

ELABORATING SELF-CONTROL, ROUTINE ACTIVITIES, AND SOCIAL
DISORGANIZATION THEORIES TO EXPLAIN SCHOOL-BASED VICTIMIZATION

By

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ABSTRACT

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Several scholars in the field have argued for a need to integrate or elaborate criminological theory in order to move the field forward. To that end, this dissertation proposes and tests an elaboration of social disorganization theory, self-control theory, and routine activities theories, applied to the issue of school-based victimization. Specifically, each theory is applied individually to three operationalizations of school-based victimization, and a fully elaborated theory is applied as well. Akaike Information Criterion values are applied to each model to determine which theoretical approach is best for understanding school-based victimization. Each model includes cross-sectional and longitudinal multi-level methods. Results suggest that which theoretical approach is best for understanding school-based victimization is, in part, dependent upon methodological choices made, including how the dependent variable is operationalized and whether the model is run cross-sectionally or longitudinally. The dissertation concludes that theory elaboration is a viable option for moving the field forward, but that more consideration and discussion of the impact that methodological choices have on our understanding of theory is needed.

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CHAPTER 1: INTRODUCTION

In recent decades, bullying and other forms of school-based victimization have become noted as serious social problems. As a result, the public (including parents, teachers, school administrators, and other practitioners) has become increasingly aware of and concerned about bullying and school-based victimization. Increasingly, schools are taking action to prevent victimization from occurring among their student populations by focusing on improving school climate, instituting prevention programs, increasing surveillance efforts, and putting into place stricter disciplinary policies (e.g., zero-tolerance policies). Some of these efforts, such as those to improve school climate and the implementation of prevention programs, have been shown to effectively reduce the risk of bullying and other forms of school-based victimization (Blosnich & Bossarte, 2011; Gerlinger & Wo, 2016; Perkins, Perkins, & Craig, 2014; Reingle Gonzalez, Jetelina, & Jennings, 2016), while others, particularly physical security measures and harsh punitive discipline strategies have been shown to be ineffective or to have harmful effects (Burrow & Apel, 2008; Gerlinger & Wo, 2016; Kupchick & Farina, 2016; Tanner-Smith, Fisher, Addington, & Gardella, 2018).

Likewise, researchers have taken an interest in the causes and correlates of bullying and school-based victimization. This research has resulted in a robust body of knowledge about school-based victimization, bullying, and what factors differentiate the two. There is a considerable amount of conceptual overlap between the concepts, but bullying is differentiated by three particular characteristics: the act must be intentionally harmful, occur repeatedly, and involve individuals for whom there is an actual or perceived power imbalance (Olweus, 1993). Many school-based victimization experiences meet some of these criteria, but it is only when they meet all three that one can consider a child to be a victim of bullying.

Though this conceptual definition seems straightforward, there are considerable challenges to operationalizing and measuring bullying (Patchin & Hinduja, 2015; Vaillancourt, 2008). As Patchin and Hinduja (2015) argue, the various components of the Olweus bullying definition are difficult to measure and may depend on whether one is asking the offender or the victim of bullying. For example, victims may perceive intent to harm where the offender had none, while offenders may minimize the harm they are causing their victim. Unless researchers are cautious and mindful about their operationalization and measurement strategies, it is likely that many who set out to study bullying may not be fully capturing this complex concept. Alternatively, researchers may instead be measuring other forms of school-based victimization as well as bullying victimization.

These definitional nuances can have important implications for research findings (Huang & Cornell, 2015; Modecki, Minchin, Harbaugh, Guerra, & Runions, 2014), notably on estimates of bullying prevalence. The U.S. Department of Education estimates bullying impacts up to 21% of American youth aged 12-18 (U.S. Dept. of Education, 2016). A recent meta-analysis of prevalence rates for traditional and cyberbullying found an average traditional bullying perpetration prevalence rate of 35% and average traditional bullying victimization prevalence rate of 15% (Modecki et al., 2014, p. 605). Prevalence estimates are influenced by the way researchers capture this data. For example, whether or not a definition for what constitutes bullying behavior is provided may moderate the reported prevalence rate (Modecki et al., 2014). In fact, Modecki and colleagues (2014) found that “including the term ‘bully’ is related to lower prevalence rates” for all of the bullying outcomes they measured (p. 605). However, prevalence findings are also impacted by how researchers collect and interpret data. Measures that capture not only bullying victimization, but school-based victimization more generally, may result in

artificially inflated estimates of bullying prevalence, other forms of school-based victimization prevalence, or both. It is critical for researchers to fully conceptualize their dependent variables, to operationalize them in a mindful way, and to be upfront about what construct their data are actually measuring.

In spite of the complications associated with conceptualization and measurement, researchers have learned a great deal about bullying and other forms of at-school victimization. The two concepts often result in the same negative consequences for victims. Children who experience bullying or other forms of school-based victimization disproportionately report adverse psychological consequences, such as anxiety and depression, as well as poorer self-esteem and suicidal-ideation (Rigby, 2003). Further, bullying victimization is associated with negative physical health outcomes (Rigby, 2003) and psychosomatic problems (Gianluca & Pozzoli, 2009; Rigby, 2003), that, for some, persist into adulthood (Wolke, Copeland, Angold, & Costello, 2013). School-based victimization has also been associated with diminished social bonds with school (Popp & Peguero, 2012) and loss of friends (Wallace & Menard, 2017).

Perpetrators are not free from negative consequences as a result of their behavior. Youth who bully others are more likely to experience legal sanctions due to their involvement in bullying, and, like victims, are at increased risk of depression and suicidal ideation (Rigby, 2003). Some research suggests that, like victimization, bullying perpetration has consequences reaching into adulthood, including increased involvement in delinquency, violence, drug use, and a higher risk of psychopathy (Bender & Lösel, 2011; Klomek, Sourander, & Elonheimo 2015; Ttofi, Farrington, Losel, Crago, & Theodorakis, 2016). Additionally, students who victimize their peers are at risk of increasingly punitive disciplinary practices (e.g., zero tolerance policies). Zero tolerance policies have been associated with an increased risk of juvenile

involvement in the criminal justice system (for a review, see Mallett, 2016), have been shown to be ineffective in improving school behavior (Curran, 2016; Ruiz, 2017), and have been demonstrated to disproportionately impact students of color, potentially contributing to racial disparities in the criminal justice system (Curran, 2016; Hines-Datiri & Carter Andrews, 2017)

Given these consequences, researchers have shown considerable interest in the factors that put youth at greater risk of school-based victimization and bullying victimization. Social considerations seem to be important factors predicting victimization. Having friends that are victims, being socially isolated or socially incompetent, and having poor peer relationships all predict increased risk of victimization (Cook et al., 2010; Kljakovic & Hunt, 2016). Additionally, internalizing behavior (Cook et al., 2010; Kljakovic & Hunt, 2016) and conduct problems (Kljakovic & Hunt, 2016) are associated with school-based victimization. Certain contextual factors also increase one's risk of experiencing victimization at school, including heightened levels of motivated offenders (Schreck, Miller, & Gibson, 2003) and school climate (Blosnich & Bossarte, 2011; Gerlinger & Wo, 2016; Perkins, Perkins, & Craig, 2014; Reingle Gonzalez, Jetelina, & Jennings, 2016).

While criminological research employing specific theoretical approaches to explain and understand offending is abundant, the criminological research on bullying and other forms of school-based victimization is somewhat more limited. Research examining one's level of self-control as a risk factor of bullying victimization generally finds support for self-control theory (Gibson, 2012; Kulig, Pratt, Cullen, Chouhy, & Unnever, 2017; Unnever & Cornell, 2003). The role of peer influence is similarly supported in the literature (Echols & Graham, 2016; Lodder, Scholte, Cillessen, & Giletta, 2016; Menard & Grottpeter, 2011; Schreck & Fisher, 2004; Schreck, Fisher, & Miller, 2004). Routine activities theory also appears to be a promising theory

of bullying victimization (Cho, Hong, Espelage, & Choi, 2017; Cho, Wooldredge, & Park, 2016; Popp, 2012). This supports findings in the literature regarding situations that are especially likely to be conducive to bullying, such as in school bathrooms, halls between classes, or at recess where it is difficult to monitor all youth (Vallaincourt et al., 2010).

Several studies examine school-level predictors of victimization bullying and other forms of at-school victimization, and, unsurprisingly, generally show that school context matters with regard to victimization that occurs at school (Gendron, Williams, & Guerra, 2011; Saarento, Garandeau, & Salmivalli, 2015, Wynne & Joo, 2011). Though somewhat less common, some researchers have examined and come to similar conclusions about neighborhood-level context, generally showing that such context matters with regard to school-based victimization (Foster & Brooks-Gunn, 2013; Gibson, 2012; Holt, Turner, & Exum, 2014; Williams & Guerra, 2011). Some researchers have taken this research further by examining individual and contextual factors together, finding support for the notion that both factors should be considered when examining bullying victimization (Gibson, 2012; Holt et al., 2014). However, the research on this topic is somewhat limited and should be expanded.

One way that the research could be expanded is by elaborating existing criminological theories for the purpose of examining victimization with a multi-theoretical approach. Applying multiple theories to the understanding of victimization has several advantages. Doing so allows researchers to account for multiple potentially causal factors, which may increase both the amount of variance explained as well as the accuracy and predictive ability of criminological models. As discussed above, several theories have been identified as useful in explaining victimization, including self-control theory, or the general theory of crime (Gottfredson &

Hirschi, 1990; Schreck, 1999), routine activities theory (Cohen & Felson, 1979), and social disorganization theory (Bursik & Grasmick, 1993).

These theories and how they may interact will be discussed at length in the following chapter. It is worth mentioning here, however, that these theories have several overlapping concepts. For example, in their original work on self-control theory, Gottfredson and Hirschi (1990) discuss the importance of opportunity in the offending process. Opportunity is also a key factor in routine activities theory (1979), as without the intersection of motivated offender, suitable target, and lack of capable guardianship, there is no opportunity for crime to occur. Additionally, social disorganization theory (Bursik & Grasmick, 1993) posits that increased social disorganization results in a diminished ability for a community to regulate the behavior of its residents. This may be similar to Cohen and Felson's concept of capable guardianship, as residents of disorganized communities are unable or unwilling to serve as guardians and regulate the behavior of fellow residents. Indeed, research suggests that residents are less willing to serve in this capacity in more disorganized neighborhoods (Reynald, 2010).

The purpose of this dissertation was to propose and test an elaboration of criminological theories that have successfully predicted school-based victimization, including bullying victimization. Self-control theory, routine activities theory, and social disorganization theory were combined to examine various measures of school-based victimization. To that end, several broad research questions were addressed. First, the utility of self-control in predicting school-based victimization prevalence, variety, and frequency was examined. Second, routine activities theory was applied to school-based victimization. Third, social disorganization (measured at both the individual level and the census level – see Chapter 3 for more details) was assessed for its ability to predict school-based victimization. Finally, self-control, routine activities, and social

disorganization were combined to examine school-based victimization. Specific hypotheses for these research purposes will be listed in Chapter 3.

To address these questions, I conducted analysis on a longitudinal sample of youth (N= 1,672) from nine mid-sized cities in four American States (Arizona, Massachusetts, New Mexico, and South Carolina) (Esbensen, 2011). Surveys were administered to the participants three times between 2004 and 2005, and asked questions about a variety of topics, including bullying and violence, school and neighborhood characteristics, and personal characteristics (Esbensen, 2011). Due to the nested structure of the data, multi-level modeling was necessary, and multi-level logistic regression analyses and multi-level negative binomial regression analyses were run.

The three primary components of routine activities were assessed. Target suitability was measured in two ways: first, the degree to which an individual respondent engaged in delinquency, and second, self-control was considered as a factor of target suitability. Self-control was measured with a 16-item scale derived from measures developed by Grasmick and colleagues (1993). Proximity to motivated offenders was measured by perceived risk of victimization and peer delinquency. Capable guardianship was measured using unstructured socializing, perceptions of school safety, and perceptions of parental monitoring. Social disorganization was measured at both the individual level and the census level. At the individual level, two measures were used. These included respondents' perception of community disorder, and respondents' sense of collective efficacy within their communities. To measure social disorganization at the census tract level, I followed the approach of Zimmerman and Messner (2011). Concentrated disadvantage included the percent of residents living below the poverty line, the percent of residents receiving welfare benefits, the percent of single parent households,

the percent of residents who are unemployed, the median household income, and the percent of residents who are non-white. Residential stability was measured using the percent of the population living in the same home as five years earlier. Finally, ethnic heterogeneity was measured using the percent of the population that is foreign born. More detailed descriptions of the data, these variables, and my hypotheses and analysis strategy, can be found in Chapter 3.

The proposed study contributes to the field in important ways. First, elaborating existing criminological theory as applied to school-based victimization will move the overall field of criminology forward by providing a fuller understanding of how individuals come to be victimized. This also has the potential to account for how and why victimization occurs more accurately. Likewise, it will contribute to our understanding of victimization and more accurately predict it. Not only will the current study contribute to theory, but will have important implications for policy. A better, more complete understanding of victimization will result in more effective prevention and intervention strategies. These implications will be discussed further in the final chapter of the dissertation.

CHAPTER 2: LITERATURE REVIEW

Criminological Research on Bullying Victimization

Academic interest in bullying began in earnest the United States in the early 1980s (Espelage & Swearer Napolitano, 2003), and criminological inquiry in this phenomenon seems to have piqued shortly thereafter, in the 1990s. As with many emerging social phenomena, early research on bullying victimization was geared toward understanding exactly what kinds of behavior bullying entailed, who was most at risk of experiencing it, and how many were impacted (Monks et al., 2009). Attempts to discern possible causal mechanisms behind bullying victimization did not begin to appear in the criminology and criminal justice literature until the late 1990s, with the earliest mentions of specific criminological theories in the early 2000s (e.g., Unnever & Cornell, 2003; Wilson, Parry, Nettelbeck, & Bell, 2003). Researchers are still working to fully understand the consequences of bullying victimization (Moore et al., 2017) and just how many youth are impacted by this increasingly salient social problem (Modecki et al., 2014).

Criminologically, the relationship between bullying and other forms of offending during youth and into adulthood have been of considerable interest. Research suggests there is a viable link between childhood bullying behavior and offending later in life (Farrington & Ttofi, 2011; Ferguson, Boden, & Horwood, 2014; Jiang, Walsh, & Augimeri, 2011; Ttofi, Farrington, Losel, & Loeber, 2011). However, there are some discrepancies in the literature regarding to what extent early bullying behaviors can predict later offending behavior. For instance, Piquero and colleagues (2013) found that early bullying behaviors predicted only certain kinds of offending trajectories (i.e. high rate chronic offenders and high adolescence peak offenders) (p. 449). These authors also found these relationships became non-significant when other relevant factors were

controlled for in the model. There is also some evidence that being a victim of bullying is related to offending behavior later in life (DeCamp & Newby, 2014; Staubli & Killias, 2011).

Criminologists have also been interested in the relationship between bullying victimization and experiencing other forms of victimization, often referred to as poly-victimization (Finkelhor et al., 2005). Research suggests that youth who experience bullying victimization are, in fact, more likely to experience other victimization as well (Espelage & Holt, 2007; Holt, Finkelhor, & Kantor, 2007). Research has also demonstrated that individuals who are bullied earlier in life have a greater risk of experiencing victimization later in life (Staubli & Killias, 2011).

As a basic understanding of bullying and its relationship to other forms of offending and victimization were established, researchers began to question the causal mechanisms of bullying using criminological theories. Several models operating at both the individual and structural level have been assessed for their ability to explain and predict bullying victimization, including the general theory of crime (Gottfredson & Hirschi, 1990), routine activities theory (Cohen & Felson, 1979), and social disorganization theory (Bursik & Grasmick, 1993). The remainder of this literature review will discuss each of these theories in depth, as well as discuss the literature that has applied the theories to bullying victimization. It will conclude with a discussion of the utility of theory elaboration and unification.

Overview of the Systemic Model of Social Disorganization (Social Disorganization Theory)

The social disorganization perspective has been used in criminology for nearly a century (Rosenfeld, 1994). In that time, it has waned and waxed in popularity, and shifted from a somewhat subcultural framework to a control theory of crime (Bursik & Grasmick, 1993). The foundations of this theory lie in the so-called Chicago School of criminology, due in large part to

the work of Shaw and McKay (1942). They argued that juvenile delinquency was explained not only by individual characteristics, though they acknowledge individual variation plays an important role, but also by the structural conditions in which individuals lived, particularly poverty (Shaw & McKay, 1942). Individuals living in communities experiencing severe economic disadvantage were less likely to have access to conventional means to attain mainstream societally approved goals and goods, and so turned to unconventional (i.e., criminal) means. Such communities that also experienced social disorganization, indicated by high population turnover and racial/ethnic heterogeneity, were less able to sanction and control criminal behavior. This resulted in a kind of delinquent subculture in these communities that perpetuated over time.

Shaw and McKay developed their theory from data examining juvenile delinquency rates in Chicago. They found juvenile delinquency tended to cluster in particular parts of the city, specifically, the “central business district, industrial sites, and the zone in transition” (Bellair, 2016, p. 5). Shaw and McKay found that delinquency clustered in these areas consistently over time, even despite “dramatic changes in the ethnic and racial composition of these neighborhoods” (Bursik & Grasmick, 1993, p. 31). They suggested that in these parts of the city, residential turnover was high, as residents sought to move to better areas of the city as soon as possible (Shaw & McKay, 1942). Only those who could not afford to move out remained. Further, because a large portion of the population in these areas were immigrants and ethnic minorities, ethnic heterogeneity was high. These conditions combined to interfere with residents’ ability to develop informal social ties, and thus, to engage in informal social control (Bursik, 1988).

The work of Shaw and McKay, while highly influential in the field, is not without criticism. Perhaps the most significant is the criticism that Shaw and McKay did not clearly differentiate their causal factor (social disorganization) from their outcome (delinquency) (Bursik & Grasmick, 1993, p. 34). The theory has been criticized for using delinquency to indicate social disorganization, which also predicted delinquency. The work of Shaw and McKay has also been criticized for failing to take into consideration larger relational networks within neighborhoods and outside of neighborhoods (Bursik & Grasmick, 1993; Carriere, 1995).

In response to these critiques, Bursik and Grasmick (1993) developed what they called the “systemic theory of neighborhood organization” (p. 12). One way they sought to clarify the Shaw and McKay model was by introducing different levels of social control: private, parochial, and public (p. 16-17). By introducing these variables, they argued it was possible to clarify the ways that economic disadvantage, ethnic heterogeneity and population turnover impact these three levels of social control thereby affecting rates of delinquency in a neighborhood (p. 34). Introducing these levels of social control refines the theory by allowing it to account for personal relationships between residents, the larger informal networks they participate in, as well as how outside structural factors can impact communities (p. 17).

Bursik and Grasmick (1993) proposed that the socio-economic composition of a neighborhood directly impacts that neighborhood’s residential stability and racial/ethnic heterogeneity. This, in turn, impacts the private and parochial levels of social control. Specifically, residential instability and racial/ethnic heterogeneity impede a community’s ability to form bonds and networks, which makes it more difficult for members of the community to regulate behavior. Diminished private and parochial networks make it more difficult for the community to access outside sources of social control, such as police and government services.

These compromised sources of informal and formal social control impact the ability of the community to effectively socialize residents, leading to higher crime rates in such neighborhoods.

The Bursik and Grasmick model (1993) improves upon the original work of Shaw and McKay, though there are still criticisms of this model. The authors have been criticized for not fully exploring or specifying the public level of social control discussed in their model (Spergel, 1994). The model has also been criticized for failing to adequately take culture into consideration (Rosenfeld, 1994). Specifically, Rosenfeld argues that the elimination of culture in the social disorganization theory of crime was unnecessary and suggests Bursik and Grasmick (1993) reject culture as being tautological. He argues their approach of using social control and disorder as explanations is also tautological (p. 1388) and suggests reintroducing culture to the model could “enrich the structure explanations” of the model (p. 1389).

