Examining Cyberstalking Victimization Using Routine Activities and Lifestyle-routine Activities Theories: A Critical Literature Review

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Activities Theories: A Critical Literature Review

Prior to the 1990s, stalking was not considered a criminal act. The State of California was the first to enact anti-stalking legislation in 1990 and other states have since followed suit (Taylor et al., 2019). Even though legal definitions of stalking differ, stalking can generally be defined as the repeated, unwanted pursuit of another person that incites fear in the victim (Fox et al., 2011; Reyns & Fisher, 2018; Tjaden & Thoennes, 1998). Traditional stalking behaviors include being repeatedly followed or spied on; repeatedly receiving unwanted phone calls; being sent unwanted letters, items, or presents; and the perpetrator repeatedly showing up at places the victim is present (Taylor et al., 2019). In the last two decades, Internet and network capabilities have emerged into society, allowing individuals to have instantaneous access to others. The ease of access to others in cyberspace has provided a new avenue for perpetrators to engage in stalking behavior (Reyns et al., 2011). Researchers have labeled stalking behaviors committed in cyberspace as cyberstalking.

In criminological research cyberstalking is commonly defined as the unwanted, repeated pursuit of an individual by electronic or Internet-capable means, which incites fear in the victim (Bossler et al., 2012; Henson et al., 2016; Reyns & Fisher, 2018; Reyns et al., 2011). Electronic and Internet communication is used to perpetrate cyberstalking and can include email, text messages, instant messages, or the use of social media/networking sites (Henson et al., 2016; Taylor et al., 2019). Additionally, the term cyberstalking is more commonly utilized in research concerning adult offenders and victims, whereas the term cyberbullying is used to describe the cyberstalking among minor offenders and victims (Henson et al., 2016). Both cyberstalking and cyberbullying will be mentioned in this literature review.

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Prior research has found varying rates of cyberstalking victimization, depending on demographic variables such as age of the victims. For example, the Cyberbullying Research Center has conducted eleven yearly studies concerning the prevalence of cyberbullying victimization (i.e., cyberstalking victimization among persons under the age of 18 years) among middle and high school aged children in the United States (Patchin, 2019). Of a sample size of more than 25,000 middle and high school children, cyberbullying victimization increased from 18.8% in 2007 to 36.5% in 2019, with the average rate of victimization being 27.8% per year (Patchin, 2019). The most recent national statistics concerning adult victims of cyberstalking estimate that over three million adults, or 1.5% of the adult population, in the United States are victims of stalking, in which 63.5% received unwanted phone calls and messages, and 28.4 percent received unwanted letters and emails (Catalano, 2012). Research has reported that both male and female victims of stalking experienced victimization via social media/networking sites (Maple et al., 2011), email (Catalano, 2012; Maple et al., 2011), through cellular calls (Catalano, 2012; Maple et al., 2011), text messages (Catalano, 2012; Maple et al., 2011), and instant messaging (Maple et al., 2011).

Cyberstalking among adult and juveniles alike is a growing problem in the United States. Since 2009, there has been a growing field of criminologists utilizing the theoretical frameworks of opportunity theories to explain the crimes of cyberstalking and cyberbullying. The principal concept of opportunity theories focuses on a motivated offender having access to targets (i.e., victims). Understanding the theoretical frameworks of opportunity theories such as routine activities and lifestyle-routine activities models is an important step in comprehending research regarding cyberstalking and the utility of these models on cyberstalking victimization.

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Theoretical Frameworks of Routine and Lifestyle-Routine Activities Models

One of the first opportunity theories attempting to explain crime victimization was lifestyle exposure theory (LET), developed by Hindelang et al. (1978). Hindelang et al. proposed that when individuals have routine daily activities (e.g., vocational and leisure activities) that subject them to contact with offenders, the more likely victimization will occur. Lifestyle exposure theory was one of the first theories to focus on the victim's lifestyle and how it influenced target (i.e., victim) selection for offenders.

A year later, to examine direct-contact predatory crime (i.e., crimes against persons or property) on a societal level, Lawrence Cohen and Marcus Felson (1979) published their classic criminological work now known as routine activities theory (RAT). Cohen and Felson (1979) proposed that "structural changes in routine activity patterns can influence crime rates by affecting the convergence in space and time of the three minimal elements of direct-contact predatory violations: motivated offenders, suitable targets, and the absence of capable guardians…" (p. 589). The essential elements, known together as the "crime triangle" include motivated offenders, suitable targets, and the absence of capable guardians (Vakhitova et al., 2016).

