

4.3. Analysis plan

To gain a preliminary understanding of the correlates of

spreading gossip about others, the analysis took place in two steps. The first step was a presentation of the descriptive statistics. The mean and standard deviation—where applicable—provided information about the distribution of the measures.

The second step was a regression analysis. Preliminary results indicated a preponderance of zeros in the dependent measure. Following the Tobin (1958) and Long (1997), we decided to use Tobit regression to handle to preponderance of zeros. McDonald and Moffitt (1980) suggested in this type of situation that censoring at the lower limit was appropriate.

5. Results

Table 1 presented the descriptive statistics for the respondents of this study. Sixty three percent of the sample was female and the majority of the sample was White (82.40%). The majority of respondents were 18—20 years old and categorized as a junior or senior. Lastly, the average grade point average for sample respondents was 2.6—3.0. A series of items that captured whether the respondent performed a number of behaviors without their romantic partner's knowledge; the average performance of these behaviors is 0.27. In regard to the theoretical predictors, the average self-control score was 47.87. The average score of peer association was 1.41.

Table 2 presented the Tobit regression analysis. The results indicated that low self-control had a significant link with monitoring a romantic partner without his/her knowledge (b = 0.80, t = 2.00, p < 0.05). This link is supportive of Gottfredson and Hirschi's (1990) contention that low self-control has a link with deviant and criminal behavior. It is important to note that this takes place while including a measure of the perception that their friends perform similar behaviors. In addition, we found that Whites were less likely to perform this behavior.

6. Discussion

Formation and maintenance of romantic relationships is often completely different compared to the generation previous to this group, their parents, grandparents and beyond. Our society's reliance on technology for research, shopping, and communication has transitioned into the reliance on technology to foster romantic partnerships (Carpenter & Spottswood, 2013; Papp et al, 2013;

Table 1
Descriptive statistics.

Measure	n (%)		Mean	Standard deviation
Performed behaviors without knowledge of romantic partner			0.27	0.85
Low self-control			47.87	9.84
Perception of peers			1.41	1.06
Sex	Male	345 (63.30)		
Age	18—20	281 (51.60)	1.66	0.93
	21—23	140 (25.70)		
	24—26	26 (4.80)		
	Older than 26	44 (8.10)		
Race	White	449 (82.40)		
Grade point average	2.0 or below	5 (0.90)	3.25	0.90
	2.1—2.5	245 (45.00)		
	2.6—3.0	155 (28.40)		
	3.1—3.5	65 (11.90)		
	3.6—4.0	19 (3.50)		
Academic rank	Freshman	102 (18.7)		
	Sophomore	98 (18.0)		
	Junior	130 (23.9)		
	Senior	115 (21.1)		
	Graduate	47 (8.6)		

Table 2
Tobit regression analysis of behaviors without romantic Partner's knowledge.

Measure	b	SE
Low self-control	0.75[*]	0.38
Perception of peers	045	036
Sex	−0.19	0.85
Age	−0.30	0.49
Race	−3.03	1.03
Grade point average	070	082
F = 2.07[*]		
Psuedo r-square = 0.10		

[*]p < 0.05, [**]p < 0.01, Standard Errors are Robust Standard Errors.

PEW, 2013; Torres et al., 2013; Trepte & Reinecke, 2013). In other words, individuals have become increasingly dependent on the use of technology to initiate relationships, communicate with partners, and facilitate a future together. However, these common relationship patterns may not always be beneficial to each participant, with the electronic leash being a classic example. A romantic partner will choose to track and/or monitor the other partner without the knowledge and permission of said partner, such as monitoring email accounts or tracking their movements with a planted GPS. This exploratory study has provided insight into the new phenomenon of the electronic leash (often considered cyberstalking or cyber dating abuse based on legal and criminological definition of the term) and provided theoretical support for predicting the behavior in young adults (Baum et al., 2009; Bocij & McFarlane, 2003; Burke et al., 2011; Lyndon et al., 2011; Reyns et al., 2012; Sheridan & Grant, 2007).

Based on past research linking low self-control to cybercrime (Bossler & Burruss, 2010; Bossler et al., 2012; Higgins et al., 2007; Higgins et al., 2008; Hinduja & Ingram, 2008; Marcum, Higgins, & Ricketts, 2014; Moon et al., 2010), it is not surprising that low self-control was found to be a significant predictor of participating in behaviors that included monitoring and accessing password-protected accounts without the knowledge of the romantic partner. In other words, respondents in the study with lower levels of self-control were more likely to infiltrate personal accounts and track their significant others without the knowledge of that person. These individuals are considering the short-term benefits of knowing exactly where their romantic partner is located, what he is doing, and who he is with at that time. It satisfies curiosity, or a desire to control, a romantic partner and her activities. What is not considered is the impact this may have on the long-term sustainability of the relationship, trust, and potential for legal action.