Social Disorganization and Bullying Victimization

Research examining bullying victimization from a social disorganization perspective is somewhat limited but has generally supported the theory (Foster & Brooks-Gunn, 2013; Gibson, 2012; Holt et al., 2014; Williams & Guerra, 2011). The extant research finds support for social disorganization in spite of differences in operational strategies between studies. For instance, some researchers have followed the strategy used by Sampson and colleagues (1997) applying census data to operationalize neighborhood disorganization (Foster & Brooks-Gunn, 2013; Gibson, 2012), while others used their individual respondents’ perceptions of neighborhood disorder (Holt et al., 2014). Regardless, the data seem to support the notion that social disorganization impacts bullying victimization. A notable exception to this literature was reported by Foster and Brooks-Gunn (2013) who found that, although residential instability

increased risk of victimization, immigrant concentration (a measure of racial/ethnic heterogeneity) had no significant effect on victimization (p. 1602), thus demonstrating only partial support for the theory

Overview of the General Theory of Crime

The general theory of crime, also known as self-control theory, was first introduced by Gottfredson and Hirschi in 1990 (Gottfredson & Hirschi, 1990). Their primary argument was that all offending behavior could be explained by a single factor: low self-control (Gottfredson & Hirschi, 1990). According to the authors, self-control is a trait that is developed relatively early in life and remains stable throughout an individual's life. It is developed as a result of adequate parenting, specifically: 1.) monitoring children adequately enough to know when they are misbehaving; 2.) recognizing problematic behavior as such; and 3.) disciplining children for said problematic behavior (p. 97). If parents are either incapable of or fail to do any of these things, the theory suggests their children are less likely to develop adequate levels of self-control.

Individuals with low self-control, according to Gottfredson and Hirschi, share a number of common characteristics: being present-oriented, more likely to take risks, quicker to anger, more physically oriented than mentally oriented, impatient, and are less likely to stick with a difficult task (Gottfredson & Hirschi, 1990: p. 89-90). For these reasons, the theory suggests that such individuals are inherently more likely to offend than those with higher levels of self-control when such an opportunity presents itself. The authors argue that criminal acts are "short lived, immediately gratifying, easy, simple, and exciting" (p. 14). These attributes make criminal behavior more likely to occur among individuals with low self-control.

Since their original publication on self-control, the theory has been tested widely in the field (Vazsonyi, Mikuska, & Kelley, 2017). Researchers have tested everything from the

proposed relationship between self-control and deviance/crime to the notion that self-control is a stable trait. This work has been summarized in several meta-analyses (Meyers, 2013; Pratt & Cullen, 2000; Vazsonyi et al., 2017). The field of research appears to support the basic assertion of the theory: that individuals with low self-control are more likely to engage in crime (Pratt & Cullen, 2000; Vazsonyi et al., 2017). Meyers (2013) also found support for Gottfredson and Hirschi's argument regarding the stability of self-control, though he found several factors that moderated the relationship.

Despite its wide empirical support in the field, the general theory of crime is not without criticism. The theory has been accused of being tautological (Akers, 1991, p. 204), as early studies utilized behavioral measures, often including measures of criminal propensity, to assess self-control, which in turn were used to predict criminal propensity (Vazsonyi et al., 2017). This criticism prompted the development of the so-called Grasmick scale of self-control, which provides attitudinal measures for self-control (Grasmick, Tittle, Bursik, & Arneklev, 1993). A recent meta-analysis (Walters, 2016) examined the ability of the Grasmick scale to measure self-control as compared to behavioral measures. The study found that even this scale is not free from potential issues. Walters (2016) suggests that the Grasmick scale and behavioral scales may be measuring different constructs (p. 157), suggesting the issue of tautology in the theory may be unresolved.

Nearly a decade after the theory was introduced, researchers expanded the theory to apply to victimization. Schreck (1999) argued that low self-control is a vulnerability that increases one's risk of victimization (p. 635). Individuals with low self-control are more likely to engage in behaviors that increase their risk of victimization – such as failing to secure belongings, or other risky behaviors (i.e., socializing with delinquent peers; drinking to excess, etc.). One finds

an important tie to the routine activities concept of target suitability here. Schreck (1999) argues that low self-control increases one's vulnerability to victimization, and much of the research examining his claim discusses this vulnerability with regard to targeting and opportunity (Pratt, Turanovic, Fox, & Wright, 2014). Individuals with low self-control may be considered inherently more suitable targets in the routine activities perspective because of the increased vulnerability to victimization discussed by Schreck (1999).

A number of researchers have tested the ability of low self-control to predict victimization and expanded upon its basic postulates. A recent meta-analysis conducted by Pratt, Turanovic, Fox, and Wright (2014) found a modest but consistent relationship between low self-control and victimization (p. 103). However, low self-control may be a better predictor of indirect forms of victimization than direct victimization (p. 87). Although low self-control purports to be a general theory of offending, at the time the meta-analysis was conducted, domestic violence victimization was notably absent from the body of literature, raising the question of whether low self-control is a general theory of victimization, particularly in light of the above-mentioned finding regarding direct versus indirect victimization.

Self-Control Theory and Bullying Victimization

Self-control theory has also been applied to bullying victimization, though, most often, with other criminological theories. To the author's knowledge, only one study has examined self-control theory alone in its ability to predict bullying victimization. In 2003, Unnever and Cornell found a significant relationship between attention deficit and hyperactivity disorder (ADHD) and bullying victimization. Introducing low self-control in the model failed to moderate this relationship, indicating that ADHD is a direct factor in bullying victimization, rather than self-control. However, the authors also find a strong relationship between ADHD diagnosis and low

self-control. Given that the diagnostic criteria for ADHD (American Psychiatric Association, 2013) overlap with characteristics of low self-control, and, in particular, with several of the items included in the Grasmick scale of self-control (1993) used by Unnever and Cornell (2003), it is possible there is a degree of confounding between these two constructs in their study.

A handful of other studies examining the potential relationship between self-control and bullying victimization have done so in conjunction with other criminological theories (Gibson, 2012; Holt et al., 2014; Kulig et al., 2017). This research suggests that self-control remains a significant predictor of bullying victimization even when other theoretical explanations are considered. One study showed that low self-control directly predicted bullying victimization, even when controlling for routine activities/risky lifestyle choices (Kulig et al., 2017). Research also suggests that self-control may be an important predictor in bullying victimization when accounting for neighborhood context (Gibson, 2012; Holt et al., 2014). However, the impact of self-control may actually be “conditioned by neighborhood type” (Gibson, 2012, p. 56). Taken together, this research suggests that low self-control is a promising and important factor in understanding why and how bullying victimization occurs but may not be the only important factor.

Overview of Routine Activities Theory

Routine activities theory was first introduced in 1979 (Cohen & Felson, 1979). Since then, it has become one of the dominant theories of victimization in the field. Cohen and Felson sought to explain the apparent disconnect between improvements in “structural conditions” (p. 589) thought to influence crime rates (i.e., poverty, median household incomes – especially for people of color) and increases in violent and property crimes. The authors argued that changes in

routine activities, such as the increasing number of women entering the workforce at the time, could explain this counter-intuitive pattern.

The original publication proposes that for criminal victimization to occur, a motivated offender must converge in time and space with a suitable target in the absence of capable guardianship (Cohen & Felson, 1979). Changes in any one of these components, they argued, could account for drastically changed crime rates, even if the other two components remained stable. For example, changes in the number of capable guardians could account for increased crime rates, even without an increase in motivated offenders (p. 589). These central components have been applied to understand victimization in a number of forms, ranging from property crime (e.g., Massey, Krohn, & Bonati, 1989) to sexual assault (e.g., Cass, 2007; Schwartz & Pitts, 1995), to online victimization (e.g., Holt & Bossler, 2008; Bossler & Holt, 2009; Reyns, Henson, & Fisher, 2011).

Proximity to motivated offenders is typically used to represent the concept that offenders and targets must converge in time and space for victimization to occur. Often, characteristics of the environment are used to capture this idea (McNeely, 2015). For example, neighborhoods that are highly disorganized are more likely to contain a larger number of motivated offenders, thus increasing potential targets' proximity to motivated offenders (p. 33). Target attractiveness is somewhat less straight forward, as what makes a target attractive may depend on the nature of the criminal act and/or the motivations of the offender (McNeely, 2015). Originally, Cohen and Felson (1979) argued attractive targets were those high in value, visibility and ease of obtainment (p. 591). However, this description may not apply in all circumstances. An alternative view of target suitability, known as "target congruence," was proposed by Finkelhor and Asdigian (1996, p. 6). Target congruence, they suggest, takes three primary forms: 1.) target

vulnerability, referring to “the victim’s capacity to resist or deter victimization” (p. 6); 2.) target gratifiability, referring to characteristics of the victim that the offender “wants to obtain, use, have access to, or manipulate” (p. 6); and 3.) target antagonism, referring to characteristics of the victim that “arouse the anger, jealousy, or destructive impulses of the offender” (p. 6).

The final major component of routine activities theory, guardianship, “refers to security measures adopted to prevent victimization” (McNeely, 2015, p. 34). This is a concept that, like target suitability, has evolved over time (Hollis, Felson, & Welsh, 2013; McNeely, 2015). Guardianship has grown to incorporate multiple forms. Today, research examines many types of guardianship, such as social guardianship, personal guardianship, and physical guardianship (for a discussion of these different forms of guardianship, see Bossler & Holt, 2009). The concept of social guardianship was also refined to include several new components, including handlers and managers, referred to generally as controllers (Hollis et al., 2013, p. 69-70). Handlers were described as guardians who “supervise potential offenders” (Hollis et al., 2013, p. 69), whereas managers are “those who supervise places or settings where criminal activity may occur” (Hollis et al., 2013, p. 69).

Routine activities theory has been criticized for taking the presence of a motivated offender for granted (Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996). While the theory can account for *how* victimization may occur (i.e., through the intersection of offender and target), it cannot account for *why* victimization occurs. The theory is particularly effective in understanding the components necessary for victimization, but deficient in understanding why a criminal event occurred between individuals rather than a non-criminal event. Some researchers have attempted to fill this gap by using the routine activities perspective to understand offending behavior, rather than victimization (Haynie & Osgood, 2005; Maimon & Browning, 2010;

Osgood et al., 1996), generally showing the theory can be applied to offending as well as victimization. The question of what inspires one to become a motivated offender, however, is still under-examined in the literature.

Routine activities theory is often integrated with lifestyles exposure theory, and considered as lifestyle routine activities theory (McNeely, 2015). Lifestyles exposure theory (Hindelang, Gottfredson, & Garofalo, 1978) essentially argues that differential risk for victimization can be explained by differences in lifestyles. While routine activities theory was originally used as a macro-theory to explain larger social trends (McNelly, 2015), integrating the theory with lifestyles exposure theory allowed for greater examination of individual-level risk, due to that theory's focus on attributes of the individual (i.e., race, sex) and how those influence exposure to risky situations (Hindelang et al., 1978).

Routine Activities Theory and Bullying Victimization

Several studies have utilized aspects of routine activities theory to account for bullying victimization (Cho et al., 2017; Kulig et al., 2017; Peguero, Popp, & Koo, 2015; Popp, 2012). In general, the literature shows that being in close proximity to motivated offenders increases the likelihood of being bullied (Cho et al., 2017; Kulig et al., 2017; Peguero et al., 2015). The impact of capable guardians such as parents, teachers, prosocial peers, or school security measures, is not directly measured in all studies, but has received mixed support when included (Cho et al., 2017; Peguero et al., 2015). Measures of target suitability have found support in empirical tests as well (Cho et al., 2017; Peguero et al., 2015), though there may be potential limitations with how target suitability is operationalized (this will be discussed further in Chapter 3). One notable exception to this literature is the work of Kulig and colleagues (2017), who found that routine

activities/risky lifestyle perspective variables did not directly predict bullying victimization. Rather, they found that low self-control had a direct effect on bullying victimization.

Overview of Theory Integration and Theory Elaboration

Though criminologists have proposed a number of theoretical explanations for bullying victimization, these theories, individually, are disparate and explain only part of the victimization process. Further, even the most successful theories explain only a small amount of variation in offending and victimization (Agnew, 2011). There is a need to develop more a robust, comprehensive theory for victimization occurring in the context of school and otherwise. Such criminological theories are essential to identify causal relationships that account for observed correlations in behavioral, attitudinal, environmental, and situational factors that influence criminality. To be effective, theories must have breadth, precision, depth, and comprehensiveness (Tittle, 1995: p. 17). Tittle (1995) argues that most of the current theories available cannot adequately meet these necessary characteristics of theory (p. 1).

Tittle (1995) proposes two options to deal with this issue: falsification or integration. Falsification involves directly comparing two or more theories in an attempt to show one theory better explains a phenomenon than other theories. This is often done by adding relevant variables for each theory into a single model to see which attain statistical significance. Researchers have conducted individual falsification studies (for example, see Matsueda & Anderson, 1998) as well as meta-analyses evaluating the body of theory-testing literature (for example, see Pratt & Cullen, 2000). Falsification serves the important function of weeding out theories that are unable to explain crime, ensuring the field only pursues likely avenues of causal explanation.

An alternative strategy is to integrate compatible theories in a mindful way, rather than put theories into direct competition. Theory integration is a complex undertaking, and rightly so.

As Hirschi (1979) argues, theories are more than simply the sum of their parts (i.e., the variables chosen to operationalize them) (Bernard & Snipes, 1996). It may be reckless to simply combine variables from Theory A and variables from Theory B into a single model and call it an integrated theory. Theory is defined as “a set of logically interrelated propositions designed to explain a particular phenomenon” (Blalock, 1969, as cited in Thornberry, 1989, p. 52). Recklessly combining theoretical elements into a single model risks sacrificing that notion of logically interrelated propositions. Rather, one must take into careful consideration the assumptions, propositions, and causal structure involved in the theories one seeks to integrate (Bernard & Snipes, 1996, p. 307) and construct a new set of logically interrelated propositions based on the interactions of the included theories.

Multiple strategies for theory integration have been suggested (Bernard & Snipes, 1996; Hirschi, 1979; Tittle, 1995). Bernard and Snipes (1996) suggest two avenues: propositional integration, which integrates theory based on a given principle, and conceptual integration, which links similar concepts in different theories. Hirschi (1979) also provided a helpful typology of theory integration, that is still referred to today. His typology consists of three primary types of theory integration. The first of these integrations involves end-to-end integration (p. 34) that “proposes a causal order” to the theories included (Bernard & Snipes, 1996, p. 307), recognizing that the independent variables of one theory become the dependent variables of the other. Hirschi (1979) points out that such an integration is fruitless in the event that the impact of the former theory in the sequence is accounted for by the latter theory in the sequence (p. 34). That is, if differential association completely accounts for the impact of general strain, there is little point in including general strain at all, as all the explanatory power lies in differential association.

A second type of theory integration described by Hirschi (1979) is side-by-side integration that involves applying multiple theories to the cases where they all are applicable (p. 35). Bernard and Snipes (1996) provide an illustrative example: if one theory purports to apply to all violent crime, and another purports to explain offending in a certain population, then an integrated theory of violent offending in that population could be developed by integrating the two theories (p. 308). Of the three integration types he describes, Hirschi (1979) seems to approve of this method more than the others. Indeed, it seems a practical approach to providing a meaningful causal explanation to certain cases. There is an important caveat, however. As Bernard and Snipes (1996) argue, one should not simply examine which theories appear most adept at explaining the outcomes of interest and combine them (p. 308). To combine all the “most successful” theories that apply to the outcome of interest risks violating the primary characteristics of adequate and useful criminological theory (depth, breadth, *precision* [emphasis added], and comprehensiveness (Tittle, 1995). Thus, one must be thoughtful in the use of side-by-side integration, or, as with atheoretical approaches that measure everything but the kitchen sink, one risks being accused of engaging in a fishing expedition.

The final type of theory integration described by Hirschi is up-and-down integration, which involves the abstraction of the theories included to their broadest applications (Bernard & Snipes, 1996, p. 308; Hirschi, 1979, p. 36). Theories that are abstracted to compatible constructs can then be integrated. This can create a more parsimonious theory of crime, as it may reduce several variables into a single abstract concept (Bernard & Snipes, 1996), and, according to Hirschi (1979), can “lead to greater explained variance because what were once considered unrelated processes may now be seen to bear on the same outcome” (p. 36). Hirschi also warned against researchers being too accepting of partial theories included in the integrated theory. He

expressed concern about researchers being too accommodating of inadequate theories with this form of theory integration.

Tittle (1995) outlines several strategies for integrating. First, he argues theories can be integrated structurally/sequentially (p. 115). This can be done in two ways: either by stringing theories together in a causal chain (similar in nature to Hirschi's end-to-end integration), or by identifying situations in which the causal processes of several theories go hand-in-hand (similar to Hirschi's side-by-side integration). Second, theories can be integrated conceptually (p. 116). This involves abstraction of the theories into their more basic conceptual properties, as with Hirschi's up-and-down integration. Third, theories can be assimilated. With this method of integration, theories are not completely broken down and created into something new, but are united, with each theory contributing to a causal process (p. 117). Ultimately, Tittle suggests the most successful theory integrations will use more than one of these approaches, which he refers to as an "integration of integration methods" (p. 118) or the "synthetic mode" of theory integration (p. 123).

There is, however, an alternative to theory falsification and integration: theory elaboration. This process "involves the logical extension of a particular theory, in an attempt to improve its adequacy" (Bernard & Snipes, 1996, p. 309). As several scholars point out (for an overview, see Thornberry, 1989), theory integration is difficult and runs the risk of "generating theoretical mush" (Thornberry, 1989, p. 51). Thornberry (1989) proposes, rather than theoretical integration, theoretical elaboration. He argues that theory elaboration occurs through three mechanisms: first, through the "imagination of the theorist" (p. 57); second, through empirical observation, as empirical findings refine our understanding of the propositions associated with particular theories (p. 58); and third, through the inclusion of "propositions contained in other

theoretical models” (p. 58). Although theory integration and theory elaboration are quite similar, Thornberry (1989) notes a crucial difference. Theoretical integration, he argues, focuses on reconciling conflicting theoretical elements (p. 59), while theoretical elaboration’s primary goal is “to maximize the explanatory power of a particular theory” (p. 59).

Overview of Multi-Theoretical Approaches to Understanding School-Based Victimization

This dissertation undertook a theory elaboration drawing from three criminological theories: social disorganization theory (Bursik & Grasmick, 1993), self-control theory (Gottfredson & Hirschi, 1990), and routine activities theory (Cohen & Felson, 1979). The goal of this project was to develop a fuller understanding of bullying and other forms of school-based victimization by elaborating and extended these three theories in relation to each other. An understanding of how each component of the included theories interacts and connects to components of the other included theories is an important step in this process. The following section will examine these theoretical connections in greater detail.

Theoretical Connections: Self-Control and Routine Activities Theory

Target Suitability - According to Cohen and Felson (1979), target suitability increases one’s risk of victimization. The authors do not clearly define what constitutes target suitability with regard to individuals. They suggest some factors that apply to material goods (e.g., value, visibility, accessibility, and inertia) (p. 595), but are less vocal on what factors constitute suitability with regard to individual characteristics. It stands to reason that low self-control may be an important factor of target suitability, for several reasons.

In one of the first studies to examine the role of self-control in victimization, Schreck (1999) argued low self-control makes one more vulnerable to victimization as a “by-product” of that low self-control (p. 635). The link between self-control and victimization has since been

found to be moderate but consistent in the literature (Pratt et al., 2014). Individuals with low self-control are less future oriented, less empathetic, quicker to anger, less diligent, and more risk seeking than those with high self-control (Schreck, 1999). These attributes make them easier, and therefore, more attractive targets (Schreck, 1999).