After more than a decade of researchers testing the components of lifestyle exposure theory and routine activities theory, the theoretical concepts of the two theories began overlapping in research, calling for an integrated theory (Reyns et al., 2011). For instance, Miethe and Meier (1990) proposed a structural-choice approach known as lifestyle-routine activities theory (LRAT), which argues that "routine activities may predispose some persons and their property to greater risks, but the selection of a particular crime victim within a socio-spatial context is determined by the expected utility of one target over another" (p. 245). Therefore,

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Miethe and Meier pulled the key concept of target (i.e., victim) selection from lifestyle exposure theory to merge with the elements of routine activities theory. Lifestyle-routine activities theory focused on the element of target (i.e., victim) selection by the motivated offender. The key elements of LRAT are proximity to motivated offenders, exposure to potential offenders, target attractiveness, and the absence of capable guardians.

The theoretical framework of lifestyle-routine activities theory has been used in research to explain different types of criminal victimization (Henson et al., 2016). With the expansion of Internet capabilities and the use of cyberspace as a means for stalking, researchers began examining the utility of lifestyle-routine activities theory on cyberstalking victimization. Some critics argued that models such as routine activities theory and by extension, lifestyle-routine activities theory is not suitable in examining crime occurring in cyberspace because there is no physical interaction of time and space between the offender and victim (Yar, 2005). However, Reyns et al. (2011) developed a revised lifestyle-routine activities theory and addressed the issues of space (i.e., place) and time in their adaptation.

In routine activities and lifestyle-routine activities models, "place" (i.e., space) is an important concept because "place" is where the potential victim meets the motivated offender. In cyberspace, the offender and target are physically separated but Reyns et al. (2011) theorized a computer network is the medium for the interaction between offender and target and replaces a physical environment. Secondly, the original frameworks proposed that crime occurs when motivated offenders and potential targets converge in time. In cyberspace, a motivated offender and potential targets may not converge or interact in real time. Reyns et al. argued motivated offenders and potential targets have a "temporal overlap" and the physical interaction at a specific time is not necessary when testing lifestyle-routine and routine activities theories in

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cyberspace, as long as the offender and victim eventually intersect (Henson et al., 2016). In their adaptation of lifestyle-routine activities theory, Reyns et al. (2011) developed the components reportedly needed for online victimization to occur: online exposure to motivated offenders, online proximity to motivated offenders, online guardianship, online target attractiveness, and online/electronic deviant lifestyle. Reyns et al.'s adaptation of LRAT is known as cyberlifestyle-routine activities theory (CLRAT).

Understanding the theoretical frameworks of routine activities and lifestyle-routine activities models is an important prerequisite to comprehending research regarding cyberstalking. Researchers attempting to test cyberstalking victimization with the key components of routine activities and lifestyle-routine activities models utilize deductive research, essentially deducing specific findings on whether RAT or LRAT can explain or predict cyberstalking victimization. When interpreting research findings, the reader needs to pay special attention to the conceptualizations and operationalizations of the key concepts measured in a particular study, as those variables may impact study findings. Researchers testing the utility of routine activities, lifestyle-routine activities, and cyberlifestyle-routine activities theories on cyberbullying/cyberstalking victimization have used a variety of variable measures to test the key concepts of these theories.

Definitions and Operationalizations of the Key Concepts

As the above theoretical frameworks have presented, there have been expansions of routine activities and lifestyle-routine activities theories (Miethe & Meier, 1990; Reyns et al., 2011). Researchers today use a mixture of concepts from routine activities, lifestyle-routine activities, and cyberlifestyle-routine activities theories to examine cyberstalking/cyberbullying. The use of mixed concepts from routine, lifestyle-routine, and cyberlifestyle-routine activities

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theories has left the field of criminology research in disagreement about the conceptualizations of framework variables.

Motivated Offender/Online Proximity and Exposure to Offenders

Cohen and Felson (1979) defined a motivated offender as an individual who possesses criminal inclinations and has the ability and capability to carry out criminal acts. The original framework of routine activities theory did not explicitly define the characteristics of a motivated offender, assuming motivated offenders largely exist, or were a given in society (Cullen et al., 2018). Cohen and Felson noted this limitation in their original work, indicating future research was needed to include social/structural factors that would contribute to offenders' motivations for crime.