The National Conference of State Legislatures (NCSL) (2012a; 2012b) reported that many states have enacted "cyberstalking" or "cyberharassment" laws, or have laws that included electronic forms of communication as an application to traditional stalking laws. Behaviors measured in this study reflecting the electronic leash could be considered cyberstalking or cyberharassment. The specific language of the statute may make the laws easier to enforce, with the NCSL defining the classifications as such:

Cyberstalking. *Cyberstalking is the use of the Internet, email or other electronic communications to stalk, and generally refers to a pattern of threatening or malicious behaviors. Cyberstalking may be considered the most dangerous of the three types of Internet harassment, based on a posing credible threat of harm. Sanctions range from misdemeanors to felonies.*

Cyberharassment. *Cyberharassment differs from cyberstalking in that it is generally defined as not involving a credible threat. Cyberharassment usually pertains to threatening or harassing email messages, instant messages, or to blog entries or websites*

dedicated solely to tormenting an individual. Some states approach cyberharrassment by including language addressing electronic communications in general harassment statutes, while others have created stand-alone cyberharassment statutes.

(National Conference of State Legislatures, 2012a, pp.1). Should the romantic partner being tracked or monitored (without his permission) discover this invasion, he may choose to file a criminal report which could involve these charges.

It was surprising to the researchers that deviant peer association was not a significant predictor of this type of behavior, especially since this theory has been supported by multiple past studies as a predictor of various forms of cybercriminality (Bossler & Burruss, 2010; Higgins et al., 2007, 2008; Hinduja & Ingram, 2008; Holt et al., 2010; Marcum et al., 2014; Marcum, Higgins, Wolfe, & Ricketts, 2015; Morris & Higgins, 2010). We believe that the general nature of the study does highlight the role deviant peer association. Respondents were asked questions about their perceptions of peer participation in the behaviors. Although not significant, it is interesting to note that a large portion of respondents believed their friends were unknowingly monitoring and tracking their significant others (hence inferring the behavior is acceptable). The lack of significance could be the result of the nature of the study. Further, we do believe there is a correlation between the two theories. Although not measured in this original exploratory study, we continue to believe that individuals with lower levels of self-control gravitate toward deviant peer groups, as found by past studies (Bossler & Holt, 2010; Chapple, 2005; Longshore et al., 2004; Marcum et al., 2014; Wolfe & Higgins, 2009).

Higher scores on the scale items indicated the more the students perceived that their friends performed these behaviors, the more they chose to participate in the unauthorized tracking and monitoring behaviors as well. The average score reported by respondents was 1.41, indicating that the average respondent felt as if their peers were also intruding on their own romantic relationships in this fashion as well. Adolescents and young adults are more likely to participate in behaviors if they feel as if their peers are also participating in and supportive of the behaviors. As Sutherland (1942) stated, crime is learned much like any other behavior and the likelihood of participating in such behavior increases with support from one's peers. In order to further investigate this connection, we will pursue future research that will inquire on behaviors of peers, perceptions of behaviors, and impact of these behaviors on peers and their partners.

While this study provides important insights, the study is not without its limitations. First, the study is limited to one geographical area (Southeast). However, future studies will be administered in other sections of the country to compare behaviors of young adolescents. In addition, a second administration of this survey will occur in spring 2016 and involve variables asking respondents to discuss perceived impact of the electronic leash behaviors. Second, the study needs to further take into account same sex relationships. Past research has indicated that stalking and other negative relationship behaviors are more prevalent in same-sex relationships than expected (Turrell, 2000; Williams & Frieze, 2005). Exploration of this occurrence on an electronic platform is necessary.

Despite the limitations, the study does provide some insight into the electronic behaviors of individuals who are in relationships, as well as the theoretical predictors of negative electronic leash behaviors. This exploratory study will hopefully provide support for universities and other youth-based organizations to develop programs and education on healthy relationships. Individuals may not be aware they are being monitored or stalked, or aware that these

are characteristics of unhealthy relationships. With follow-up studies further exploring this issue, we hope to contribute to a healthier lifestyle of young adults.

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