Low self-control may also increase one's suitability as a target in another, more indirect way. Individuals with low self-control have been shown to be more likely to engage in delinquency (Pratt & Cullen, 2000). Often, this involves interacting with other offenders, as crime, especially among young people, is often a group activity (Warr, 2002). By nature of the fact that those with low self-control are more likely to offend, such individuals are inherently more suitable targets than those who do not engage in such behavior. Not only are such individuals more vulnerable by virtue of having low self-control, they are easily accessible to offenders by virtue of offending themselves. This may help to explain the robust evidence of a victim-offender overlap in the extant literature (Jennings, Piquero, & Reingle, 2002).

Proximity – Research has largely demonstrated that delinquent peers significantly predict victimization (Jensen & Brownfield, 1986; Lauritsen, Laub, & Sampson, 1992; Schreck et al., 2004). Some research has suggested that those with low self-control make poor friends, and so self-select into more deviant social groups, as they are unwelcome among more prosocial peers (Chapple, 2005; Evans, Cullen, Burton, Dunaway, & Benson, 1997; McGloin & Shermer, 2009; Schreck, Stewart, & Fisher, 2006, but see Young, 2011). In addition to being a potentially important factor in target suitability, it may therefore be that low self-control informs the routine activities approach in other meaningful ways. Low self-control may also impact one's proximity to motivated offenders by limiting their opportunities for prosocial peer networks.

Guardianship - Gottfredson and Hirschi (1990) argue that criminal behavior is the result of an individual having low self-control and being presented with an opportunity for offending (p. 269). While they acknowledge the necessity of opportunity for criminal offending to occur, they are not forthcoming in what specifically constitutes opportunity or what may account for variability in this important factor (Grasmick et al., 1993). However, given its importance to the theory, failure to include some conceptualization of opportunity risks misspecifying one's model. With regard to victimization, opportunity remains a necessary component – even if one is more vulnerable to victimization due to low self-control, victimization is unlikely to occur if the opportunity does not arise. Capable guardianship may be one factor that limits opportunity for victimization, and self-control may impact this relationship.

Little research has examined the impact of unstructured socialization on victimization (Henson, Wilcox, & Cullen, 2010; McNeely & Hoeben, 2017). However, unstructured socializing has consistently been found to be an important predictor of adolescent deviance and violence in routine activities research (Anderson & Hughes 2009; Haynie & Osgood, 2005; Hoeben & Weerman, 2014; Hoeben & Weerman, 2016; Hoeben, Meldrum, Walker, & Young, 2016; Maimon & Browning, 2010; Osgood et al., 1996; Osgood & Anderson, 2004), though this may depend on the nature of the location of such socialization (Hoeben & Weerman, 2014).

Few studies have attempted to understand why this relationship exists. One study sought to examine this question, finding that unstructured socializing is associated with delinquency for three reasons: unstructured socializing leads to increased exposure to delinquent peers, increases the perceived opportunity to offend, and increases tolerance for substance use (Hoeben & Weerman, 2016). Though this research examines offending rather than victimization, it is still relevant to our understanding of victimization, given the overlap between offending and

victimization (Jennings, Piquero, & Reingle, 2012) and the theorized relationship between offending and target suitability (see above).

Individuals with low self-control are more likely to participate in unstructured socializing (Janssen, Bruinsma, Dekovic, & Eichelsheim, 2016). As discussed above, this may be a result of individuals with low self-control making poor friends, and thus excluded from more prosocial peer groups who may be less likely to engage in unstructured socializing. Additionally, Gottfredson and Hirschi (1990) suggest that individuals with low self-control are less likely to tolerate the structure of most venues of supervised socialization (e.g., organized sports, after school activities, etc.), and thus are more likely to spend time in the streets away from adult supervision (p. 157).

Regardless of the reason behind the association, individuals with low self-control are more likely to engage in unstructured socialization and are therefore less likely to be in proximity to capable guardianship. This may provide the opportunity necessary for victimization to occur, and lack of capable guardianship may partially account for the relationship between low self-control and victimization. Further, individuals with low self-control are unlikely to alter behavior after victimization (Turanovic & Pratt, 2014). This means such individuals will continue to engage in the risky lifestyles (i.e., unstructured socialization) that resulted in their initial victimization, putting them at increased risk of subsequent victimization.

Theoretical Connections: Social Disorganization and Self-Control

There is evidence to suggest there may be an important interplay between social disorganization and self-control. Gibson (2012) found self-control to predict victimization in the most affluent neighborhoods, but not in the worst neighborhoods. This is a somewhat surprising, and needs further consideration, particularly in conjunction with Holt and colleagues' (2014)

finding that the effect of self-control became a non-significant factor in physical bullying once neighborhood disorder and poly-victimization were entered into the model. One possibility for these findings is that social disorganization plays an important role in the development of self-control.

The subject of what factors influence the development of self-control in an individual has been examined at some length by the criminological community since the release of Gottfredson and Hirschi's (1990) theory. In their original argument, Gottfredson and Hirschi argue the primary source of self-control is the proper socialization of children by parents. To do this, parents must tend to their children, recognize problematic behavior, and consistently discipline said behavior. Since their writing, a number of studies have sought to examine this claim (Boisvert, Vaske, Taylor, & Wright, 2012; Botchkovar, Marshall, Rocque, & Posick, 2015; Crosswhite & Kerpelman, 2012; Gibson, Sullivan, Jones, & Piquero, 2010; Hay, 2001; Vazsonyi & Huang, 2010), generally finding that parental behavior does seem to predict the development of self-control in children.

If parents are indeed influential in the development of self-control, it is sensible to examine what factors may inhibit parents' abilities to socialize their children. There is evidence to suggest a relationship between neighborhood context and individual levels of self-control (Gibson, Sullivan, Jones, & Piquero, 2010; Teasdale & Silver, 2009), suggesting something about the nature of the environment is involved in the development of this trait. Research has found that the relationship between neighborhood context and self-control may be explained by the impact it has on parenting style (Ceballo & McLoyd, 2003; Simons et al., 2005). As parents certainly constitute part of one's "intimate informal primary group" (Bursik & Grasmick, 1993, p. 16), they can be considered part of the private level of social control. Social disorganization

negatively impacts the efficacy of private social control to regulate behavior, therefore inhibiting the development of self-control among youth residing in such neighborhoods.

Bursik and Grasmick (1993) list two other levels of social control: parochial and public. Let us first consider parochial social control. This refers to “the broader local interpersonal networks and interlocking of local institutions” (p. 17). They specifically include schools in a list of potential examples of parochial social control. Gottfredson and Hirschi (1990) also argue that, in the event parents are unable to adequately socialize their children, other institutions may step up to do so. In particular, they point to the school as a potential source of socialization (and therefore self-control) (p. 105). This argument, too, has been assessed by some criminologists, and research suggests that schools may indeed contribute to the development of self-control among young people (Beaver, Wright, & Maume, 2008; Jo & Armstrong, 2018; Meldrum, 2008; Moon, McCluskey, Blurton, & Hwang, 2014; Turner, Piquero, & Pratt, 2005).

Social disorganization has been shown to impact the school environment in a number of ways, though some of this research is mixed. One study found community characteristics predicted higher rates of student misconduct and problematic behavior net of individual characteristics (Armstrong, Armstrong, & Katz, 2015), though another study found that individual level variation explained the majority of variance in student misbehavior, with community level predictors only explaining approximately 6% of this variance (Welsh, Greene, & Jenkins, 1999).

Additionally, community context has been associated with graduation expectancies and graduation rates, with concentrated disadvantage in communities predicting poorer outcomes in these measures (Henry, Cavanagh, & Oetting, 2011). One study found that community poverty was associated with school stability (attendance and student turnover), which in turn predicted

school disorder (Welsh, Stokes, & Greene, 2000). Finally, community context may impact school context by influencing the quality of teachers. Research has shown schools with high populations of students of color and low income students have poorer quality instructors than more affluent, white schools, and that higher quality teachers tend to leave poor urban schools (Goldhaber, Lavery, & Theobald, 2015; Lankford, Loeb, & Wyckoff, 2002). The end result may be that schools in contexts of disorganization and concentrated disadvantage are ill equipped to serve as an alternative socializing agent.

Bursik and Grasmick (1993) also point to the potential of public sources of control, namely, public resources and relationships with law enforcement officers (p. 17), as a means of regulating the behavior of residents. Here, Gottfredson and Hirschi (1990) disagree, stating that “the police are not a factor in the overwhelming number of robberies, burglaries, assaults, homicides, thefts, or drug deals” (p. 270). They argue the role of police is to respond to crime (p. 270). Research on policing conducted since then suggests Gottfredson and Hirschi may have understated the role of policing in reducing crime. Several meta-analyses on policing suggest policing, particularly hot spots policing and problem-oriented policing, produces a modest effect on crime (Bowers et al., 2011; Braga, Papachristos, & Hureau, 2014; Braga, Welsh, & Schnell, 2015). It is unclear whether law enforcement officers may serve as a potential source of socialization and self-control development, in the way Gottfredson and Hirschi theorized schools might. To the author’s knowledge, no research has examined this possibility.

What is clear is that the level of disorganization has an impact on the nature of law enforcement availability and quality in a community, as well as how law enforcement officers are perceived by community members. Socially disorganized communities may have lower clearance rates for reported crimes (though this may depend, in part, on the nature of the crime)

(Roth, 2017). Additionally, calls for service may result in fewer instances of police officers recording the event in disorganized communities, possibly due to lower expectations of being able to apprehend an offender (Varano, Schafer, Cancino, & Swatt, 2009). Communities characterized by social disorganization are also more likely to experience police misconduct (Kane, 2002), and residents of such communities are more likely to view the police negatively (Corsaro, Frank, & Ozer, 2015; Reisig & Parks, 2000; Schuck, Rosenbaum, & Hawkins, 2008). Finally, citizens living in disorganized communities may be less willing to cooperate with police officers (Wehrman & De Angelis, 2011). This relationship may also cut both ways, as some research has shown police officers are more likely to perceive citizens as less cooperative in beats with lower social organization (Shjarback, Nix, & Wolfe, 2017).

Low self-control may exacerbate this situation. There is research to suggest that youth with low self-control have poorer attitudes toward the police than those with higher levels of self-control (Baron, 2016), though this relationship may be indirect (Wolfe, 2011). There is also evidence that individuals with low self-control are less likely to be compliant (DeLisi et al., 2008). Perhaps unsurprisingly, individuals with low self-control who come into contact with law enforcement officers are more likely to be arrested than those with higher levels of self-control (Beaver, DeLisi, Mears, & Stewart, 2009).

Theoretical Connections: Social Disorganization and Routine Activities

Criminologists have suggested the value in integrating social disorganization theory and routine activities theory in the past (Andersen, 2006; Osgood & Anderson, 2004; Rice & Smith, 2002; Smith, Frazee, & Davison, 2000). This literature suggests that the theories are valuable together in explaining how contextual features and opportunity interact to predict disparate crime rates across communities. Indeed, these studies have shown that, not only do both theories

significantly contribute to crime when considered together, but several interactions between components of the two theories exist.

There are several important interactions between social disorganization and routine activities identified in the above-mentioned studies. Unstructured socializing appears to be an important factor in criminal behavior. Osgood and Anderson (2004) argue that opportunity for unstructured socializing is greater in disorganized neighborhoods, as shared parental monitoring is less effective in these neighborhoods. Additionally, Anderson (2006) found that increases in young people in a neighborhood was associated with increased crime – this may reflect a similar process to that found by Osgood and Anderson (2004). However, as Anderson (2006) did not measure parental monitoring, it is impossible to know for sure. Rice and Smith (2002) find an interaction effect between opportunity and social disorganization and argue that to fully understand their dependent variable (automobile theft), both theoretical approaches are necessary. Likewise, Smith, Frazee, and Davison (2000) found a number of interaction effects between social disorganization theory and routine activities theory and suggest the interactions between the two theories provide a better explanation for street robberies than either theory alone.

While these studies are promising, more can be done to elaborate the relationship between social disorganization and routine activities. While these studies focus largely on the interaction of contextual factors and opportunity (e.g. proximity of motivated offenders to suitable targets in disorganized neighborhoods), more research is needed to fully explicate these relationships. For example, the relationship between social disorganization, private/parochial/public control, and guardianship needs further examination. One would expect that guardianship would be inherently compromised in disorganized neighborhoods.

Dissertation Purpose

The purpose of this dissertation was to develop and test an elaboration of social disorganization, self-control, and routine activities. Specifically, the dissertation aimed to ascertain whether a multi-theoretical approach incorporating all three theories was a better fit for the data than any one theory individually. Understanding whether and which theories can work together to increase the predictive accuracy of criminological models is an important contribution to the field. As has been discussed above, it has been suggested by some scholars in the field that the utility of individual criminological theories is somewhat limited (Agnew, 2011; Bernard & Snipes, 1996; Tittle, 1995). Understanding when and where theories can be applied together to improve our explanatory and predictive abilities can be an important step to improving our theoretical landscape.

This dissertation used multi-level, longitudinal data from a sample of youth from four American states to explore these issues. Three operationalizations of the dependent variable (school-based victimization) were developed: overall risk/prevalence of school-based victimization, extent of school-based victimization, and number of types of school-based victimization experienced. For each dependent variable, a total of five models were run, including a baseline model with no theoretical predictors, models for each individual theory included in the study, and a final multi-theoretical model including all three theories together. Additionally, cross-sectional and longitudinal versions of each model were run, to assess the potential impact of time-order on the findings.

CHAPTER 3: METHODS

Data, Research Design, and Data Collection

The data for this dissertation came from an outcome evaluation of the Teens, Crime, and Community/Community Works (TCC/CW) program (Esbensen, 2011). The data were collected from middle school students in nine mid-sized cities across four states (Arizona, Massachusetts, New Mexico, and South Carolina). The purpose of the evaluation was to assess both the implementation and impact of the TCC/CW program in reducing risk factors for adolescent victimization and lowering levels of offending and victimization for adolescents who went through the program (Esbensen, 2011). The original study was quasi-experimental in design. Fifteen middle schools participated in the study, and classrooms within these schools were matched by teachers or subjects (Esbensen, 2009). Originally, half of the classrooms were selected to participate in the TCC/CW program, while the other half served as the control group. Both groups were asked to complete a pre-test survey before the treatment was administered, a post-test survey immediately after the program concluded, and a one-year follow up survey.

However, fidelity issues with the implementation of the program required the program and its evaluation to be abandoned as a research purpose. The Community Works program was therefore not fully implemented in this sample. Often, research conducted on data collected for program evaluation purposes requires special consideration, as data from post-test instruments may be influenced by the respondent's participation in the program in question. For example, a respondent's score on delinquency may be considerably lower in the post-test than the pre-test if they have just completed an intervention program intended to reduce delinquency. Because the Community Works program was not fully implemented, this is a consideration that is not necessary in this study.

Self-report questionnaires were used to collect three waves of data from the participants. Wave one was conducted during fall of 2004; wave two was collected during spring of 2005, and the final wave was collected during fall of 2005 (Esbensen, 2011). The questionnaires asked students to report on a number of factors, including demographic information, exposure to risk and protective factors, attitudes and opinions about various issues, such as community issues, and the police. Parental consent forms and respondent assent were required to participate in the survey. Twenty-eight percent of possible respondents did not participate because either their parents actively denied consent, or the respondent failed to provide a consent form (Esbensen, 2011).

Of those who obtained parental consent, response rates were quite high, with 96% completing the first wave, 89% completing the second wave, and 72% completing the third wave. A predictive mean matching strategy (Allison, 2002) was used to impute missing data for the respondents who participated in a wave but had missing data within the wave. Data were not imputed for cases where an entire wave was missing (because, for example, the student was absent on the day the data were collected for that wave), resulting in ten imputations, with 4,268 observations per imputation, unbalanced across waves. Comparisons of measures of central tendency and dispersion between the imputed data and original data suggest the multiple imputation resulted in a final data set that closely resembles the original data. Unfortunately, not all analytic commands are compatible with the multiple imputation feature in Stata 15.1, the software used for analysis in this dissertation. Due to the structure of the data (see Analytic Strategy, below), the analytic commands necessitated the use of multi-level binary logistic and negative binomial regression. These commands are not compatible with imputed data in Stata.

To address this issue, one of the ten imputations created in the multiple imputation process was selected at random, and all analyses were conducted on this imputation.

Sample

As mentioned above, the sample for this study was drawn from fifteen middle schools in four U.S. States (Arizona, Massachusetts, New Mexico, and South Carolina). A purposive sampling technique was used to identify schools offering the CCTW/CW program (Brick, Taylor, & Esbensen, 2009; Coffman, Melde, & Esbensen, 2015; Melde, 2009; Melde & Esbensen, 2011; Melde, Taylor, & Esbensen, 2009; Slocum, Taylor, Brick, & Esbensen, 2010; Wu & Pyrooz, 2016). Approximately 45% of the final sample were males, and approximately 30% identified as white, non-Hispanic. Hispanic adolescents comprised 42% of the sample, while 11% identified as black. Most of the respondents were either twelve or thirteen years old during the first wave of data collection. The majority of respondents (72%) reported experiencing some form of school-based victimization during the duration of the study.

Study Purpose, Research Question, and Hypotheses

The purpose of this study was to propose and test an elaboration of social disorganization, self-control, and routine activities theory, and to explore the utility of a multi-theoretical approach to understanding school-based victimization. To that end, the following research question was assessed:

Can social disorganization theory, low self-control, and routine activities theory independently explain school-based victimization, and/or is applying them all in a multi-theoretical model a better fit for the data?

From this research question, several hypotheses were developed. These include:

H1: Perceptions of social disorganization at the individual level will significantly predict higher risk of and extent of school-based victimization.

H2: Low self-control will significantly predict higher risk of and extent of school-based victimization.

H3: Increased target suitability and proximity to motivated offenders, and decreased capable guardianship will significantly predict higher risk of and extent of school-based victimization.

H4: A multi-theoretical approach will be the best approach to understanding school-based victimization, as indicated by model fit statistics.

Dependent Variable

This study examined school-based victimization as the dependent variable and operationalized the outcome in three ways in order to assess potential differences in these measurement strategies. First (*Frequency*) was a measure of how many times respondents experienced any of the following kinds of victimization: (1) been attacked or threatened on your way to or from school; (2) had your things stolen from you at school; (3) been attacked or threatened at school; (4) had mean rumors or lies spread about you at school; (5) had sexual jokes, comments, or gestures made to you at school; and (6) been made fun of at school because of your looks or the way you talk (Cronbach's α : .72). Possible responses included: (0) zero times; (1) one time; (2) 2-5 times; (3) 6-10 times, and (4) more than ten times. The items were summed, resulting in a range of 0-24, with a higher score indicating that the respondent had more victimization experiences. It is important to note that many of the items included in this measure are considered to be forms of bullying victimization. Given the methodological challenges with properly measuring bullying victimization (i.e., power imbalance), this dissertation took the

approach of using a more general measure of school-based victimization as the dependent variable, with the understanding that it also likely captures individuals who are victims of bullying.

The second dependent variable for the study (*Prevalence*) was a measure of whether or not respondents had experienced any form of victimization. To construct this measure, the above six items were dichotomized and summed, resulting in a range of 0-6 (reflecting the six possible forms of victimization). This measure was then also dichotomized, with 0 representing that the respondent had not experienced any form of victimization and 1 representing the respondent had experienced at least one form of victimization. The third independent variable for the study (*Variety*) was a measure of how many different kinds of victimization respondents experienced. This variable was constructed by simply summing the six dichotomized measures used to construct the Prevalence measure, resulting in a range of 0-6.