In lifestyle-routine activities theory, the key concept of motivated offender was expanded to include the target's (i.e., victim's) exposure to potential offenders and proximity to motivated offenders. Exposure to potential offenders is commonly defined as the physical visibility and accessibility of potential victims or victims' property to the motivated offender at "any given time or place" (Cohen et al., 1981, p. 507). Proximity to offenders is the physical distance between where the victim resides and high crime areas where offenders are found (Cohen et al., 1981). The issue with the definitions of these two components is the overlap. For example, if an individual is in a high crime area, not only is the potential victim in proximity to motivated offenders, he/she is also exposed to offenders, which complicates the operationalization of the two concepts (Choi et al., 2019; Vakhitova et al., 2016). The same can be observed when applying the concepts of exposure and proximity to offenders online. Multiple studies have integrated online exposure and proximity into one independent variable to test the utility of routine activities theory and lifestyle-routine activities theory on cyberstalking/cyberbullying

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victimization (Bossler et al., 2012; Hinduja & Patchin, 2008; Navarro et al., 2017; Welsh & Lavoie, 2012).

Concerning stalking victimization occurring in cyberspace, researchers have used a variety of aspects to test online exposure to motivated offenders and online proximity to motivated offenders. Online exposure, which is measured by how visible and accessible the victim is to a motivated offender online, has been measured in research by computer skill level (Hinduja & Patchin, 2008), amount of time spent online (Hinduja & Patchin, 2008; Marcum et al., 2010; Reyns et al., 2011), and how participants spent their time online (Hinduja & Patchin, 2008; Welsh & Lavoie, 2012). Additionally, online exposure to motivated offenders can include the amount of online social media accounts owned by the participants (Hinduja & Patchin, 2008; Reyns et al., 2011), how often a day participants visits or updates his/her social media accounts (Marcum et al., 2010; Reyns et al., 2011), the number of photos participants post online (Reyns et al., 2011), and whether participants utilize instant messenger (e.g., Facebook Messenger) (Hinduja & Patchin, 2008; Reyns et al., 2011).

Online proximity to motivated offenders has been defined as the virtual proximity between a motivated offender and potential victims, including how likely a potential victim would encounter a motivated offender online (Reyns et al., 2011). Online proximity to motivated offenders has been measured by allowing strangers to access their online social networks, the amount of "friends" an individual has on all online social networks, and the use of online services created to assist individuals in adding friends for their online social network (Reyns et al., 2011). Other researchers have measured online proximity to motivated offenders by the hours victims' spent online (Bossler et al., 2012; Navarro et al., 2017), social network usage, peer online harassment (i.e., having friends who cyberbully others), computer deviance (e.g., pirated

music and movies, view pornography online, unauthorized access to others' online accounts,
etc.), and online harassment/virtual offending (i.e., cyberbullied other people) (Bossler et al.,
2012).

Target Attractiveness/Suitable Target

In routine activities theory, a target (i.e., potential victim) can be property or a person that
is attractive or desirable to the motivated offender. Cohen and Felson (1979) noted target
suitability:

> …is likely to reflect such things as value (i.e., the material or symbolic desirability of a
> personal or property target for offenders), physical visibility, access, and the inertia of a
> target against illegal treatment by offenders (including the weight, size, and attached or
> locked features of property inhibiting its illegal removal and the physical capacity of
> personal victims to resist attackers with or without weapons). (p. 591)

In their reconceptualization of RAT, Miethe and Meier (1994) described target
attractiveness as having "symbolic or economic value to the offender" (p. 49). Meaning, besides
the actual value of the person or property, the motivated offender might be attracted to the target
due to the offender's subjective value of the property/person. Additionally, target attractiveness
has also been defined as individuals' "perceived by motivated offenders as being vulnerable and
unlikely to actively or successfully resist" (Popp, 2012, p. 691). In the two above definitions of
target attractiveness, the words "perceived" and "symbolic" make testing target suitability
difficult in terms of identifying what rewards or targets are of value to the offender (Garofalo,
1987).

The definition of online target attractiveness may include information or content
published by the victim that attracts an online motivated offender (Reyns et al., 2011), or online

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actions that attract or deter motivated offenders (Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011; Reyns et al., 2011). Researchers have used a variety of measures to test for the attractiveness or suitability of potential online targets. Details such as publishing your full name, sexual orientation, relationship status, and online identifiers (e.g., addresses for other social network/blog sites, instant messenger ID, e-mail address, etc.) have been used to measure a potential target's online attractiveness (Reyns et al., 2011). Publishing interests and activities, and photographs and videos of themselves have also been used as a measure for target attractiveness (Reyns et al., 2011). Some researchers have included how often participants joined in with friends while cyberbullying others (Navarro et al., 2017), online target hardening techniques (e.g., social networking privacy settings) (Marcum et al., 2010; Navarro et al., 2017), communicating with strangers online/online risk taking (Marcum et al., 2010; Ngo & Paternoster, 2011), publishing emotional distress and family conflicts online (Marcum et al., 2010), and opening or clicking on unfamiliar attachments or links (Ngo & Paternoster, 2011) have also been used to examine target attractiveness.

Capable Guardianship/Online Guardianship

The role of the capable guardian in routine activities theory is imperative to the outcome of the crime (Vakhitova et al., 2016). The capable guardian is tasked with preventing the crime, and the absence of a capable guardian increases the risk of victimization. Cohen and Felson (1979) contended that capable guardianship (e.g., police, husband, security guard, etc.) was the most important concept on the "crime triangle". Marcus Felson and Lawrence Cohen (1980) defined capable guardianship as "any spatio-temporally specific supervision of people or property by other people which may prevent criminal violations from occurring" (p. 392).

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The conceptualization of capable guardianship was extended further in lifestyle-routine activities theory, providing that a capable guardian can have social and physical dimensions (Miethe & Meier, 1990; Miethe & Meier, 1994). The social dimension of LRAT consists of potential targets (i.e., victims) utilizing the presence of a human element, such as friends, law enforcement, and security guards; while the physical dimension includes personal protection and utilization of target hardening techniques, such as security alarms, technology, and weapons (Vakhitova et al., 2016). The role of capable guardianship can be conceptualized several ways in cyberspace.

For crime occurring in cyberspace, capable guardianship can occur by physical or social dimensions (i.e., protections) online. Online guardianship has been measured using physical/electronic protections such as online privacy settings (Reyns et al., 2011; Reyns et al., 2016); the utilization of online profile trackers (Reyns et al., 2011); and the use of anti-virus programs, adware software, and computer hardware/software updates (Bossler et al., 2012; Marcum et al., 2010; Ngo & Paternoster, 2011). Other items used to measure online guardianship include adding strangers to social media (Reyns et al., 2016); how likely participants disclose personal information online (Bossler et al., 2012; Welsh & Lavoie, 2012); computer proficiency (Bossler et al., 2012; Ngo & Paternoster, 2011); amount of times participants post photos of themselves online (Bossler et al., 2012); and knowledge about cybercrimes (Ngo & Paternoster, 2011).

Social dimensions of online guardianship consist of a human element, such as whether or not individuals have deviant peers (Bossler et al., 2012; Reyns et al., 2011), computer location (e.g., bedroom, living room, school, etc. where a guardian could monitor computer use) (Bossler et al., 2012; Marcum et al., 2010), virtual guardianship by parents (i.e., if the victim is under 18

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years old) (Marcum et al., 2010; Navarro et al., 2017), and whether a responsible guardian (i.e., family, friends, etc.) is present to deter cyberstalking from occurring (Reyns et al., 2011).

Online/Electronic Deviant Lifestyle

Another element used to test cyberstalking victimization is potential targets' online/electronic deviant lifestyle. Reyns et al.'s (2011) modified version of lifestyle-routine activities theory, cyberlifestyle-routine activities theory, included online/electronic deviant lifestyle as a measure to test the utility of LRAT in cyberspace. Online/electronic deviant lifestyle is defined as different predatory and deviant acts committed online by the victim (Reyns et al., 2011). These acts include repeated engaging in unwanted communication after being told to stop; continuously harassed another person online after being told to stop; repeated engagement in unwanted sexual advances toward another person; and repeatedly threatened to harm or spoke to another in a violent manner after being told to stop (Reyns et al., 2011). The concept of online/electronic deviant lifestyle also has elements of online risk taking and computer deviance. Hacking or attempting to hack into another person's social media account or computer accounts; engaging in online piracy; sending sexually explicit photos via text messaging; and receiving sexually explicit photos of another are included in Reyns et al.'s definition of online/electronic deviant lifestyle.