Independent Variables

Social Disorganization

According to Bursik and Grasmick (1993), social disorganization is the inability of a neighborhood or community to regulate the behavior of its residents (p. x). The systemic model of social disorganization they advocate suggests that social disorganization is caused by structural precursors of disorganization, specifically, concentrated disadvantage (i.e., socioeconomic composition), residential instability, and racial/ethnic heterogeneity (p. 39). These factors impact the efficacy of the private, parochial, and public sources of social control, resulting in the inability to informally and formally control the behavior of residents. Social disorganization is hardly a new theory in the criminological literature; the work of Shaw and McKay, in which Bursik and Grasmick ground their work, dates back to the early 1900s. As

such, there is no dearth of research testing the theory, but much of this research fails to test the full theory (Bursik & Grasmick, 1993, p. 40). That is, much of the research examining social disorganization theory measures only the structural indicators that are theorized to cause social disorganization (i.e., concentrated disadvantage, residential instability, racial/ethnic heterogeneity). This study will include both measures of the structural precursors of social disorganization (measured at the census tract level) and the resulting neighborhood problems and sense of collective efficacy (measured at the individual level), which may stem from the theorized inability of the community to regulate resident behavior.

The structural precursors of social disorganization were measured using census data for the census tract in which each respondent lived. In line with previous studies using a social disorganization perspective (e.g., Morgan & Jasinski, 2017; Zimmerman & Messner, 2011), three primary constructs from the theory were included in this study: concentrated disadvantage, residential stability, and racial/ethnic heterogeneity. Concentrated disadvantage included the following measures: 1) the percent of residents receiving public welfare assistance, 2) the percent of residents living below the poverty line, 3) the percent of residents unemployed, 4) percent of female-headed households with children, 5) the percent of the population that is nonwhite, and 6) the median household income (Zimmerman & Messner, 2011). A factor analysis with varimax rotation was run on these measures to verify their validity as a scale of concentrated disadvantage. Each measure loaded onto a single factor, indicating that this is a scale with high reliability. A Cronbach's alpha was also assessed and was found to be 0.91. Residential stability was measured using the percent of the population living in the same home as 5 years earlier (Zimmerman & Messner, 2011). Finally, racial/ethnic heterogeneity was measured by the

percent of the population that is foreign born (Zimmerman & Messner, 2011), though this may capture immigrant concentration rather than ethnic heterogeneity.

As mentioned previously, social disorganization theory argues that these structural indicators impact a community's ability to regulate the behavior of its residents (Bursik & Grasmick, 1993). Thus, to fully measure social disorganization theory, it is necessary to measure this aspect as well. This study has done so by measuring respondents' individual perceptions of the extent to which their community experienced various problems, and their perceived sense of collective efficacy. Individual perceptions of community problems was measured using a 9-item mean scale, capturing the following potential problems in the respondent's community: 1) run-down buildings, 2) loitering, 3) graffiti, 4) people on the street begging for money, 5) not enough places for young people to go, 6) buildings/personal belongings being broken or torn up, 7) hearing gunshots, 8) not having enough street lighting, and 9) cars traveling too fast (Cronbach's α : 0.89). Responses for each measure included: 1= not a problem, 2= somewhat of a problem, and 3= a bigger problem. Each item was coded such that a higher score indicates the issue was considered a bigger problem by respondents.

Collective efficacy was measured using a mean scale that asked respondents to what extent they agreed or disagreed with the following ten statements: 1) there's not much I can do to change our community; 2) teenagers are usually viewed as the problem, not part of the solution; 3) it is my responsibility to do something about the problems in our community; 4) my involvement in the community improves others' lives; 5) teenagers can make a difference in improving their community; 6) I often think about how my actions affect other people; 7) I work well with adults; 8) adults never listen to young people; 9) adults in my neighborhood encourage young people to get involved in community activities; and 10) young people take an active role

in my community (Cronbach's α : 0.74). Responses ranged from 1 (strongly disagree) to 5 (strongly agree) and were coded such that higher values represent a greater feeling of collective efficacy.

Routine Activities – Target Suitability

Routine activities theory argues that individuals who are considered to be suitable targets are more likely to experience victimization than those not deemed so. The first measure of target suitability in this study was self-control. Other scholars have explored self-control as a measure of target suitability (e.g., Holtfreter, Reisig, & Pratt, 2008; McNeely, 2015; Pratt, Turanovic, Fox, & Wright, 2014; Stewart, Elifson, & Sterk, 2004; Turanovic & Pratt, 2014) with success. Individuals with low self-control are less likely to engage in self-protective behaviors and are more likely to engage in risky behaviors, making them potentially more desirable/suitable targets than other individuals – see Chapter 2 for a full discussion of this research.

Self-control in this study was measured using a 16-item mean scale (Cronbach's α : .854), that taps four dimensions of this complex construct (impulsivity, risk-seeking, short-temperedness, and self-centeredness) (Grasmick et al., 1993). The scale included the following items: 1) I often act on the spur of the moment without stopping to think; 2) I don't devote much thought and effort to preparing for the future; 3) I often do whatever brings me pleasure here and now, even at the cost of some distant goal; 4) I'm more concerned with what happens to me in the short run than in the long run; 5) I like to test myself every now and then by doing something a little risky; 6) sometimes I will take a risk just for the fun of it; 7) I sometimes find it exciting to do things for which I might get in trouble; 8) excitement and adventure are more important to me than security; 9) I lose my temper pretty easily; 10) often, when I'm angry at people I feel more like hurting them than talking to them about why I am angry; 11) when I'm really angry,

people better stay away from me; 12) when I have a serious disagreement with someone, it's usually hard for me to talk calmly about it without getting upset; 13) I try to look out for myself first, even if it means making things difficult for other people; 14) I'm not very sympathetic to other people when they are having problems; 15) if things I do upset people, it's their problem, not mine; and 16) I will try to get the things I want, even when I know it's causing problems for other people. Responses for each of these items ranged from 1 (strongly disagree) to 5 (strongly agree), and all were coded such that higher scores indicated lower levels of self-control.

Participation in delinquent activities has also been shown to be an important aspect of target suitability (Schreck et al., 2004). Much like low self-control, participation in delinquency not only puts individuals in greater contact with motivated offenders but increases the likelihood that those offenders will actually victimize them (Pratt, Turanovic, Fox, & Wright, 2014; Schreck et al., 2004; Turanovic & Pratt, 2014). Indeed, the overlap between offending and victimization is well established (Jennings et al., 2012). Individual participation in delinquency was therefore included as a second measure of target suitability. The data used in this study included a 15-item delinquency scale (Cronbach's α : 0.86), covering violent and nonviolent behaviors. These include: 1) skipping class; 2) lying about your age to get into a place or buy something; 3) avoiding paying for things; 4) purposely damaging/destroying property; 5) bullying others; 6) carrying weapons for protection; 7) spraying graffiti; 8) stealing/trying to steal something worth less than \$50; 9) stealing/trying to steal something worth more than \$50; 10) going into a building to steal something; 11) hitting someone; 12) attacking someone with a weapon; 13) using a weapon/force to get money/things from people; 14) being involved in gang fights; and 15) selling marijuana/other illegal drugs. Possible responses included: 0=0 times, 1=1

time, 2=2-5 times, 3=6-10 times, and 4=more than 10 times, and a mean scale was created for this measure.

Routine Activities – Proximity

According to the routine activities theory perspective, victimization is more likely to occur when one is in close proximity to motivated offenders in the absence of capable guardianship. Proximity has been measured by indicators of crime and disorder in the environment (Lai, Ren, & Greenleaf, 2016, p. 1015). This study used a similar approach in measuring proximity to motivated offenders, using the respondents' perceived risk of victimization in their communities and at school as an indicator of proximity to motivated offenders. Though the field has found some disconnect between perceived and actual risk of victimization (DuBow, McCabe, & Kaplan, 1979), individuals who feel they are likely to be victimized in their community or their school may be in greater proximity to potential motivated offenders than those who feel a lower risk of victimization (Wilcox Rountree & Land, 1996). Some research has shown that individuals who have experienced victimization in the past have a higher level of perceived risk than those who have not (Abbott & McGrath, 2017; Mesch, 2000). Perceived risk of victimization was measured through a mean scale consisting of how likely the respondents felt they were to experience the following items (Cronbach's α : 0.90): 1) having someone break into your house while you are there; 2) having someone break into your house while you are away; 3) having your property damaged by someone; 4) being robbed or mugged; 5) being attacked by someone with a weapon; 6) being attacked or threatened on your way to or from school; 7) having your things stolen from you at school; and 8) being attacked or threatened at school. This scale is based on work by Ferraro's Fear of Crime in America survey (1995), with minor adjustments made based on the age of the sample as well as time and space constraints in

the survey instrument (Melde, 2009). Responses for each item ranged from 1 (not at all likely) to 5 (very likely) and were coded such that higher values indicate greater perceived risk, and therefore greater proximity to motivated offenders.

Research shows that individuals with delinquent peers are at greater risk of being victimized than those with more prosocial peers (Schreck & Fisher, 2004; Schreck et al., 2004). Peer delinquency was therefore included as a measure of proximity to motivated offenders, and was assessed with a 15-item mean scale, asking respondents to report how often their peer group: 1) threatens people, 2) fights, 3) steals things, 4) engages in extortion, 5) robs others, 6) steals cars, 7) sells illegal drugs, 8) carries illegal weapons, 9) damages/destroys property, 10) beats up others, 11) writes graffiti, 12) uses drugs, 13) uses alcohol, 14) breaks and enters, or 15) engages in other illegal offenses. A Likert scale comprised the potential responses for these items (1=not applicable, 2= never, 3=rarely, 4=sometimes, 5=often), and the scale took the mean of these items to indicate the overall average of delinquency within the respondent's peer group (Cronbach's α : 0.97).

Routine Activities – Guardianship

Although originally conceptualized as security measures, capable guardians have been defined as “people whose presence, proximity and absence make it harder or easier to carry out criminal acts” (Hollis et al., 2013, p. 67). When guardians are present and capable, the opportunity for victimization should decrease, even among high risk youth (i.e., suitable targets) (Cohen & Felson, 1979). However, just as victims and offenders must converge in time and space for victimization to occur, victims, offenders, and guardians must converge in time and space for victimization to be prevented. Put another way, the absence of guardianship represents

an opportunity for victimization to occur. Guardianship in this study was measured in three ways.

Unstructured socializing takes youth away from the protective supervision of parents and other adults. Research has demonstrated that unstructured socializing increases youth's risk of victimization, even if they are with prosocial peers (Maimon & Browning, 2010). Unstructured socializing was therefore included as the first measure of guardianship in this study. This was a single question, asking respondents if they ever spend time hanging around with their current friends not doing anything in particular where no adults are present. The response was a simple binary, where 0 represented no and 1 represented yes.

Second, a mean scale of school safety was included (Cronbach's $\alpha = 0.67$), which consisted of the following five items: 1) students here usually get yelled at when they do something wrong; 2) I feel like nothing can hurt me when I am at school; 3) A lot of time, I feel like I have to "watch my back" when I am at school; 4) I sometimes cannot concentrate at school because I just don't feel safe; and 5) At this school, you never know when someone is going to threaten you. Responses included: 1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; and 5=strongly agree. School safety was recoded such that higher values indicated a greater sense of school safety.

Finally, a mean scale of perceived parental monitoring was used. This was a 4-item mean scale (Cronbach's $\alpha: 0.74$), which included the following items: 1) when I go someplace, I leave a note for my parents or call them to tell them where I am; 2) my parents know where I am when I am not at home; 3) I know how to get in touch with my parents if they are not at home; and 4) my parents know who I am with if I am not at home. Responses for these questions ranged from

1 (strongly disagree) to 5 (strongly agree), with higher scores indicating greater perceived parental monitoring.

Control Variables

Basic demographic factors were controlled for, including age, race, and gender. Age is a factor that is particularly relevant for bullying victimization. In this data, age is a ratio-level variable (ranging from 9 years old to 17 years old). Race was measured with a series of dummy variables, with categories including White (the reference category), Black, Hispanic, and all other races. Finally, gender was included as a binary measure with 0 representing female and 1 representing male.

Analytic Strategy

In addition to basic descriptive analyses (see Table 1 in Appendix A for descriptive statistics) and bivariate analysis (Table 2 in Appendix A), several multi-variate analytic strategies were required to address the research questions examined in this study. A total of five models were run for each dependent variable, and each of these was run cross-sectionally and longitudinally. As mentioned above, the study included measures of social disorganization captured at both the individual level and the census tract level. Therefore, multi-level modeling was necessary. According to Luke (2004), there are three primary reasons to justify using this analytic strategy including empirical reasons (i.e., the data itself suggests higher level predictors substantively explain variation in the dependent variable), statistical reasons (i.e., the nested nature of the data is likely to violate basic assumptions of linear regression), or theoretical reasons (i.e., using a theoretical framework or posing hypotheses that necessarily imply multiple levels of predictors). All three of these reasons are implicated in this study.

Multi-level modeling is also desirable due to the longitudinal nature of the data. While repeated measures ANOVAs may be used to assess longitudinal data, there are some issues with this approach. Most notably, it has been observed by others that longitudinal data is likely to violate the assumption of normally distributed, independent errors, due to the fact that responses are nested within individuals (Luke, 2004; Quené & van den Bergh, 2004). Quené and van den Bergh (2004) demonstrated multi-level modeling has two major advantages over repeated measures ANOVA, including having more power in addition to being better at accounting for the correlation of errors associated with longitudinal data (p. 118), suggesting it is a more desirable analytic technique for such data.

The longitudinal nature of the data necessitates a three-level model: time varying individual-level responses (level one) nested within individuals (level two), who are nested within census tracts (level three). Given the nature of the dependent variables, assumptions of OLS are violated in the multi-level models. Therefore, multi-level binary logistic regression analyses were run for the prevalence measure models of school-based victimization, while multi-level negative binomial regression analyses were run for the variety and frequency measure models. To assess each model longitudinally, the *F.variable* was used to lead the dependent variable, resulting in a lagged model with time T variables predicting a T+1 outcome (these models will be referred to as lagged or longitudinal models). For each lagged model, victimization in earlier waves was controlled for.

A total of five multi-level models were run for each dependent variable under consideration. Additionally, as mentioned above, each model was run both cross-sectionally and using a lead dependent variable (i.e., a longitudinal model). Model 1 was a baseline multi-level model containing only demographic factors (i.e. gender, age, and race) and structural precursors

to social disorganization measured at the census tract level. All other models contained theoretical elements, while controlling for those demographic factors and census tract level factors (i.e., concentrated disadvantage, population mobility, and population heterogeneity). Model 2 looked only at social disorganization theory (i.e., perceived disorder and perceived collective efficacy). Model 3 examined the role of self-control alone. Model 4 examined routine activities. Finally, Model 5 was the study's full model, and included all theoretical components. Each model was run twice: first cross-sectionally, and then using the Stata command, "F.variable." Finally, to correct for multiple testing, a Bonferroni correction was assessed, resulting in the establishment of a .01 p-value to determine statistical significance (5 models = .05/5).

For the victimization prevalence dependent variable, the Stata command *melogit* was used, as this variable takes the form of a binary outcome, requiring the use of logistic regression analysis. Specifically, the command, "*melogit [dependent variable] [independent variables] || [census tract ID]: || [respondent ID]:*" was used for cross-sectional models, while "*melogit [F.dependent variable] [independent variables] || [census tract ID]: || [respondent ID]:*" was used for the longitudinal models. Both the victimization frequency and variety measures took the form of over-dispersed count data. Therefore, multi-level negative binomial regression analyses were required – the Stata command *menbreg* was used for models examining these two outcomes. Specifically, the command, "*menbreg [dependent variable] [independent variables] || [census tract ID]: || [respondent ID]:*" was used for the cross-sectional models, while "*menbreg [F.dependent variable] [independent variables] || [census tract ID]: || [respondent ID]:*" was used for the longitudinal models.

To assess which model was the best fit for the dependent variable being examined, the Akaike information criterion (AIC) was applied to each model. One could also apply the Bayesian information criterion (BIC) to assess model fit. Both criteria are measures of model fit, and are considered penalized model selection criteria (Kuha, 2004). The number of parameters examined within a model is considered a proxy for the complexity of the model, and each additional parameter penalizes the model criteria (Kuha, 2004). The BIC applies a steeper penalty for additional model parameters in models with large sample sizes, which may reduce the reliability of this measure. Due to the size of the sample used in this study, only the AIC was considered for the models. However, the AIC is not a particularly sensitive test – this issue will be discussed more in the Discussion and Limitations sections.

CHAPTER 4: FINDINGS

The purpose of this dissertation was to propose and test an elaboration of social disorganization, self-control, and routine activities theories. Specifically, the primary research question of the dissertation was: can social disorganization theory, low self-control, and routine activities theory independently explain school-based victimization, and/or is applying them all in a multi-theoretical model a better fit for the data? To assess this question, several analyses were run, using the analytic software, Stata. In addition to basic descriptive statistics and correlation analyses, several multi-level, multivariate regression analyses were run on several operationalizations of the primary dependent variable, school-based victimization.

Multi-level binary logistic regression analyses were run on 5 theoretical models examining school-based victimization prevalence, both cross-sectionally and longitudinally. To assess school-based victimization frequency and variety (both over-dispersed count measures), multi-level negative binomial regression analyses were run, both cross-sectionally and longitudinally. Finally, to help make an assessment regarding whether a multi-theoretical approach or one of the individual theories included in the study was the best approach to understanding school-based victimization, Akaike Information Criterion (AIC) values were assessed for each model. The remainder of this chapter reports the results of these analyses. All corresponding tables for the below analyses can be found in Appendix A.

Univariate Analyses

Descriptive statistics for each variable included in this study can be found in Table 1 in Appendix A. A few basic aspects of the sample merit discussion. Specifically, just over 70% of respondents reported experiencing school-based victimization at least once. On average, respondents reported 1.83 forms of victimization. The mean of school-based victimization

frequency was 3.67 (within a range of 0 through 24). This suggests a clear majority of youth in the sample reported being victimized at school, though most did not experience victimization to a great extent during the data collection period.

Bivariate Analyses

At the bivariate level (a correlation matrix is found in Table 2), several significant correlations emerged. The three measures of school-based victimization (prevalence, frequency, and variety) were all highly correlated, and all three measures were also highly and negatively correlated with individual perceptions of school safety and positively correlated with individual perceptions of risk of victimization. Additionally, individual participation in delinquency, low self-control, and individual perceptions of disorder were all highly and positively associated with both victimization frequency and victimization variety.

Several correlations between independent variables were also notable. Individual participation in delinquency was highly and positively correlated with both low self-control and delinquent peers and was highly negatively correlated with individual perceptions of collective efficacy. Low self-control was also highly negatively correlated with collective efficacy, as well as with parental monitoring. Perceptions of disorder and perceptions of victimization risk were highly positively correlated. Concentrated disadvantage at the census tract level was highly negatively correlated with identifying as White, while there was a positive correlation between the percent of the population that was born outside of the United States and concentrated disadvantage.

Multivariate Analyses

Victimization Prevalence - Unlagged

Baseline Model (Model 1) – Each model examining victimization prevalence used a mixed-effects logistic regression model (Stata command *melogit*). The baseline model examined the effect of demographic characteristics and precursors of social disorganization (i.e. concentrated disadvantage, population mobility, and heterogeneity) measured at the census tract level. The results of the baseline model (Table 3) showed that males were significantly less likely to report victimization than females.

Social Disorganization (Model 2) – Model 2 regressed only social disorganization theory factors on victimization, and generally showed support for this theory. A one-unit increase in perceived community disorder increased the likelihood that a young person will experience victimization by more than two times. A one-unit increase in an individual's perception of their collective efficacy within their community decreased the likelihood of victimization by approximately one third (see Table 4 for full results). With regard to control variables for the model, males in the sample were approximately 40% less likely to experience victimization than females.

Self-Control (Model 3) – Model 3 regressed self-control on victimization while controlling for demographic factors and census tract-level precursors of social disorganization. In line with prior research (Pratt, Turanovic, Fox, & Wright, 2014; Schreck, 1999), the results showed that low self-control did increase one's risk of experiencing victimization. A one-unit increase in low self-control increased the odds of being victimized at school by 86%. As before, males were significantly less likely to experience victimization than females. No census tract-level measures reached significance (see Table 5 for full results).