Summary of the Key Concepts and Conceptual Issues in Cyberspace

Conceptual issues can be found in many of the studies testing routine activities and lifestyle-routine activities on cyberstalking victimization. For example, the variables of computer deviance and online risk-taking as depicted in Reyns et al.'s (2011) study and definition of online/electronic deviant lifestyle overlap with some researchers' definitions of target suitability (Navarro et al., 2017; Welsh & Lavoie, 2012). Moreover, in the Reyns et al. study, one of the

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items used to measure online exposure to motivated offenders was the number of photos participants post online but then asked participants whether they posted photos of themselves as a measure of target attractiveness as well, essentially overlapping their concepts of motivated offender and target suitability and muddying how these two concepts are operationalized. Conceptual issues such as Reyns et al.'s measure of online proximity to offenders (i.e., the amount of "friends" an individual has on all online social networks) also overlaps with one of their measures for online guardianship (i.e., adding strangers to social media).

Furthermore, online target hardening techniques (e.g., privacy settings) is argued by some researchers to be a concept of capable guardianship (Reyns et al., 2011; Reyns et al., 2016; Welsh & Lavoie, 2012), while other researchers propose it is an indicator of target suitability/attractiveness (Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011). The deviation from the role of online target hardening techniques in Reyns et al.'s (2011) definition of capable guardianship is due to some researchers' contention that the role of a capable guardian must have a human element (Hollis et al., 2013).

Research Findings and Analysis

The utility of routine activities and lifestyle-routine activities theories explaining cyberstalking/cyberbullying victimization is unclear. For example, in Reyns et al.'s (2011) study, of the three variables of online proximity to motivated offenders, only one variable (i.e., adding strangers to social media) increased the likelihood of cyberstalking victimization. As previously mentioned, Reyns et al.'s element of online proximity to motivated offenders overlaps with their element in online guardianship. Two of the three guardianship measures (i.e., profile tracker and peer deviance) in the Reyns et al. study were predictive of cyberstalking victimization; however,

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a profile tracker would fall under some researchers' definition of target attractiveness/suitability

(Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011).

In Reyns et al.'s (2011) study, the strongest predictor of cyberstalking victimization was

online/electronic deviant lifestyle, which was not an original concept in the frameworks of

routine activities or lifestyle-routine activities theory. Reyns et al.'s found that potential targets

are 14 times more likely to become victims of cyberstalking when they engage in predatory acts

(e.g., cyberstalking/harassment, sexual aggressiveness, threats to others, etc.) and online risk

taking/ computer deviance. However, online/computer deviance conceptually overlaps with other

researchers' definitions of proximity to motivated offenders (Bossler et al., 2012). Similarly, in

Reyns et al.'s (2016) study, having deviant peers (i.e., a guardianship variable) was one of the

strongest indicators of cyberstalking victimization. Deviant peers were also the strongest

indicator of cyberbullying (i.e., cyberstalking) victimization in Bossler et al.'s (2012) study but

they included deviant peers as a proximity of motivated offenders measure.

All in all, exposure to potential/motivated offenders was the most consistent finding

supporting the utilization of routine activities and lifestyle-routine activities theories for

cyberstalking/cyberbullying victimization (Hinduja & Patchin, 2008; Marcum et al., 2010; Ngo

& Paternoster, 2011; Welsh & Lavoie, 2012). Proximity to online offenders showed some

support for LRAT on cyberstalking/cyberbullying victimization (Bossler et al., 2012; Navarro et

al., 2017). Of the motivated offender variables, the most consistent trait participants engaged in

that increased their likelihood of cyberstalking victimization was the amount of time they were

online (Bossler et al., 2012; Hinduja & Patchin, 2008; Marcum et al., 2010; Ngo & Paternoster,

2011; Welsh & Lavoie, 2012). Of the three original key concepts of routine activities theory, the

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absence of a capable guardian has received little to no support as a variable increasing the risk of cyberstalking victimization (Reyns et al., 2016).

Routine activities theory focuses on the direct physical interaction between the offender and victim, with a convergence of time and space. However, crime perpetrated in cyberspace can occur without physical interaction (Reyns et al., 2011). Cyberspace was not a criminal setting when Cohen and Felson (1979) published their work, but proponents of RAT and LRAT argue the theories can be adapted to encompass the complexities of time and space in cyberspace (Bossler et al., 2012; Grabosky, 2001; Marcum et al., 2010). Arguably, some researchers have contested the adaptability of routine activities theories being suitable in examining cybercrimes due to the disorganized environment of cyberspace. Majid Yar (2005) contended "…the cyber-spatial environment is chronically spatio-temporally disorganized. The inability to transpose RAT's postulation of 'convergence in time and space' into cyberspace thereby renders problematic its straightforward explanatory application to the genesis of cybercrimes" (p. 424). Thus, without the physical interaction of time and space, the original construction of RAT and LRAT seems to reduce the usefulness of those theories on cybercrime.