Routine Activities (Model 4) – Model 4 (Table 6) regressed routine activities theory on victimization. When assessed with other routine activities, low self-control was no longer a significant predictor of school-based victimization, indicating mixed results for the role of target suitability, as it was operationalized here, on victimization. Also mixed were the results for indicators of proximity to motivated offenders. Although individual perceptions of risk were associated with an increased risk of school-based victimization, associating with delinquent peers was not. Finally, all indicators of capable guardianship were significantly associated with school-based victimization. However, the relationship between parental monitoring and school-based victimization was in the opposite direction that was expected.

Full Model (Model 5) – The final model included all three theories assessed in the study, while controlling for precursors of social disorganization measured at the census tract level. The results for routine activities were largely unchanged when accounting for individual-level measures of social disorganization theory (see Table 7 for details). However, neither of the individual-level measures of social disorganization theory (perceived community disorder and perceived collective efficacy) significantly predicted experiencing victimization at school. Finally, as before, boys were significantly less likely to be victimized at school than girls.

Model Fit – Examining the AIC value for each of the nine models associated with victimization prevalence suggested that Model 4 was the best model for this data to predict victimization prevalence, with an AIC value of 4367.978. This suggests that routine activities theory better accounted for whether one experiences victimization at school than the multi-theoretical when accounting for census tract level indicators of social disorganization. Further, the only component of routine activities to fully reach significance in this model was the capable

guardianship component. Both target suitability and proximity to motivated offenders were only partially supported.

Victimization Prevalence – Lagged

Baseline Model (Model 1) – The baseline lagged model (Table 8), as with the unlagged model, examined the effect of demographic factors, while controlling for census level precursors of social disorganization. When examining a lagged prevalence measure, the only variable that reached significance was gender – males were significantly less likely to report school-based victimization than females. There were no significant effects, however, for race, age, or the structural antecedents of social disorganization.

Social Disorganization (Model 2) – Model 2 regressed social disorganization on a lagged measure of school-based victimization, while controlling for previous victimization (full results can be seen in Table 9). Once accounting for prior victimization, neither measure of social disorganization at the individual level was significantly associated with victimization. Similarly, no census tract-level precursors of social disorganization were significantly associated with school-based victimization. When accounting for prior victimization, males were still significantly less likely to experience school-based victimization than females in the sample. Prior school-based victimization was far and away the strongest predictor of subsequent victimization at school, increasing the odds of school-based victimization by over five times.

Self-Control (Model 3) – Model 3 (Table 10) regressed self-control on school-based victimization, while accounting for prior victimization. In this model, low self-control was not significantly associated with the likelihood of being victimized at school in this sample. As with Model 2, prior victimization was the strongest predictor of whether respondents will experience

subsequent victimization at school (OR = 5.23). Additionally, males were approximately 30% less likely to be victimized at school than females.

Routine Activities (Model 4) – Model 4 (Table 11) regressed routine activities on school-based victimization while controlling for prior victimization. Self-control, perceived risk of victimization, and delinquent peers were not significantly associated with school-based victimization when accounting for prior victimization. Delinquency, however, increased the odds of reporting school-based victimization by approximately 30%. Capable guardianship factors mostly remained significantly associated with school-based victimization. Although unstructured socialization was significantly associated with school-based victimization, it becomes non-significant once accounting for the Bonferroni correction. Perceptions of school safety, however, reduced the odds of reporting school-based victimization by just over 30% while parental monitoring increased the odds of reporting school-based victimization by just over 40%. Males were just over 25% less likely to report school-based victimization than females in the sample. When accounting for the full routine activities theory perspective, prior victimization increased the odds of reporting school-based victimization by 4.3 times.

Full Model (Model 5) – The final model regressed all theoretical elements on school-based victimization, while controlling for prior victimization and census tract level precursors of social disorganization. Individual participation in delinquency became non-significant once individual level measures of social disorganization were included in the model (after the Bonferroni correction), resulting in only perceptions of school safety and parental monitoring being significantly associated with school-based victimization. Neither individual perceptions of community disorder nor perceived collective efficacy were significantly associated with school-based victimization. Males were approximately 25% less likely to report school-based

victimization than females in the sample. Prior victimization also increased the odds of reporting school-based victimization by 4.3 times. Full results can be seen in Table 12.

Model Fit – In assessing the AIC of each model, the best model fit was for Model 4 which included the full routine activities theory model controlling for prior victimization and social disorganization at the census tract-level. As stated above, the most significant factors in this model were measures of capable guardianship. This suggests that routine activities theory better accounted for whether respondents in the sample reported school-based victimization when measured longitudinally, and the driving factor of the theory was capable guardianship.

Victimization Frequency - Unlagged

Baseline Model (Model 1) – Each model examining victimization frequency as a dependent variable used a mixed-effects negative binomial regression analysis (Stata command: menbreg). Since this variable takes the form of a count measure and is over-dispersed, the possibility of using a Poisson regression was eliminated. As with the victimization prevalence models, Model 1 (full results in Table 13) examined the effects of demographic factors while controlling for precursors of social disorganization measured at the census tract level. After completing the Bonferroni correction, the results of the baseline model showed no demographic factors or structural antecedents of social disorganization were significantly associated with school-based victimization.

Social Disorganization (Model 2) – Model 2 (Table 14) regressed social disorganization on school-based victimization. The results showed that individual perceptions of disorder were significantly and positively related to increased victimization among youth in the sample, while perceptions of collective efficacy were significantly associated with decreased victimization.

Self-Control (Model 3) – Low self-control significantly predicted increased victimization among youth in this sample, with a one-unit increase in low self-control corresponding to approximately a .30 increase in victimization. Additionally, females were victimized to a significantly greater degree than males in this sample. Full results can be found in Table 15.

Routine Activities (Model 4) – Model 4 (Table 16) regressed routine activities on school-based victimization frequency. With regard to target suitability the results were mixed; self-control became nonsignificant once accounting for other routine activities factors, while delinquency was significantly associated with increased school-based victimization, with a one-unit increase associated with a .45 increase in victimization. Proximity to motivated offenders was also mixed, as a one-unit increase in individual risk perceptions was associated with a .20 increase in school-based victimization. Individuals maintaining delinquent peer associations was non-significant. After accounting for the Bonferroni correction, the results regarding capable guardianship were also mixed. Unstructured socializing was associated with a .09 increase in school-based victimization, while a one-unit increase in individual perceptions of school safety was associated with a .32 decrease in school-based victimization. However, parental monitoring was no longer significantly associated with school-based victimization. Finally, males reported significantly less victimization at school than their female counterparts.

Full Model (Model 5) – Model 5 (Table 17) regressed routine activities (incorporating self-control as an indicator of target suitability) and social disorganization on school-based victimization frequency. With regard to routine activities theory, the results were much the same as they were in Model 4, the routine activities theory-only model. Findings for social disorganization measures showed mixed results. A one-unit increase in individual perceptions of community disorder was associated with a .17 increase in school-based victimization. Individual

perceptions of collective efficacy were not significantly associated with school-based victimization. Finally, males experienced significantly less victimization than females.

Model Fit – AIC values are reported in the tables of each model. The lowest AIC value for all models examining school-based victimization frequency was Model 5, the full model incorporating routine activities (including low self-control as a measure of target suitability) and social disorganization. This suggests that accounting for all three factors (low self-control, routine activities, and social disorganization) was the best approach to understanding the degree to which youth experience victimization at school.

Victimization Frequency - Lagged

Baseline Model (Model 1) – Model 1 (Table 18), as before, regressed demographic characteristics on school-based victimization while controlling for structural antecedents of social disorganization measured at the census tract level. In the lagged baseline frequency model, males reported significantly less victimization than females. Additionally, a one-unit increase in age was significantly associated with a .08 decrease in school-based victimization. Race was not significantly associated with school-based victimization, nor were any of the census tract level measures.

Social Disorganization (Model 2) – Model 2 regressed social disorganization on the degree to which respondents experience school-based victimization, while controlling for prior victimization and social disorganization at the census tract-level (full results can be found in Table 19). Social disorganization at the individual level, measured by perceived community disorder and perceived collective efficacy, was not significantly associated with the degree to which youth in the sample reported school-based victimization. After the Bonferroni correction,

the only significant factor in Model 2 was prior victimization, which was associated with a .73 increase in subsequent victimization at school.

Self-Control (Model 3) – Model 3 (Table 20) regressed self-control on school-based victimization while controlling for prior victimization and precursors to social disorganization measured at the census tract-level. In this model, low self-control was not significantly associated with school-based victimization. As with Model 2, after the Bonferroni correction, only prior victimization was significantly associated with school-based victimization ($\beta = .73$).

Routine Activities (Model 4) – Model 4 regressed routine activities theory measures on school-based victimization, while controlling for prior victimization and precursors to social disorganization measured at the census tract-level. In this model, target suitability and proximity to motivated offenders were non-significantly associated with school-based victimization. Capable guardianship was mixed, with both unstructured socialization and perceptions of school safety being associated with school-based victimization, and parental monitoring being non-significant once accounting for the Bonferroni correction. Finally, a one-unit increase in prior victimization at school was associated with a .69 increase in subsequent school-based victimization. Full results for this model can be found in Table 21.

Full Model (Model 5) – Model 5 (Table 22) regressed the full model on school-based victimization, while controlling for prior victimization at school and census tract-level precursors of social disorganization. The results of this model suggest that social disorganization at the individual level was not significantly associated with school-based victimization. Additionally, target suitability and proximity to motivated offenders remained non-significant factors in school-based victimization. Capable guardianship remained mixed. Unstructured socialization was significantly associated with a .11 increase in school-based victimization, while a one-unit

increase in perceptions of school safety was associated with a .12 decrease in school-based victimization. Finally, a one-unit increase in prior victimization was associated with a .69 increase in school-based victimization.

Model Fit – Similar to the victimization prevalence models, Model 4 produced the smallest AIC of all the models assessing the extent to which youth experienced school-based victimization, measured longitudinally. This model regressed only routine activities theory model on school-based victimization, while controlling for prior victimization and precursors to social disorganization measured at the census tract-level. Unlike the cross-sectional models assessing school-based victimization frequency, this suggests that routine activities theory best accounts for the extent to which youth experience victimization at school, when measured longitudinally.

Victimization Variety - Unlagged

Baseline Model (Model 1) – As with the victimization frequency measures, all models examining school-based victimization variety (i.e., the number of different kinds of victimization experienced by victims) used a mixed-effects negative binomial regression analysis (Stata command: menbreg). The baseline model regressed demographic characteristics on school-based victimization while controlling for precursors of social disorganization measured at the census tract level. No demographic factors were significantly associated with the number of kinds of victimization experienced at school. Likewise, none of the structural antecedent to social disorganization were significantly associated with school-based victimization.

Social Disorganization (Model 2) – Model 2 (Table 23) regressed individual level measures of social disorganization on the number of kinds of school-based victimization experienced by youth in the sample, while controlling for census tract level antecedents of social

disorganization. Both individual-level measures of social disorganization were significantly associated with school-based victimization. A one-unit increase in individual perceptions of community disorder was associated with a .37 increase in the number of kinds of victimization youth in the sample experience. A one-unit increase in perceived collective efficacy was associated with a .12 decrease in the types of victimization experienced.

Self-Control (Model 3) – Model 3 (Table 24) regressed low self-control on school-based victimization. The results showed that a one-unit increase in low self-control was significantly associated with a .24 increase in the different kinds of victimization experienced by youth in the sample. Additionally, when accounting for self-control, males reported significantly fewer kinds of school-based victimization than females.

Routine Activities (Model 4) – Model 4 regressed routine activities on the number of kinds of victimized experienced at school (Table 25). As with the other outcomes measured cross-sectionally, target suitability was mixed. While low self-control was a non-significant factor, participation in delinquency significantly predicted experiencing more kinds of victimization ($\beta = .32$). The results for proximity to motivated offenders were also mixed, with individual perceptions of risk positively and significantly associated with the variety of victimization experiences and delinquent peers having a negative and non-significant relationship. Unstructured socialization was significantly associated with a .09 increase in victimization variety, while perceptions of school safety were associated with a .27 decrease in victimization. Finally, males experienced significantly fewer kinds of victimization (-.14).

Full Model (Model 5) – Model 5 (Table 26) was a full model, regressing all theoretical indicators on school-based victimization variety. The results suggested that the routine activities theory measures were largely unchanged by introducing social disorganization theory into the

model. Self-control and delinquent peers remained non-significant factors in the number of kinds of victimization experienced by respondents. A one-unit increase in delinquency was associated with a .32 increase in the number of kinds of victimization experienced. Perceived risk of victimization was associated with a .15 increase in school-based victimization. Unstructured socialization and individual perceptions of school safety remained significantly associated with school-based victimization ($\beta = .10$ and $-.26$, respectively). With regard to social disorganization, individual perceptions of community disorder were associated with a .12 increase in the number of kinds of school-based victimization reported. Perceived collective efficacy was non-significant in this model. Finally, being male was associated with a .14 decrease in the number of kinds of school-based victimization reported.

Model Fit – The lowest AIC for the models assessing the number of kinds of victimization reported by the respondents was for Model 5. This model regressed self-control, routine activities, and social disorganization on school-based victimization. The AIC value for Model 5, relative to the other models, suggests that accounting for all three theories was a better approach to understanding how many kinds of victimization youth experience at school, when measured cross-sectionally.

Victimization Variety - Lagged

Baseline Model (Model 1) – The baseline model examined the effect of demographic characteristics on a lagged dependent variable while controlling for precursors of social disorganization measured at the census tract level. As with the unlagged model, no factors were significant in the baseline model.

Social Disorganization (Model 2) – Model 2 regressed social disorganization at the individual level on the number of kinds of school-based victimization reported by respondents,

while controlling for prior victimization and antecedents of social disorganization measured at the census tract level. The results suggest that social disorganization at the individual-level (measured by individual perceptions of community disorder and perception of collective efficacy) was not significantly associated with school-based victimization (full results can be found in Table 29). As with lagged models for the other dependent variables, prior victimization is a strong predictor of the number of kinds of victimization reported subsequently: a one-unit increase in prior victimization was associated with a .83 increase in the variety of forms of school-based victimization reported.

Self-Control (Model 3) – Model 3 (Table 30) regressed self-control on the variety of school-based victimization experiences reported by respondents, while controlling for prior victimization and precursors to social disorganization measured at the census tract-level. The results indicated that self-control was not significantly associated with school-based victimization. Again, prior victimization was significantly and strongly associated with the number of kinds of victimization experienced subsequently, with a one-unit increase in prior victimization at school associated with a .83 increase in the number of kinds of victimization experienced at school.

Routine Activities (Model 4) – Model 4 regressed routine activities on school-based victimization (full results reported in Table 31). Once accounting for prior victimization, target suitability and proximity to motivated offenders became non-significantly associated with the number of kinds of victimization reported. Capable guardianship, however, was partially supported, with unstructured socialization associated with more kinds of victimization, and individual perceptions of school safety associated with fewer kinds of victimization at school.

Finally, prior victimization was, again, significantly and strongly related to the number of kinds of victimization reported ($\beta = .78$).

Full Model (Model 5) – Model 5 regresses the full model on school-based victimization, while controlling for prior victimization and precursors of social disorganization measured at the census tract level (results found in Table 32). The results showed that social disorganization at the individual level was not significantly associated with the number of kinds of victimization experienced at school. As for routine activities theory, neither target suitability nor proximity to motivated offenders was significantly associated with school-based victimization. Results for capable guardianship were, again, mixed. Unstructured socialization was associated with a .10 increase in school-based victimization variety, while a one-unit increase in perceptions of school safety was associated with a .10 decrease the school-based victimization variety. Finally, a one-unit increase in prior victimization at school was significantly associated with a .77 increase in the number of forms of victimization experienced at school.

Model Fit – When assessing model fit for the lagged school-based victimization variety models, a similar trend emerged as that found in the prevalence and frequency models. The lowest AIC value was that of Model 4, which regressed the routine activities on school-based victimization, suggesting that routine activities theory was the most effective theory for predicting and understanding the number of kinds of victimization youth experience at school.

CHAPTER 5: DISCUSSION, IMPLICATIONS, AND CONCLUSIONS

Discussion

The purpose of this dissertation was to propose and test an extension and elaboration of three major criminological theories: the general theory of crime (low self-control theory) (Gottfredson & Hirschi, 1990), routine activities theory (Cohen & Felson, 1979), and the systemic theory of social disorganization (Bursik & Grasmick, 1993), and to apply this extension to school-based victimization. It has been suggested that, in part due to adherence to underlying assumptions, individual criminological theories struggle to adequately explain criminal behavior (Agnew, 2011; Bernard & Snipes, 1996; Tittle, 1995). Indeed, the theories currently used in the field explain only small amounts of variance in crime, and our ability to explain variance in crime has not improved over time (Agnew, 2011). As such, it has been suggested that the best way to move the field forward is to begin to rethink the underlying assumptions upon which we base theory and move toward an approach that utilizes multiple successful theories (Agnew, 2011).

To that end, several theoretically informed hypotheses were examined in this dissertation. It was hypothesized that when controlling for structural antecedents of social disorganization measured at the census tract level (i.e., concentrated disadvantage, resident mobility, and population heterogeneity), individual-level indicators of social disorganization (i.e., individual perceptions of community disorder and individual perceptions of collective efficacy), target suitability (i.e., low self-control and participation in delinquency), and proximity to motivated offenders (i.e., having delinquent peers and feeling a heightened risk of victimization) would be associated with an increase in the likelihood of being victimized at school, as well as the degree to which one is victimized and the number of kinds of victimization one experienced.

Additionally, it was hypothesized that capable guardianship (i.e., whether or not one engaged in unstructured socialization, individual perceptions of school safety, and individual perceptions of parental monitoring) would be associated with a decrease in school-based victimization. The final hypothesis was that a multi-theoretical approach would be the best way to understand school-based victimization, as assessed by model fit statistics. These hypotheses were tested using a series of multi-level, multivariate regression analyses, and both a cross-sectional and longitudinal version of each model was run.

Although this dissertation did not truly integrate the three theories examined, it did take steps to move the field toward a more robust, comprehensive theoretical understanding of crime by applying multiple theories incorporating assumptions of both determinism and agency, as well as individual factors and contextual/environmental factors. By applying multiple theories to the issue, the dissertation tested the ability of individual factors (such as self-control) contextual factors (such as school environment) and structural factors (i.e., the structural antecedents of social disorganization) to predict school-based victimization both cross-sectionally and longitudinally. The remainder of this chapter will contextualize the findings of this study within the larger field, discuss practical policy implications that can be drawn from the results, and conclude with a discussion of the major contributions made to the field, limitations, and directions for future research.

Social Disorganization

The first hypotheses considered in this dissertation was that, when controlling for precursors of social disorganization measured at the census tract level, perceived social disorganization at the individual level would significantly predict an increased risk of as well as a greater degree of victimization at school. This hypothesis was derived from previous literature

suggesting a significant relationship between social disorganization and school-based victimization/bullying specifically (Foster & Brooks-Gunn, 2013; Gibson, 2012; Holt, Turner, & Exum, 2014; Williams & Guerra, 2011). Before accounting for other theoretical influences (i.e., self-control, routine activities) the cross-sectional results suggest support for this hypothesis. When controlling for census tract level measures of social disorganization antecedents, individual perceptions of community disorder was significantly associated with an increased risk of experiencing school-based victimization. Additionally, community disorder was significantly associated with a greater degree of victimization as well as reporting more kinds of victimization experiences at school. At the same time, individual perceptions of collective efficacy were significantly associated with decreases in these outcomes.

The results regarding social disorganization at the individual level become mixed once accounting for self-control and routine activities. With regard to whether youth experience victimization at school, perceived community disorder was no longer a significant factor when accounting for routine activities (which included self-control). Perceived community disorder was a significant factor associated with the extent to which youth experienced school-based victimization, even when accounting for self-control and routine activities. These findings suggest that community disorder may not be a meaningful factor in whether youth are victimized at school but does seem to be a determinant of the severity of that victimization. Much of the extant victimization research examines overall risk of victimization, rather than victimization frequency or severity (though for exceptions, see Garthe, Gorman-Smith, Gregory, & Schoeny, 2018; Tillyer, Wilcox, & Fissel, 2018; and Tseloni & Pease, 2014). The results of this research suggest there is significance in this operational decision that scholars should weigh in study development.

The impact of perceived collective efficacy was more complicated. Collective efficacy became a non-significant predictor of the odds of experiencing victimization at school, once accounting for self-control and routine activities. One possible explanation may lie in how this construct was measured. Collective efficacy has been defined in the literature as “social cohesion and trust among neighbors, which relates to their willingness to protect one another” (Sampson, Raudenbush, & Earls, 1997; as cited by Fox & Bouffard, 2015, p. 914). The questions used to develop the collective efficacy scale for this dissertation included measures related to how strongly the respondents felt they were an important part of their community (i.e., social cohesion). Few of these items could be considered to reflect a willingness to protect others. It may be that this is an incomplete measure of collective efficacy, and is potentially measuring a different concept, such as social bonds to one’s community.

The results of the longitudinal models are markedly different. When using a lagged version of the dependent variables, individual perceptions of community disorder and collective efficacy were not significantly associated with the risk of victimization at school, the degree to which respondents experienced victimization, or the number of kinds of victimization they reported. Some research examining social disorganization as a predictor of school violence has also failed to find a relationship between the two (Chen, 2008; Clark & Lab, 2000; Watkins, 2008). These researchers suggest that other factors are more important predictors of school-based victimization and other school violence outcomes, such as school climate. The same dynamics may be at play in the data used in this dissertation as well. It is possible that individual perceptions of community context simply are not predictive of school-based victimization.

Self-Control

Based on prior literature examining the relationship between low self-control and victimization more generally (for a review, see Pratt et al., 2014), the second hypothesis tested in this dissertation was that low self-control would be significantly associated with an increased risk of school-based victimization, as well as an increase in the degree to which youth experience victimization and the number of kinds of victimization reported. Relatively few studies of the relationship between self-control and victimization use a longitudinal design with even fewer accounting for prior victimization (Pratt et al., 2014), and to the author's knowledge, no study has yet examined the relationship between low self-control and school-based victimization longitudinally, while accounting for both prior victimization and neighborhood level precursors of social disorganization, as the present study has done.

The results suggest self-control should be further examined as a potentially significant factor in predicting school-based victimization, but that its predictive power may be dependent on context. In the unlagged models, low self-control was significantly associated with school-based victimization until accounting for other routine activities measures. Additionally, in the lagged models which controlled for prior victimization, low self-control was consistently not significantly associated with school-based victimization. These combined findings contribute to the field's understanding of the role of low self-control in victimization.

In their original publication, Gottfredson and Hirschi (1990) argued that low self-control would predict criminal behavior when the opportunity presents itself. If the same is true when applying the theory to victimization, then the results of the unlagged models support this proposition of the original theory. Once guardianship was controlled for, low self-control was no longer associated with school-based victimization. Once the opportunity for victimization is

decreased, in this case, through an increased sense of school safety and a lack of unstructured socialization, the impact of low self-control is no longer an important predictor of victimization.

This is in line with research that finds that the introduction of a mediating factor, such as routine activities/lifestyles, reduces the association between low self-control and victimization (Pratt et al., 2014). The relationship between self-control and opportunity has also been demonstrated in research examining the relative impact of each on bullying perpetration (Moon & Alarid, 2015). The results of the lagged models lend further support to this claim. Once accounting for guardianship and prior victimization, self-control did not predict school-based victimization when measured longitudinally, lending further support to the notion that opportunity is an important factor in whether low self-control will result in victimization.

Routine Activities

With regard to routine activities theory, it was hypothesized that increased target suitability and proximity to motivated offenders would predict a greater risk of, greater degree of, and greater variety of school-based victimization, while increased capable guardianship would be negatively associated with these outcomes. The results of this study suggest that capable guardianship is indeed a significant factor in preventing school-based victimization (though the results were mixed after accounting for a Bonferroni correction). Unstructured socialization and perceptions of school safety were significantly associated with all measures of school-based victimization, when measured cross-sectionally. Additionally, these were the *only* routine activities measures that reached significance in all three dependent variables when measured longitudinally (though it's important to note that participation in delinquency – a measure of target suitability – also reached significance in the lagged models examining the likelihood of experiencing victimization at school longitudinally). These results suggest that,

even accounting for prior victimization, guardianship is a powerful tool in preventing victimization from occurring and decreasing the degree to which it does occur. Specifically, the nature of the school structure and participation in unstructured socializing predicted victimization in the expected directions – the results for parental monitoring were unexpected and will be discussed further below.

Increases in perceptions of school safety were significantly associated with decreased risk of and extent of school-based victimization in all models. In this study, school safety was an index measure which included items assessing how safe respondents felt at school and how likely they thought it was that misbehavior would be punished. The results of the study suggest that fostering a school environment in which students feel safe and feel that misbehavior will not be tolerated can lower risk of and extent of victimization that occurs within schools. Other research has shown much the same (Blosnich & Bossarte, 2011; Gerlinger & Wo, 2016; Perkins, Perkins, & Craig, 2014; Reingle Gonzalez, Jetelina, & Jennings, 2016).

Further, the results show support for the utility of social forms of guardianship. A number of studies have been conducted examining the impact of physical guardianship on school-based victimization (e.g., security cameras, metal detectors, etc.). Much of this research has shown that such efforts have no or little significant effect on school-based victimization (Burrow & Apel, 2008; Gerlinger & Wo, 2016; Kupchick & Farina, 2016; Tanner-Smith, Fisher, Addington, & Gardella, 2018), while some even show that such measures are associated with an increase in feelings of fear and insecurity, at least for some populations of students (Johnson, Bottiani, Waasdorp, & Bradshaw, 2018; Perumean-Chaney & Sutton, 2013; Schreck & Miller, 2003). These results suggest there is utility in exploring social guardianship as a prevention tool against school-based victimization.

It was hypothesized that unstructured socialization would have a positive and significant effect on school-based victimization, based on prior empirical evidence of the relationship between unstructured socialization and victimization more generally (Ahlin & Lobo Antunes, 2017; Dong et al., 2019; Maimon & Browning, 2012). Although this measure may have tapped behavior occurring outside of the school, results of the study support this hypothesis in all models in which it was assessed: respondents who reported engaging in unstructured socialization were more likely to report school-based victimization, and reported experiencing more school-based victimization than their counterparts. Given the above-mentioned relationship between unstructured socialization and victimization more generally, along with evidence that bullying occurs in spaces where adult supervision is not present, (Fite et al., 2013; Perkins, Perkins, & Craig, 2014; Vallaincourt et al., 2010), it is possible that victims are initially targeted during periods of unstructured socialization in school-adjacent settings (e.g., on the way to or from school) and these interactions carry over into the school setting. That is, youth who experience victimization in school, may experience victimization outside of school, and their victimization may have started while engaging in unstructured and unsupervised interactions with peers, potentially in contexts that are related to, but directly a part of, the school setting.

Though after accounting for a Bonferroni correction, parental monitoring was only significantly associated with the overall likelihood of experiencing school-based victimization (measured both cross-sectionally and longitudinally) the results for this variable were unexpected. Based on the original theory (Cohen & Felson, 1979), and extent research examining guardianship (Ahlin & Antunes, 2017; Cho et al., 2017; Garofalo & Clark, 1992; Hayes, 2018; Peguero et al., 2015; Skubak Tillyer, Tillyer, Ventura Miller, & Pangrac, 2011; Teasdale, Daigle, & Gann, 2018; Wickes, Zahnnow, Shaefer, & Sparkes-Carroll, 2017; Wilcox,

Madensen, & Skubak Tillyer, 2007), it was hypothesized that increased parental monitoring would be associated with decreased risk of, and decreased degree of, school-based victimization (though, given the inability of parents to directly monitor their children during school hours, this relationship was expected to be weaker than other measures of guardianship). However, increased parental monitoring was actually associated with an increased risk of being victimized at school.

Though this was unexpected, this result is in line with research on the concept of over-parenting. Some research has shown that over-parenting is associated with negative outcomes for youth (LeMoyne & Buchanan, 2011; Leung & Busiol, 2016; Nelson, Padilla-Walker, & Nielson, 2015; Segrin, Givertz, Swaitkowski, & Montgomery, 2015). The relationship between overparenting and involvement in risky behaviors has also been noted in recent research (Nelson, Padilla-Walker, & Nielson, 2015). Such risky behavior may put youth in greater proximity to motivated offenders, increasing their likelihood of experiencing victimization. Alternatively, some research (McGinley, 2018; Segrin et al., 2012; Segrin, Wozsidlo, Givertz, & Montgomery, 2013) has shown that over-parenting may hinder the development of self-regulation as well as lead to narcissistic tendencies in overparented children, factors that have been discussed as indicators of low self-control by Gottfredson & Hirschi (1990). It is possible that the results of this study are a reflection of the impact over-parenting may have on self-control (i.e., target suitability). Future research would benefit from revisiting the relationship between parenting and self-control, taking into consideration the potential maladaptive influence of over-parenting on the development of self-control in children.

The present dissertation hypothesized that increased target suitability (as measured by low self-control and involvement in delinquency) would increase risk of and degree of school-

based victimization. Routine activities theory (Cohen & Felson, 1979) argues that increases in target suitability should predict an increase in victimization, even when holding proximity to offenders and capable guardianship steady (Ahlin & Antunes, 2017; Cho et al., 2017). While the relationship between self-control and victimization has been discussed above, the other aspect of target suitability merits discussion. When measured cross-sectionally, delinquency was consistently significantly associated with both the overall risk of school-based victimization, as well as the extent and variety of victimization experienced. The results for delinquency are in line with an abundance of research suggesting an overlap between offenders and victims (for a review of this literature, see Jennings, Piquero, & Reingle, 2012), and lend support to this key tenet of routine activities theory. Additionally, these findings expand our understanding how target suitability may influence victimization. Few studies have examined whether delinquent behavior predicts the extent of victimization experienced – most simply dichotomize the outcome, rather than looking at victimization frequency or the number of kinds of victimization experienced (Jennings, Piquero, & Reingle, 2012). These findings, like those of community disorder, suggest that operationalizations of victimization matter and should be a mindful decision on the part of researchers.

Additionally, when measured longitudinally, delinquency is significantly associated with the overall risk of school-based victimization, but not the frequency and variety of victimization experience. Further, the P value is weaker when measured longitudinally, and delinquency becomes nonsignificant longitudinally once accounting for social disorganization at the individual level (after accounting for the Bonferroni correction). While past delinquency may be linked to an overall increased risk of victimization at school in the future, it is possible that prior delinquency is not a salient factor in the frequency and variety of future victimization –

suggesting that the relationship between delinquency and extent of school-based victimization may be better studied cross-sectionally (that is, these two factors are more likely to co-occur in time).

It was expected that increased proximity to motivated offenders (as measured by individual perceptions of risk of victimization and delinquent peers) would be associated with increased risk of and extent of school-based victimization. In the cross-sectional models, this hypothesis was partially supported. An increased sense of being at risk of victimization was associated with a greater risk of being victimized at school as well as being victimized to a greater degree. The lagged models shed doubt on this relationship, however, as neither measure was significantly associated with school-based victimization in any of the models that accounted for prior victimization. It is possible that youth who reported victimization at school in this study have an increased sense of personal risk as a result of their victimization. Indeed, there is prior research suggesting youth who experience victimization have a heightened sense of risk and fear (see, for example, May & Dunaway, 2000; Vidourek, King, & Merianos, 2016). It is likely that examining this relationship using the opposite time-order (i.e., victimization predicting perceived risk) would result in findings similar to those in these studies.

The other measure of proximity to motivated offenders (delinquent peers) was non-significant in this study. This was somewhat surprising, as much of the victimization literature that includes a measure of peer delinquency finds it to be a significant factor (see, for example, DeLisi, Barnes, Beaver, & Gibson, 2009; Schreck & Fisher, 2004; Schreck, Fisher, & Miller 2004). However, it is possible that the role of delinquent peers differs depending on the environment in which victimization occurs. The dependent variables in this study focused exclusively on victimization that occurs at or on the way to and from school. Given the

structured nature of the school day, delinquent peers may be more predictive of victimization outside of school, where there is less structure and consistent supervision of young people. Future research should examine the role of delinquent peers in school-based and community-based victimization, to try to assess if there is a differential predictive effect, based on the environment in which the victimization occurs (and what factors explain any differences found).

Multi-Theoretical Approach

The final hypothesis tested in this dissertation was that using a multi-theoretical approach at the individual level (while accounting for structural level antecedents of social disorganization) to study school-based victimization would prove to be a better approach than examining any one theory individually. A multi-theoretical approach would allow scholars to assess how both individual characteristics and perceived contextual factors are related to victimization. Additionally, a multi-theoretical approach allows us to make connections based on the conceptual overlap between theories. For example, Gottfredson and Hirschi (1990) discuss the importance of opportunity in offending, a concept also critical to routine activities theory. Further, as discussed by scholars such as Agnew (2011), Bernard and Snipes (1996), and Tittle (1995) adopting a unified, multi-theoretically approach, may be the best way to move the field of criminology forward with regard to our causal understanding of criminal behavior.

To help make an assessment about which theoretical approach was the best fit for the data, Akaike Information Criterion (AIC) values were generated for each of the models. Results of the AIC analyses suggested partial support for this hypothesis. As mentioned in Chapter 3, the AIC is not a particularly sensitive test. Results of the AIC values were extremely close for each dependent variable, regardless of whether it was measured cross-sectionally or longitudinally. Given the lack of sensitivity in the test, these results suggest that there is no meaningful

difference in which model is best. The implication is that a multi-theoretical approach is equivocally as good for understanding school-based victimization as any of the included theories (social disorganization, self-control, or routine activities) individually. These findings suggest that, in line with others who advocate taking a multi-theoretical approach to studying victimization (e.g., Agnew, 2011; Stewart, Elifson, & Sterk, 2004; Turanovic & Pratt, 2013; Wilcox, Sullivan, Jones, & Van Gelder, 2014) there is potential utility in a multi-theoretical approach in examining the victimization of young people at school, when a reasonable argument can be made to do so.

Policy and Research Implications

Once accounting for routine activities, individual perceptions of community disorder did not predict the likelihood of youth experiencing school-based victimization, and only predicted the extent to which youth reported victimization in the unlagged models, suggesting community disorder may matter less in preventing school-based victimization than other factors, particularly the level of guardianship available to young people in and outside of school. Findings that individual perceptions of school safety were consistently related with decreased risk of and extent of victimization support the idea that school context matters more than community context and suggests potential policy implications for practitioners. In this study, perceptions of school safety were measured via a multi-item index that included items related to the respondents' perception of the certainty of school discipline as well as their perceived risk of victimization while at school. Creating and maintaining a school environment in which students feel certain that they are safe, and that teachers and other school officials can ably protect them is one step practitioners can take to reduce victimization in their schools.

While the benefits of a positive school climate have been known for some time, it has been suggested that practitioners have had trouble enacting this research in real life (Payne, 2018). A recent National Institute of Justice report (Payne, 2018) attributes this to two main factors: first is a “lack of an agreed-upon definition of school climate” (p. 1), leaving practitioners unsure of what metrics to focus on or what strategies to pursue. Second, “there is also disagreement on how [school climate] can be assessed” (p. 2). Taken together, this suggests the practitioners responsible for improving the climates of their schools are unsure of what exactly this means, how to approach doing so, and how to tell if they have succeeded in this endeavor. As others have argued, continuing to make progress in reducing bullying and other forms of school-based victimization will depend on a clarification of the complex construct of school climate, a focused and consistent operationalization of this construct, and robust scientific evaluation of efforts to improve school climate (Payne, 2018; Wang & Degol, 2016). Future research should strive to aid in this endeavor, and researchers should work closely with practitioners to implement and evaluate evidence-based strategies for improving school climate.

The results of this study showed that, when measured cross-sectionally, self-control was a significant factor in school-based victimization until introducing routine activities into the model, and especially, the study’s measures of capable guardianship. It is important to note that this study included only indicators of social guardianship, and interpretation as it relates to traditional routine activities operationalization should be approached with caution. Even so, these findings suggest that factors such as low self-control or participation in delinquency may be useful in identifying at-risk youth, and that environmental factors can be improved to protect at-risk youth. Indeed, this finding reinforces the need for practitioners to strengthen social guardianship by fostering a safe and supportive school climate, particularly given findings suggesting physical

forms of guardianship may be less effective than social forms of guardianship with regard to school-based victimization (Burrow & Apel, 2008; Gerlinger & Wo, 2016; Kupchick & Farina, 2016; Tanner-Smith, Fisher, Addington, & Gardella, 2018).

These findings also suggest that schools should put forth efforts to improve youth's self-regulation abilities, which may reduce their risk of victimization. Indeed, prior research has found that teachers and schools can be an important source of socialization, and thus the development of self-control, even when accounting for parental socialization (Beaver, Wright, & Maume, 2008; Meldrum, 2008; Turner, Piquero, & Pratt, 2005). In addition to the role that teachers, principals, and other school officials can have on a child's socialization, the utilization of early self-control improvement programs, shown to be effective in a recent meta-analysis (Piquero et al., 2016), are also a promising avenue of self-control development. From a research perspective, these findings suggest need to study the effect of low self-control on school-based victimization in more detail.

Particularly, research examining the relationship between low self-control and risky lifestyles (Cho & Lee, 2018; Schreck, Stewart, & Fisher, 2006; Turanovic & Pratt, 2014) should be expanded to examine school-based victimization specifically. While the self-control/risky behaviors theoretical approach has been shown to be an important predictor of certain forms of victimization (Baron, Forde, & Kay, 2007; Pratt et al., 2014; Turanovic, Resig, & Pratt, 2015; Turanovic & Pratt, 2014), others have raised concern over whether this factor is appropriate for the study of all forms of victimization. In particular, it has been suggested that risk factors other than risky behavior and low self-control may be more salient for bullying victimization, as these factors may not be necessary for victims to be singled out by their peers (Kulig, et al., 2017). Another factor researchers should examine is whether self-control/risky lifestyles is a salient

predictor of victimization in a context of high structure and limited agency, such as the school setting. Given the limited behavioral choices of students in a school setting, it is possible that low self-control and risky behaviors would be less predictive of victimization in this context and a more salient factor in victimization that occurs outside of school.

Unstructured socializing was also found to consistently significantly predict increased victimization at school in this study, suggesting supervision and structure provided by adults should be increased, both outside of school and in school-proximate contexts. Several items included in the victimization measure used in this study included events occurring on the way to or from school. It is possible these external (but still proximate) settings would benefit from improved supervision and structure. This might be accomplished via structured affordable or free after-school programming, or by encouraging young people to become more involved in structured and supervised extra-curricular activities. This, however, may be an imperfect strategy, as some research has suggested participation in certain kinds of extra-curricular activities, such as the arts, may increase risk of bullying victimization (Peguero, 2008; Peguero, Popp, & Koo, 2015; Popp, 2012). Additionally, given the financial and time-related costs of participation in such programs and activities for both youth and parents, this may be an impractical strategy for some families.

The findings regarding parental monitoring were unexpected. It was hypothesized that increase parental monitoring would be associated with a decreased risk of, and extent of, victimization. Instead, after accounting for the Bonferroni correction, an increased perception of being monitored by their parents was significantly associated only with the overall risk of being victimized at school, and this relationship was in the opposite expected direction. That is, increases in parental monitoring were associated with an increased risk of victimization at

school, rather than a decreased risk. As discussed above, there is emerging research to suggest parenting behavior may reach a tipping point, wherein it begins to backfire and cause harmful effects in young people, resulting in increased risky behavior, decreased resilience, and narcissistic tendencies, all of which may increase youths' risk of victimization (LeMoyne & Buchanan, 2011; Leung & Busiol, 2016; Nelson, Padilla-Walker, & Nielson, 2015; Segrin, Givertz, Swaitkowski, & Montgomery, 2015).