One of the main criticisms of using RAT and LRAT framework in cyberstalking research is the limited generalizability of the findings (Vakhitova et al., 2016). Most of the research studies detailed in this literature review used online self-report victimization surveys on purposive convenience samples of college or high school students in North America (Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011; Welsh & Lavoie, 2012). Additionally, even using random sampling, low response rates hinder the generalizability to the larger population (Reyns et al., 2011; Reyns et al., 2016).

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In regard to data analysis, the majority of researchers used either multiple or logistic regression to test whether routine activities or lifestyle-routine activities models explain cyberstalking/cyberbullying victimization (Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011; Reyns et al., 2011; Reyns et al., 2016; Welsh & Lavoie, 2012). The above studies used "main effects modeling, which assumes that the impact of a variable is the same across levels of other variables" (Vakhitova et al., 2016, p. 178). In other words, the researchers did not take into consideration how one independent variable may affect another independent variable. Miethe and Meier (1994) noted that using main effects modeling is problematic because "failure to examine whether variables have different effects across different contexts is a type of model misspecification that may dramatically alter substantive conclusions about the predictive validity of current theories" (p. 56). As this literature review has demonstrated, there are several conceptual, operational, and analysis issues facing the utility of routine activities and lifestyle-routine activities framework on cyberstalking victimization research today.

Suggestions for Future Research

Routine activities and lifestyle-routine activities theory research on cyberstalking has produced mixed and inconsistent results (Vakhitova et al., 2016). One of the reasons for the inconsistency is the researchers' use of the main theoretical concepts. Researchers have used a variety of definitions for the key concepts of LRAT and RAT, causing key concepts of the theory frameworks to be inconsistently applied in cyberstalking scholarship. The conceptual and operational issues in applying the key concepts is important to mention because a variable measure should not be defined as one concept in one research study when it is defined as another in other studies, as it muddies the framework components.

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As an example, some researchers define online target hardening techniques (e.g., privacy settings) as a guardianship measure (Reyns et al., 2011; Reyns et al., 2016), whereas other researchers propose it is an indicator of target suitability (Hollis et al., 2013; Marcum et al., 2010; Navarro et al., 2017). As evidence, when speaking about this issue, Hollis et al. (2013) stated, "the guardian is separate from the potential target; one cannot act as both potential target and their own guardian and still maintain the theoretical clarity required" (p. 76). Vakhitova et al. (2016) proposed that to improve scholarship consistency and promote stronger empirical support for RAT/LRAT framework on cyberstalking research, future research should clarify the definitions and operationalizations of the key concepts of the routine activities and lifestyle-routine activities framework.

Another reason for inconsistent findings in cyberstalking research using routine activities and lifestyle-routine activities framework may be due to the predominant utilization of non-probability, purposive convenience sampling methods (Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011; Welsh & Lavoie, 2012). Findings resulting from convenience (i.e., availability) sampling are known to not be generalizable (Bachman & Schutt, 2017; Vakhitova et al., 2016). To increase reliability and validity and garner stronger empirical support, future research pertaining to the explanation of the routine activities and lifestyle-routine activities theories on cyberstalking victimization should use probability, random sampling methods, as probability sampling methods increase the generalizability of research findings (Bachman & Schutt, 2017).

The majority of the studies detailed in this critical review utilized online self-report victimization surveys (Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011; Reyns et al., 2011; Reyns et al., 2016; Welsh & Lavoie, 2012). As with online

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self-report questionnaires, response rates are often low, which affects the studies generalizability and further replication. In future research, studies should consider other forms of data collection or incentives to promote increased response rates.

Lastly, the inconsistency and weak support of routine activities and lifestyle-routine activities models on cyberstalking victimization may be due to the complexity of the key concepts in cyberspace. Most of the studies used multiple or logistic regression (i.e., main effects modeling) to test whether routine activities and lifestyle-routine activities framework could explain cyberstalking/cyberbullying victimization (Bossler et al., 2012; Marcum et al., 2010; Navarro et al., 2017; Ngo & Paternoster, 2011; Reyns et al., 2011; Reyns et al., 2016; Welsh & Lavoie, 2012). It could be proposed that motivated offender, target suitability, and capable guardianship and their variants are too multifaceted for the above analyses. Therefore, empirical support and consistency could be improved if researchers utilized more sophisticated statistical models, such as multi-level models, to test the key concepts of the theoretical frameworks (Vakhitova et al., 2016).

Studies examining routine activities and lifestyle-routine activities framework on cyberstalking victimization appear to have mixed empirical utility. Future research in the field should be geared toward probability sampling with multi-level statistical models to increase the generalizability of research findings. Notwithstanding, future research redefining and/or adapting the key concepts of RAT and LRAT is needed to clarify the concepts' meanings as applied to cyberspace, as some concepts appear to be complex and may overlap with other variables. Cyberspace is a disorganized virtual environment, making the original frameworks of RAT and LRAT ill equipped at successfully explaining cyberstalking victimization. Even with the latest adaptations of RAT and LRAT for cybercrimes (Reyns et al., 2011; Reyns et al., 2016), these

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frameworks may need further adaptations and expansions, or a new framework may need to be

developed, to truly explain crime in cyberspace.

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References

Bachman, R. D., & Schutt, R. K. (2017). *The practice of research in criminology and criminal justice* (6th ed). Thousand Oaks, CA: Sage Publications, Inc.

Bossler, A. M., Holt, T. J., & May, D. C. (2012). Predicting online harassment victimization among a juvenile population. *Youth & Society, 44*(4), 500–523. https://doi-org.marshall.idm.oclc.org/10.1177/0044118X11407525

Catalano, S. (2012). *Stalking victims in the United States- Revised*. U. S. Department of Justice. https://www.bjs.gov/content/pub/pdf/svus_rev.pdf

Choi, K. S., Earl, K., Lee, J. R., & Cho, S. (2019). Diagnosis of cyber and non-physical bullying victimization: A lifestyles and routine activities theory approach to constructing effective preventative measures. *Computers in Human Behavior, 92*, 11-19. https://doi.org/10.1016/j.chb.2018.10.014

Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, *44*(4), 588-608. https://doi.org/10.2307/2094589

Cohen, L. E., Kluegel, J. R., & Land, K. C. (1981). Social inequality and predatory victimization: An exposition and test of a formal theory. *American Sociological Review, 46*(24), 505-524. https://doi.org/10.2307/2094935

Cullen, F. T., Agnew, R., & Wilcox, P. (2018). *Criminological theory: Past to present: Essential readings* (6th ed). New York, NY: Oxford University Press.

Felson, M., & Cohen, L. E. (1980). Human ecology and crime: A routine activity approach. *Human Ecology, 8*(4), 389-406. https://doi.org/10.1007/BF01561001

EXAMINING CYBERSTALKING USING RAT & LRAT THEORIES

Fox, K. A., Nobles, M. R., & Akers, R. L. (2011). Is stalking a learned phenomenon? An

empirical test of social learning theory. *Journal of Criminal Justice, 39*(1), 39-47.

https://doi.org/10.1016/j.jcrimjus.2010.10.002

Garofalo, J. (1987). Reassessing the lifestyle model of criminal victimization. In M. R.

Gottfredson & T. Hirschi (Eds.), *Positive criminology* (pp. 23-42). Thousand Oaks, CA:

Sage.

Grabosky, P. N. (2001). Virtual criminology: Old wine in new bottles? *Social and Legal Studies,*

10(2), 243-249. https://doi-org.marshall.idm.oclc.org/10.1177/a017405

Henson, B., Reyns, B. W., & Fisher, B. S. (2016). Cybercrime victimization. In C. Cuevas & C.

M. Rennison (Eds.), *The Wiley Handbook on the Psychology of Violence* (pp. 555-569).

John Wiley & Sons, Ltd.

Hindelang, M. J., Gottfredson, M. R., & Garofalo, J. (1978). *Victims of personal crime: An*

empirical foundation for a theory of personal victimization. Cambridge, MA: Ballinger.

Hinduja, S., & Patchin, J. W. (2008). Cyberbullying: An exploratory analysis of factors related to

offending and victimization. *Deviant Behavior, 29*(2), 129-156.

https://doi.org/10.1080/01639620701457816

Hollis, M. E., Felson, M., & Welsh, B.C. (2013). The capable guardian in routine activities

theory: A theoretical and conceptual reappraisal. *Crime Prevention & Community Safety*

15(1), 65–79. https://doi-org.marshall.idm.oclc.org/10.1057/cpcs.2012.14

Marcum, C. D., Higgins, G. E., & Ricketts, M. L. (2010). Potential factors of online

victimization of youth: An examination of adolescent online behaviors utilizing routine

activity theory. *Deviant Behavior, 31*(5), 381-410. https://doi-

org.marshall.idm.oclc.org/10.1080/01639620903004903

EXAMINING CYBERSTALKING USING RAT & LRAT THEORIES

Miethe, T. D., & Meier, R. F. (1994). *Crime and its social context: Toward an integrated theory of offenders, victims, and situation*. Albany: State University of New York Press.