It is also possible that the nature of parenting strategies, rather than simply the extent to which young people feel monitored by their parents, results in different outcomes with regard to bullying and other forms of school-based victimization. For example, some research has found a relationship between parenting style and bullying victimization in particular (Georgiou, 2008; Rigby, 2013). These results in the context of the broader extent literature suggest more research is needed to examine exactly how parenting and parental monitoring are associated with victimization is needed – both non-linear relationships and more nuanced measures accounting for parenting style should be pursued in future studies.

Finally, the results of the lagged models suggest that, consistent with extant research (Finkelhor, Ormrod, & Turner, 2007; Lauritsen & Quinet, 1995; Ousey, Wilcox, & Brummel, 2008) prior victimization is a particularly strong predictor of subsequent victimization. School officials should pay particular attention to providing guardianship and support to youth who have already experienced victimization at school, as they are very likely to experience subsequent victimization. Making an increased effort to protect such youth may break cycles of victimization experienced by repeat victims. As discussed above, increased guardianship may be accomplished by improving strategies to understand, develop, and assess positive school climate,

as well as improving supervision and structure in school-proximate contexts, such as transportation to and from school.

Conclusions, Strengths and Limitations, and Directions for Future Research

The purpose of this dissertation was to examine the utility of taking a multi-theoretical approach in our understanding of criminological phenomena, particularly school-based victimization, as others have argued is necessary to move the field forward (Agnew, 2011; Bernard & Snipes, 1996; Tittle, 1995). To that end, the results of the study suggested that, while there may be no advantage to doing so, there is also no detriment to doing so, at least from a statistical point of view. The differences in AIC values between models for each dependent variable were quite small, suggesting that a multi-theoretical approach is just as good as a singular theoretical approach. The results of this dissertation suggest scholars should consider taking a multi-theoretical approach in their research when it makes sense to do so based on their research question, and when a single theoretical approach is not sufficient for answering those research questions. However, as has been noted above, the AIC is not a particularly sensitive test. Future research should attempt to answer this question using more robust measures of model fit.

Additionally, several other limitations must be acknowledged, which raise important questions to be addressed in future research. The key strength of this study is its use of longitudinal, multi-level analyses. This approach allows for sophisticated and robust analyses to be conducted, accounting for the non-independent nature of responses nested within individuals across time and of individuals within census tracts. The study was also able to account for structural-level factors of social disorganization, as well as temporal ordering issues between the

dependent and independent variables. However, there are also limitations associated with this analytic strategy.

Of particular concern were issues related to limitations with the Stata/IC 15.1 software used for the analyses. First, a true null model failed to run for the school-based victimization variety measure. As a result, no true null model was assessed in this study; rather, a base-line model containing demographic factors against which to compare subsequent models was used. Additionally, multiple imputation was used to address missing data in the dataset. While multiple imputation is generally accepted by social science researchers (McKnight, McKnight, Sidani, & Figueredo, 2007, p. 196), caution must be exercised in considering the results of this study, as the estimates are not based on the true data provided by respondents.

This is further exacerbated by limitations to Stata's analytic options. Only a limited number of analyses are compatible with the command in Stata/IC 15.1 to analyze imputed data. Unfortunately, the multi-level logistic regression and multi-level negative binomial regression commands in Stata are not compatible, making it impossible to conduct the analyses on the fully imputed dataset; in order to conduct the analyses, it was necessary to randomly select an imputation on which to conduct analyses, rather than using all 10 imputations. These results should therefore be considered with some caution, and this research should be replicated in software that allows for multi-level logistic and multi-level negative binomial regression analyses to be conducted on multiply imputed data.

The fact that this study was based on secondary data also suggests caution should be applied when interpreting these theoretical findings. The study was reliant on the variables collected by the original researchers (Esbensen, 2009), as well as the conceptual definitions and operationalizations of the constructs the variables measure. Simply put, it is possible that the

variables used to capture elements of routine activities theory and social disorganization theory were imperfect measures. It is also possible that the measures used in this study, may also tap into other theoretical perspectives. For example, the indicators used to measure parental monitoring include items such as “when I go someplace, I leave a note for my parents or call them to tell them where I am” and “My parents know where I am when I am not at home or at school.” While this measure was used as an indicator of capable guardianship in the present study, it can be argued this may also be an indicator of parental attachment/bonding (Hirschi, 1969), potentially making interpretation of this variable somewhat complicated. Future research should strive to replicate this study, using original data and measures that are specifically operationalized to be accurate measures of the constructs examined. Doing so will reduce uncertainty about whether the theories examined are being accurately and adequately measured, and clarify theoretical uncertainty and confounding

Additionally, a purposive sampling strategy was needed for the original research design: the researchers were required to target schools for study inclusion that were implementing the Community Works program. While the sample was representative of the schools from which it was drawn, it was not representative of all youth in the United States at the time (Esbensen, 2009). Instead it is applicable only to those schools adopting the program curriculum. In addition, because a large proportion of the sample was drawn from the Southwest (especially Arizona), there was an over-representation of Hispanic youth in the sample compared to the U.S. population (Esbensen, 2009). This may limit the applicability of the findings of this study, and future research should replicate this study with a more representative sample.

In addition to the future directions researchers should take to address the limitations discussed above, several future directions for research emerged based on the findings of this

study. The role of parental monitoring on victimization merits further and more nuanced research. It is possible that parental behavior may have a more nuanced relationship with the development of self-control than Gottfredson and Hirschi (1990) originally argued. This relationship also merits further investigation. In particular, arguments from psychology and child development research that over-parenting results in lower self-restraint and resilience as well as more risky behaviors and narcissistic tendencies in children should be explored in more detail (LeMoyne & Buchanan, 2011; Leung & Busiol, 2016; Nelson, Padilla-Walker, & Nielson, 2015; Schiffrin et al., 2014; Segrin, Givertz, Swaitkowski, & Montgomery, 2015). Future research should examine the potential of a non-linear relationship between parental monitoring and both self-control and victimization, as it is possible that parental monitoring is protective up to a certain point, and then becomes counter-productive. Additionally, human development and family studies scholars, as well as psychology scholars, suggest that parenting should be developmentally appropriate, and that failure in this regard is likely to result in poorer outcomes for children (Schiffrin et al., 2014). These are claims that should be examined further in the field of criminology as well.

Additionally, the role of unstructured socializing in predicting school-based victimization merits further consideration. While this concept is typically discussed in the context of parental monitoring, the results of this dissertation suggest that a lack of supervision and structure involved in school-proximate locations and contexts (i.e., on the way to and from school) may influence the risk of and extent of victimization experienced by youth. Future scholars should explore whether increasing or improving supervision in these proximal contexts is associated with decreased risk of and extent of victimization in a school context.

Finally, given the differences between the cross-sectional and longitudinal models for each operationalization of the dependent variable of this study, further consideration of time-order with regard to established criminogenic relationships is warranted. Prior research has called into question the utility of months-long gaps between data collection in longitudinal research (e.g., Weerman, Wilcox, & Sullivan, 2018), particularly with factors that are theoretically proposed to be co-occurring or have reciprocal relationships with criminogenic outcomes (e.g., victimization), such as interactions with delinquent peers (Sijtsema & Lindenberg, 2018). The results of this study lend support to these concerns and suggest future research should take seriously the recommendations of these scholars.

APPENDIX

Table 1: Descriptive Statistics

Variable	Min.	Max.	Mean	Std. Dev.
Victimization Prevalence	0	1	0.72	0.45
Victimization Frequency	0	24	3.30	3.67
Victimization Variety	0	6	1.83	1.64
Self-Control	1	5	2.70	0.66
Delinquency	0	4	0.22	0.38
Perceived Risk	1	5	2.15	0.90
Delinquent Peers	1	5	1.36	0.72
Unstructured Socializing	0	1	0.57	0.49
School Safety	1	5	3.27	0.83
Parental Monitoring	1	5	4.05	0.77
Perceived Disorder	1	3	1.79	0.46
Collective Efficacy	1	5	3.23	0.55
Male	0	1	0.46	0.50
Age	9	17	12.66	1.06
White	0	1	0.33	0.47
Black	0	1	0.11	0.31
Hispanic	0	1	0.42	0.49
Other Race	0	1	0.14	0.34
Concentrated Disadvantage	-2.21	3.01	2.24E-16	1.00
Mobility	21.28	97.95	48.51	10.52
Foreign Born	0	48.31	13.84	9.39
Wave	1	3	1.91	0.80

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9
1	1								
2	.56***	1							
3	.70***	.90***	1						
4	.12***	.17***	.16***	1					
5	.14***	.26***	.23***	.47***	1				
6	.19***	.29***	.28***	.19***	.13***	1			
7	.05**	.13***	.10***	.23***	.40***	.09***	1		
8	.11***	.11***	.12***	.26***	.25***	0.01	0.02	1	
9	-.24***	-.38***	-.37***	-.27***	-.16***	-.34***	-.11***	-.06***	1
10	0.02	-.00	0	-.32***	-.25***	-.08***	-.16***	-.11***	.16***
11	.10***	.19***	.18***	.26***	.15***	.35***	.10***	-.02	-.29***
12	-.07***	-.08***	-.07***	-.46***	-.36***	-.05**	-.21***	-.20***	.18***
13	-.08***	-.02	-.04*	.13***	.14***	-.03*	.09***	.05**	-.04**
14	0.02	-.00	-.00	.07***	.16***	-.05**	.11***	.19***	.08***
15	0.01	.04**	.04*	-.13***	-.10***	-.07***	-.08***	.05***	.05**
16	.05***	.05***	.04*	.05**	.05***	0.01	.05**	.05**	-.04*
17	-.04**	-.08***	-.06***	.08***	.04*	.04*	0.01	-.09***	-.01
18	-.01	0.01	0	0.02	.04*	.03*	.04**	0.02	-.03
19	-.01	-.03*	-.04*	.15***	.12***	.08***	.11***	-.02	-.05**
20	-.01	0.02	0.01	-.01	-.06***	0.03	-.02	-.05**	0
21	-.05***	-.06***	-.05***	.05***	.05***	.10***	0.03	-.08***	-.01
22	0.03	-.02	.03*	-.01	0.03	-.06***	.05**	0.02	0.03

	10	11	12	13	14	15	16	17	18
11	-.09***	1							
12	.35***	-.06***	1						
13	-.22***	-.05**	-.08***	1					
14	-.05**	-.04*	-.15***	.04*	1				
15	.11***	-.23***	.07***	.07***	0.03	1			
16	-.00	.03*	0.01	-.03*	.10***	-.25***	1		
17	-.07***	.17***	-.05***	-.02	-.05***	-.60***	-.30***	1	
18	-.04*	.04**	-.03*	-.03*	-.05***	-.28***	-.14***	-.34***	1
19	-.08***	.21***	-.12***	-.04*	-.02	-.30***	.13***	.17***	.05**
20	-.02	0.02	.03*	0.01	-.11***	0.01	-.10***	.04*	0.03
21	-.07***	.17***	-.08***	0	-.07***	-.28***	-.31***	.46***	-.00
22	.06***	.04*	-.08***	-.05***	0	.35***	.04*	-.00	-.01

	19	20	21	22
19	1			
20	-.01	1		
21	.38***	.17***	1	
22	-.02	-.03	-.06***	1
*** p < .001 ** p < .01 * p < .05				

Table 2 (cont'd)

- 1 = Victimization Prevalence
- 2 = Victimization Frequency
- 3 = Victimization Variety
- 4 = Self-Control
- 5 = Delinquency
- 6 = Perceived Risk of Victimization
- 7 = Delinquent Peers
- 8 = Unstructured Socializing
- 9 = School Safety
- 10 = Parental Monitoring
- 11 = Perceived Disorder
- 12 = Collective Efficacy
- 13 = Male
- 14 = Age
- 15 = White
- 16 = Black
- 17 = Hispanic
- 18 = Other Race
- 19 = Concentrated Disadvantage
- 20 = Residential Mobility
- 21 = Ethnic Heterogeneity
- 22 = Survey Wave

Table 3: Baseline Cross-Sectional Model - School-Based Victimization Prevalence (N = 4,262)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Male	-.051***	.60	.13	-.77	-.26
Age	.10	1.11	.06	-.01	.21
Black	.33	1.39	.24	-.14	.80
Hispanic	-.04	.96	.16	-.36	.38
Other Race	.00	1.00	.19	-.37	.38
Concentrated Disadvantage	.01	1.01	.08	-.15	.17
Mobility	.00	1.00	.01	-.01	.02
Foreign Born	-.01	.99	.01	-.03	.00
Constant	.48	1.62	.82	-1.13	2.08
<i>Variance Components</i>					
Census Tract Number	.12	1.13	.08	.03	.48
Identification Number	3.19	24.29	.37	2.54	4.00
AIC: 4693.775					
*** p < .001 ** p < .01					

Table 4: Social Disorganization Cross-Sectional Model - School-Based Victimization Prevalence (N = 4,262)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Perceived Disorder	.75***	2.12	.13	.50	1.00
Perceived Collective Efficacy	-.04***	.67	.11	-.60	-.20
Male	-.52***	.59	.13	-.78	-.27
Age	.04	1.04	.07	-.09	.17
Black	.24	1.27	.24	-.23	.71
Hispanic	-.18	.84	.17	-.51	.15
Other Race	-.12	.89	.19	-.49	.26
Concentrated Disadvantage	-.06	.95	.08	-.22	.11
Mobility	.00	1.00	.01	-.01	.02
Foreign Born	-.02	.98	.01	-.04	0.00
Wave 2	.49***	1.64	.11	.28	.70
Wave 3	.14	1.15	.13	-.11	.39
Constant	1.06	2.88	1.02	-.95	3.06
<i>Variance Components</i>					
Census Tract Number	.13	1.13	.09	.03	.48
Identification Number	3.07	21.63	.36	2.44	3.88
AIC: 4628.861					
*** p < .001 ** p < .01					

Table 5: Self-Control Cross-Sectional Model - School-Based Victimization Prevalence
(N = 4,262)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Self-Control	.62***	1.86	.09	.45	.79
Male	-.63***	.53	.13	-.88	-.38
Age	.04	1.04	.07	-.09	.17
Black	.28	1.32	.24	-.20	.75
Hispanic	-.14	.87	.17	-.46	.19
Other Race	-.07	.94	.19	-.44	.31
Concentrated Disadvantage	-.04	.96	.08	-.21	.12
Mobility	.00	1.0.0	.01	-.01	.02
Foreign Born	-.01	.99	.01	-.03	.01
Wave 2	.47***	1.61	.11	.27	.68
Wave 3	.12	1.13	.13	-.13	.37
Constant	-.05	.58	.92	-.24	1.26
<i>Variance Components</i>					
Census Tract Number	.12	1.13	.09	.03	.49
Identification Number	3.07	21.48	.36	2.43	3.87
AIC: 4628.356					
*** p < .001 ** p < .01					

Table 6: Routine Activities Cross-Sectional Model - School-Based Victimization Prevalence (N = 4,262)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Self-Control	.05	1.06	.10	-.14	.24
Delinquency	1.25***	3.48	.21	.84	1.66
Perceived Risk of Victimization	.49***	1.64	.07	.36	.62
Delinquent Peers	-.05	.96	.07	-.19	.10
Unstructured Socializing	.40***	1.49	.11	.19	.61
Perceived School Safety	-.70***	.49	.07	-.85	-.56
Parental Monitoring	.21**	1.23	.07	.06	.35
Male	-.63***	.53	.13	-.88	-.40
Age	.01	1.01	.06	-.11	.14
Black	.17	1.18	.23	-.28	.62
Hispanic	-.12	.89	.16	-.48	.19
Other Race	-.17	.84	.18	-.53	.19
Concentrated Disadvantage	-.06	.94	.08	-.21	.08
Mobility	.01	1.01	.01	-.01	.02
Foreign Born	-.02	.98	.01	-.04	-.00
Wave 2	.44***	1.55	.11	.23	.65
Wave 3	.23	1.26	.13	-.02	.48
Constant	1.31	3.69	.99	-.63	3.24
<i>Variance Components</i>					
Census Tract Number	.07	1.07	.07	.01	.50
Identification Number	2.33	10.31	.31	1.80	3.02
AIC: 4367.978					
*** p < .001 ** p < .01					

Table 7: Multi-Theoretical Cross-Sectional Model - School-Based Victimization Prevalence (N = 4,262)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Self-Control	.03	1.03	.10	-.17	.23
Delinquency	1.24***	3.45	.21	.82	1.65
Perceived Risk of Victimization	.48***	1.62	.07	.35	.61
Delinquent Peers	-.05	.95	.07	-.19	.10
Unstructured Socializing	.40***	1.50	.11	.19	.61
Perceived School Safety	-.69***	.50	.07	-.84	-.55
Parental Monitoring	.22**	1.24	.08	.07	.36
Perceived Disorder	.11	1.11	.13	-.15	.36
Perceived Collective Efficacy	-.05	.95	.12	-.28	.18
Male	-.63***	.53	.13	-.87	-.38
Age	.01	1.01	.06	-.11	.13
Black	.16	1.17	.23	-.29	.61
Hispanic	-.14	.87	.16	-.44	.17
Other Race	-.18	.83	.19	-.54	.18
Concentrated Disadvantage	-.07	.93	.08	-.22	.08
Mobility	.01	1.01	.01	-.01	.02
Foreign Born	-.02	.98	.01	-.04	-.00
Wave 2	.45***	1.56	.11	.23	.66
Wave 3	.23	1.26	.13	-.01	.48
Constant	1.34	3.81	1.08	-.78	3.46
<i>Variance Components</i>					
Census Tract Number	.08	1.08	.07	.01	.49
Identification Number	2.34	10.34	.31	1.81	3.02
AIC: 4371.14					
*** p < .001 ** p < .01					

Table 8: Baseline Longitudinal Model - School-Based Victimization Prevalence (N = 2,551)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Male	-.54**	.58	.16	-.85	-.24
Age	-.05	.96	.08	-.20	.10
Black	.23	1.26	.29	-.33	.80
Hispanic	-.31	.73	.19	-.69	.07
Other Race	-.03	.97	.24	-.50	.43
Concentrated Disadvantage	-.06	.94	.09	-.24	.12
Mobility	.00	1.00	.01	-.01	.02
Foreign Born	-.01	.99	.01	-.03	.01
Constant	2.46	11.70	1.08	.35	4.57
<i>Variance Components</i>					
Census Tract Number	.03	1.03	.10	.00	38.83
Identification Number	3.41	30.27	.62	2.38	4.88
AIC: 2814.214					
*** p < .001 ** p < .01					

Table 9: Social Disorganization Longitudinal Model - School-Based Victimization Prevalence (N = 2,551)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Perceived Disorder	.21	1.23	.11	-.00	.42
Perceived Collective Efficacy	-.14	.87	.09	-.32	.05
Male	-.31**	.73	.10	-.50	-.12
Age	-.02	.98	.05	-.12	.08
Black	.03	1.03	.19	-.34	.40
Hispanic	-.26	.77	.13	-.51	-.01
Other Race	-.08	.92	.16	-.40	.23
Concentrated Disadvantage	-.06	.94	.06	-.17	.05
Mobility	.01	1.01	.01	--.00	.01
Foreign Born	-.00	1.00	.01	-.02	.01
Victimization Prevalence	1.65***	5.18	.10	1.45	1.84
Wave 2	-.35***	.70	.01	-.55	-.16
Wave 3	(empty)				
Constant	.54	1.72	.83	-1.09	2.17
<i>Variance Components</i>					
Census Tract Number	2.33 E-35		9.30 E-19	.	.
Identification Number	4.49 E-33		1.33 E-17	.	.
AIC: 2625.505					
*** p < .001 ** p < .01					