Miethe, T. D., & Meier, R. F. (1990). Opportunity, choice, and criminal victimization: A test of a theoretical model. *Journal of Research in Crime and Delinquency, 27*(3), 243-266. https://doi-org.marshall.idm.oclc.org/10.1177/0022427890027003003

Maple, C., Short, E., & Brown, A. (2011). *Cyberstalking in the United Kingdom: An analysis of the ECHO Pilot Survey*. National Centre for Cyberstalking Research, University of Bedfordshire. file:///C:/Users/knutt/Downloads/ECHO_Pilot_Final.pdf

Navarro, J. N., Clevenger, S., Beasley, M. E., & Jackson, L. K. (2017). One step forward, two steps back: Cyberbullying within social networking sites. *Security Journal, 30*(3), 844-858. http://dx.doi.org.marshall.idm.oclc.org/10.1057/sj.2015.19

Ngo, F. T., & Paternoster, R. (2011). Cybercrime victimization: An examination of individual and situational level factors. *International Journal of Cyber Criminology, 5*(1), 773-793. https://search-proquest-com.marshall.idm.oclc.org/docview/921463679?accountid=12281

Patchin, J. W. (2019). *Summary of our cyberbullying research (2007-2019)*. Cyberbullying Research Center. https://cyberbullying.org/summary-of-our-cyberbullying-research

Popp, A. M. (2012). The difficulty in measuring suitable targets when modeling victimization. *Violence and Victims, 27*(5), 689-709. https://browzine.com/libraries/977/journals/40758/issues/8324339?showArticleInContext=doi:10.1891%2F0886-6708.27.5.710

Reyns, B. W., & Fisher, B. S. (2018). The relationship between offline and online stalking victimization: A gender-specific analysis. *Violence and Victims, 33*(4), 769-786.

EXAMINING CYBERSTALKING USING RAT & LRAT THEORIES

https://browzine.com/libraries/977/journals/40758/issues/176441352?showArticleInContext=doi:10.1891%2F0886-6708.VV-D-17-00121

Reyns, B. W., Henson, B., & Fisher, B. (2011). Being pursued online: Applying cyberlifestyle-routine activities theory to cyberstalking victimization. *Criminal Justice and Behavior, 38*(11), 1149-1169. https://doi-org.marshall.idm.oclc.org/10.1177/0093854811421448

Reyns, B. W., Henson, B., & Fisher, B. (2016). Guardians of the cyber galaxy. *Journal of Contemporary Criminal Justice, 32*(2), 148–168. https://doi-org.marshall.idm.oclc.org/10.1177/1043986215621378

Taylor, R. W., Fritsch, E. J., Liederbach, J., Saylor, M. R., & Tafoya, W. L. (2019). Sex crimes, victimization, and obscenity of the World Wide Web. *Cyber crime and cyber terrorism* (4th ed., pp. 197-203). Pearson.

Tjaden, P., & Thoennes, N. (1998). *Stalking in America: Findings from the National Violence Against Women Survey*. Washington, DC: National Institute of Justice. https://www.ncjrs.gov/pdffiles/172837.pdf

Vakhitova, Z. I., Reynald, D. M., & Townsley, M. (2016). Toward the adaptation of routine activity and lifestyle exposure theories to account for cyber abuse victimization. *Journal of Contemporary Criminal Justice, 32*(2), 169–188. https://doi-org.marshall.idm.oclc.org/10.1177/1043986215621379

Welsh, A., & Lavoie, J. A. A. (2012). Risky ebusiness: An examination of risk-taking, online disclosiveness, and cyberstalking victimization. *Cyberpsychology, 6*(1), 1–12. https://doi-org.marshall.idm.oclc.org/10.5817/CP2012-1-4

EXAMINING CYBERSTALKING USING RAT & LRAT THEORIES

Yar, M. (2005). The novelty of "cybercrime": An assessment in light of routine activity theory.

European Journal of Criminology, 2(4), 407-427. https://doi-

org.marshall.idm.oclc.org/10.1177/147737080556056