Table 10: Self-Control Longitudinal Model - School-Based Victimization Prevalence (N = 2,551)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Self-Control	.12	1.13	.08	-.03	.28
Male	-.33**	.72	.10	-.52	-.14
Age	-.01	.99	.05	-.12	.09
Black	.04	1.04	.19	-.33	.41
Hispanic	-.23	.80	.12	-.47	.01
Other Race	-.05	.80	.16	-.37	.26
Concentrated Disadvantage	-.05	.95	.06	-.16	.06
Mobility	.01	1.01	.01	-.00	.01
Foreign Born	-.00	1.00	.01	-.02	.01
Victimization Prevalence	1.66***	5.23	1.01	1.46	1.85
Wave 2	-.37***	.69	.10	-.56	-.17
Wave 3	(empty)	.	.	.	.
Constant	.04	1.04	.70	-1.34	1.41
<i>Variance Components</i>					
Census Tract Number	1.82 E-35		4.46 E-18	.	.
Identification Number	3.79 E-32		9.53 E-17	.	.
AIC: 2626.947					
*** p < .001 ** p < .01					

Table 11: Routine Activities Longitudinal Model - School-Based Victimization Prevalence (N = 2,551)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Self-Control	-.04	.96	.09	-.23	.14
Delinquency	.52***	1.68	.20	.13	.91
Perceived Risk of Victimization	.00	1.00	.06	-.12	.12
Delinquent Peers	.00	1.00	.08	-.15	.16
Unstructured Socializing	.26	1.30	.11	.06	.47
Perceived School Safety	-.40***	.67	.07	-.53	-.26
Parental Monitoring	.35***	1.42	.07	.21	.48
Male	-.31**	.74	.10	-.51	-.10
Age	-.03	.98	.05	-.13	.08
Black	.06	1.06	.19	-.32	.44
Hispanic	-.18	.84	.13	-.42	.07
Other Race	-.04	.96	.16	-.35	.28
Concentrated Disadvantage	-.04	.96	.06	-.16	.07
Mobility	.01	1.01	.01	-.00	.02
Foreign Born	-.00	1.00	.01	-.02	.01
Victimization Prevalence	1.46***	4.31	.11	1.25	1.67
Wave 2	-.39***	.68	.10	-.59	-.19
Wave 3	(empty)	.	.	.	.
Constant	.32	1.38	.85	-1.35	1.99
<i>Variance Components</i>					
Census Tract Number	3.00 E-36		1.32 E-19	.	.
Identification Number	1.51 E-33		5.83 E-18	.	.
AIC: 2569.704					
*** p < .001 ** p < .01					

Table 12: Multi-Theoretical Longitudinal Model - School-Based Victimization Prevalence (N = 2,551)

Variable	Coeff.	OR	SE	95% Confidence Interval	
Self-Control	-.08	.93	.10	-.27	.12
Delinquency	.50	1.65	.20	.11	.89
Perceived Risk of Victimization	-.01	1.00	.06	-.13	.12
Delinquent Peers	-.00	1.00	.08	-.15	.15
Unstructured Socializing	.26	1.30	.11	.06	.47
Perceived School Safety	-.39***	.68	.07	-.52	-.25
Parental Monitoring	.36***	1.43	.07	.22	.50
Perceived Disorder	.09	1.09	.12	-.15	.32
Perceived Collective Efficacy	-.10	.91	.11	-.32	.12
Male	-.30**	.74	.10	-.50	-.09
Age	-.03	.97	.05	-.14	.07
Black	.06	1.06	.19	-.32	.44
Hispanic	-.19	.83	.13	-.44	.06
Other Race	-.05	.95	.16	-.37	.27
Concentrated Disadvantage	-.05	.95	.06	-.16	.06
Mobility	.01	1.01	.01	-.00	.02
Foreign Born	-.00	1.00	.01	-.02	.01
Victimization Prevalence	1.46***	4.31	.11	1.25	1.67
Wave 2	-.38***	.69	.10	-.58	-.18
Wave 3	(empty)	.	.	.	.
Constant	.58	1.79	1.00	-1.30	2.46
<i>Variance Components</i>					
Census Tract Number	9.69 E-37		1.01 E-19	.	.
Identification Number	3.04 E-33		9.74 E-18	.	.
AIC: 2572.531					
*** p < .001 ** p < .01					

Table 13: Baseline Cross-Sectional Model - School-Based Victimization Frequency (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Male	-.13	.06	-.24	-.02
Age	-.00	.02	-.04	.04
Black	.13	.10	-.05	.32
Hispanic	-.05	.07	-.18	.09
Other Race	.05	.07	-.09	.18
Concentrated Disadvantage	-.01	.04	-.08	.06
Mobility	.00	.00	-.00	.01
Foreign Born	-.01	.00	-.01	.00
Constant	.80**	.31	.20	1.40
<i>Variance Components</i>				
Census Tract Number	.03	.02	.01	.09
Identification Number	.90	.05	.80	1.01
AIC: 19043.59				
*** p < .001 ** p < .01				

Table 14: Social Disorganization Cross-Sectional Model - School-Based Victimization Frequency (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Perceived Disorder	.48***	.04	.40	.56
Perceived Collective Efficacy	-.17***	.03	-.23	-.10
Male	-.13	.05	-.23	-.02
Age	.02	.03	-.03	.06
Black	.07	.09	-.11	.25
Hispanic	-.11	.07	-.24	.02
Other Race	-.00	.07	-.13	.13
Concentrated Disadvantage	-.05	.04	-.12	.02
Mobility	.00	.00	-.00	.01
Foreign Born	-.01	.00	-.02	-.00
Wave 2	.20***	.03	.14	.26
Wave 3	-.05	.04	-.13	.03
Constant	.25	.38	-.50	1.00
<i>Variance Components</i>				
Census Tract Number	.03	.09	-1.80	-1.46
Identification Number	.83	.05	.74	.93
AIC: 188523.41				
*** p < .001 ** p < .01				

Table 15: Self-Control Cross-Sectional Model - School-Based Victimization Frequency
(N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.30***	.03	.24	.36
Male	-.18**	.05	-.29	-.08
Age	.02	.03	-.03	.06
Black	.10	.09	-.09	.28
Hispanic	-.10	.07	-.22	.04
Other Race	.02	.07	-.11	.16
Concentrated Disadvantage	-.04	.04	-.11	.03
Mobility	.00	.00	-.00	.01
Foreign Born	-.01	.00	-.01	.00
Wave 2	-.01	.00	-.01	.00
Wave 3	.18***	.03	.12	.24
Constant	-.24	.36	-.85	.47
<i>Variance Components</i>				
Census Tract Number	.03	.02	.01	.09
Identification Number	.85	.05	.76	.95
AIC: 18877.22				
*** p < .001 ** p < .01				

Table 16: Routine Activities Cross-Sectional Model - School-Based Victimization Frequency (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.05	.03	-.01	.11
Delinquency	.45***	.05	.35	.54
Perceived Risk of Victimization	.20***	.02	.16	.23
Delinquent Peers	.02	.02	-.03	.07
Unstructured Socializing	.09**	.03	.03	.15
Perceived School Safety	-.32***	.02	-.56	-.28
Parental Monitoring	.05	.02	.00	.09
Male	-.21***	.05	-.30	-.11
Age	.01	.02	-.03	.06
Black	.04	.08	-.13	.20
Hispanic	-.12	.06	-.23	-.00
Other Race	-.04	.06	-.16	.08
Concentrated Disadvantage	-.06	.03	-.12	.01
Mobility	.00	.00	-.00	.01
Foreign Born	-.01	.00	-.01	.00
Wave 2	.16***	.03	.10	.22
Wave 3	-.01	.04	-.08	.07
Constant	.71	.36	.02	1.41
<i>Variance Components</i>				
Census Tract Number	.02	.01	.01	.06
Identification Number	.59	.04	.52	.67
AIC: 18334.99				
*** p < .001 ** p < .01				

Table 17: Multi-Theoretical Cross-Sectional Model - School-Based Victimization Frequency (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.04	.03	-.03	.10
Delinquency	.44***	.05	.34	.53
Perceived Risk of Victimization	.18***	.02	.14	.22
Delinquent Peers	.02	.02	-.03	.06
Unstructured Socializing	.10**	.03	.03	.16
Perceived School Safety	-.30***	.02	-.35	.26
Parental Monitoring	.05	.02	.00	.09
Perceived Disorder	.17***	.04	.09	.26
Perceived Collective Efficacy	-.01	.04	-.08	.06
Male	-.20***	.05	-.29	-.10
Age	.01	.02	-.03	.06
Black	.02	.08	-.14	.18
Hispanic	-.14	.06	-.25	-.02
Other Race	-.05	.06	-.17	.07
Concentrated Disadvantage	-.06	.03	-.12	-.00
Mobility	.00	.00	-.00	.01
Foreign Born	-.01	.00	-.01	.00
Wave 2	.17***	.03	.11	.22
Wave 3	.00	.04	-.07	.08
Constant	.50	.38	-.25	1.24
<i>Variance Components</i>				
Census Tract Number	.02	.01	.01	.06
Identification Number	.59	.04	.52	.67
AIC: 18322.67				
*** p < .001 ** p < .01				

Table 18: Baseline Longitudinal Model - School-Based Victimization Frequency (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Male	-.16**	.06	-.28	-.04
Age	-.08**	.03	-.14	-.03
Black	.10	.11	-.11	.31
Hispanic	-.20	.08	-.35	-.06
Other Race	-.03	.08	-.19	.13
Concentrated Disadvantage	-.04	.04	-.11	.04
Mobility	.00	.00	-.00	.01
Foreign Born	-.00	.00	-.01	.01
Constant	1.91***	.40	1.14	2.69
<i>Variance Components</i>				
Census Tract Number	.02	.02	.00	.11
Identification Number	.85	.06	.74	.97
AIC: 11751.44				
*** p < .001 ** p < .01				

Table 19: Social Disorganization Longitudinal Model - School-Based Victimization Frequency (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Perceived Disorder	.04	.04	-.05	.12
Perceived Collective Efficacy	-.05	.03	-.11	.02
Male	-.08	.04	-.16	-.01
Age	.00	.02	-.04	.04
Black	.07	.07	-.07	.20
Hispanic	-.12	.05	-.21	-.02
Other Race	-.03	.06	-.15	.09
Concentrated Disadvantage	-.05	.02	-.09	-.00
Mobility	.00	.00	.00	.01
Foreign Born	.00	.00	-.01	.01
Victimization Frequency (ln)	.73***	.02	.68	.77
Wave 2	-.38***	.04	-.44	-.29
Wave 3	(empty)	.	.	.
Constant	.36	.32	-.26	.99
<i>Variance Components</i>				
Census Tract Number	2.68 E-32	2.68 E-17	.	.
Identification Number	3.32 E-32	3.09 E-17	.	.
AIC: 11124				
*** p < .001 ** p < .01				

Table 20: Self-Control Longitudinal Model - School-Based Victimization Frequency (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.02	.03	-.04	.08
Male	-.08	.04	-.16	-.01
Age	.00	.02	-.04	.04
Black	.07	.07	-.07	.20
Hispanic	-.11	.05	-.21	-.02
Other Race	-.03	.06	-.14	.09
Concentrated Disadvantage	-.04	.02	-.09	-.00
Mobility	.00	.00	.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Frequency (ln)	.73***	.02	.69	.78
Wave 2	-.37***	.04	-.45	-.29
Wave 3	(empty)	.	.	.
Constant	.18	.27	-.36	.72
<i>Variance Components</i>				
Census Tract Number	3.50 E-39	1.93 E-21	.	.
Identification Number	8.31 E-33	7.24 E-18	.	.
AIC: 11123.86				
*** p < .001 ** p < .01				

Table 21: Routine Activities Longitudinal Model - School-Based Victimization Frequency (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	-.02	.04	-.09	.05
Delinquency	.11	.06	-.01	.24
Perceived Risk of Victimization	-.05	.02	-.09	.00
Delinquent Peers	-.03	.03	-.10	.03
Unstructured Socializing	.11**	.04	.03	.19
Perceived School Safety	-.12***	.03	-.07	-.07
Parental Monitoring	.06	.03	.00	.11
Male	-.09	.04	-.16	-.01
Age	-.00	.02	-.04	.04
Black	.07	.07	-.07	.20
Hispanic	-.10	.05	-.20	-.00
Other Race	-.02	.06	-.14	.10
Concentrated Disadvantage	-.04	.02	-.08	.00
Mobility	.00	.00	.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Frequency (ln)	.69***	.03	.64	.74
Wave 2	-.37***	.04	-.44	-.29
Wave 3	(empty)	.	.	.
Constant	.56	.32	-.07	1.20
<i>Variance Components</i>				
Census Tract Number	3.77 E-36	1.82 E-19	.	.
Identification Number	1.05 E-32	8.45 E-18	.	.
AIC: 11098.14				
*** p < .001 ** p < .01				

Table 22: Multi-Theoretical Longitudinal Model - School-Based Victimization Frequency (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	-.03	.04	-.10	.05
Delinquency	.11	.06	-.02	.23
Perceived Risk of Victimization	-.05	.02	-.09	.00
Delinquent Peers	-.03	.03	-.10	.03
Unstructured Socializing	.11**	.04	.03	.19
Perceived School Safety	-.12***	.03	-.17	-.07
Parental Monitoring	.06	.03	.01	.11
Perceived Disorder	.02	.05	-.07	.11
Perceived Collective Efficacy	-.03	.04	-.11	.05
Male	-.08	.04	-.16	-.01
Age	-.00	.02	-.04	.04
Black	.07	.07	-.07	.20
Hispanic	-.10	.05	-.10	-.01
Other Race	-.02	.06	-.14	.10
Concentrated Disadvantage	-.04	.02	-.09	.00
Mobility	.00	.00	.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Frequency (ln)	.69***	.03	-.64	.74
Wave 2	-.37***	.04	.64	.74
Wave 3	(empty)	.	.	.
Constant	.63	.36	-.07	1.34
<i>Variance Components</i>				
Census Tract Number	2.19 E-33	3.04 E-18	.	.
Identification Number	2.60 E-33	8.09 E-18	.	.
AIC: 11101.50				
*** p < .001 ** p < .01				

Table 23: Baseline Cross-Sectional Model - School-Based Victimization Variety (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Male	-.10	.04	-.18	-.01
Age	.02	.02	-.01	.06
Black	.08	.07	-.07	.23
Hispanic	-.03	.05	-.14	.07
Other Race	.03	.06	-.08	.14
Concentrated Disadvantage	-.02	.03	-.07	.04
Mobility	.00	.00.	-.00	.01
Foreign Born	-.00	.00	-.01	.00
Constant	.10	.25	-.40	.59
<i>Variance Components</i>				
Census Tract Number	.02	.01	.01	.05
Identification Number	.43	.03	.37	.49
AIC: 14452.05				
*** p < .001 ** p < .01				

Table 24: Social Disorganization Cross-Sectional Model - School-Based Victimization Variety (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Perceived Disorder	.37***	.04	.30	.44
Perceived Collective Efficacy	-.12***	.03	-.17	-.06
Male	-.10	.04	-.17	-.01
Age	.01	.02	-.03	.05
Black	.03	.07	-.11	.17
Hispanic	-.10	.05	-.20	.01
Other Race	-.02	.06	-.13	.10
Concentrated Disadvantage	-.04	.03	-.10	.01
Mobility	.00	.00	-.00	.01
Foreign Born	-.01	.00	-.01	.00
Wave 2	.14***	.03	-.09	.20
Wave 3	.06	.04	-.01	.13
Constant	.02	.31	-.59	.64
<i>Variance Components</i>				
Census Tract Number	.02	.01	.01	.05
Identification Number	.38	.03	.33.	.44
AIC: 14314.12				
*** p < .001 ** p < .01				

Table 25: Self-Control Cross-Sectional Model - School-Based Victimization Variety
(N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.24***	.03	.19	.29
Male	-.14**	.04	-.22	-.06
Age	.00	.02	-.04	.04
Black	.05	.07	-.09	.19
Hispanic	-.08	.05	-.19	.03
Other Race	.00	.06	-.11	.11
Concentrated Disadvantage	-.04	.03	-.09	.02
Mobility	.00	.00	-.00	.01
Foreign Born	-.00	.00	-.01	.00
Wave 2	.13***	-.03	.07	.19
Wave 3	.05	-.04	-.03	.12
Constant	-.29	.29	-.86	.28
<i>Variance Components</i>				
Census Tract Number	.02	.01	.01	.05
Identification Number	.39	.03	.34	.45
AIC: 14347.64				
*** p < .001 ** p < .01				

Table 26: Routine Activities Cross-Sectional Model - School-Based Victimization Variety (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.04	.03	-.01	.10
Delinquency	.32***	.04	.24	.40
Perceived Risk of Victimization	.16***	.02	.13	.19
Delinquent Peers	-.01	.02	-.05	.03
Unstructured Socializing	.09**	.03	.03	.15
Perceived School Safety	-.27***	.02	-.31	-.23
Parental Monitoring	.05	.02	.01	.09
Male	-.14***	.04	-.21	-.07
Age	.00	.02	-.04	.04
Black	-.01	.06	-.13	.12
Hispanic	-.08	.05	-.17	.01
Other Race	-.05	.05	-.15	.05
Concentrated Disadvantage	-.05	.02	-.09	-.00
Mobility	.00	.00	-.00	.01
Foreign Born	-.00	.00	-.01	.00
Wave 2	.11***	.03	.06	.17
Wave 3	.10**	.04	.03	.17
Constant	.49	.29	-.08	1.05
<i>Variance Components</i>				
Census Tract Number	.01	.01	.00	.04
Identification Number	.24	.02	.20	.28
AIC: 13899.93				
*** p < .001 ** p < .01				

Table 27: Multi-Theoretical Cross-Sectional Model - School-Based Victimization Variety (N = 4,262)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.04	.03	-.02	.09
Delinquency	.32***	.04	.24	.40
Perceived Risk of Victimization	.15***	.02	.11	.18
Delinquent Peers	-.01	.02	-.06	.03
Unstructured Socializing	.10**	.03	-.04	.15
Perceived School Safety	-.26***	.02	-.30	-.22
Parental Monitoring	.05	.02	-.01	.09
Perceived Disorder	.12**	.04	.04	.19
Perceived Collective Efficacy	.02	.03	-.04	.08
Male	-.14***	.04	-.21	-.07
Age	.00	.02	-.04	.04
Black	-.02	.06	-.14	.11
Hispanic	-.09	.05	-.18	-.00
Other Race	-.06	.05	-.16	.04
Concentrated Disadvantage	-.05	.02	-.07	-.01
Mobility	.00	.00	-.00	.01
Foreign Born	-.00	.00	-.01	.00
Wave 2	.12***	.03	.06	.17
Wave 3	.11**	.04	.04	.18
Constant	.25	.31	-.36	.87
<i>Variance Components</i>				
Census Tract Number	.01	.01	.00	.04
Identification Number	.24	.02	.20	.28
AIC: 13893.73				
*** p < .001 ** p < .01				

Table 28: Baseline Longitudinal Model - School-Based Victimization Variety (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Male	-.11	.04	-.20	-.02
Age	-.03	.02	-.07	.02
Black	.02	.08	-.14	.18
Hispanic	-.12	.06	-.23	-.01
Other Race	-.05	.06	-.18	.08
Concentrated Disadvantage	-.04	.03	-.09	.02
Mobility	.00	.00	-.00	.01
Foreign Born	-.00	.00	-.01	.01
Constant	.80	.31	.19	1.41
<i>Variance Components</i>				
Census Tract Number	.01	.01	.00	.06
Identification Number	.34	.03	.29	.40
AIC: 8942.784				
*** p < .001 ** p < .01				

Table 29: Social Disorganization Longitudinal Model - School-Based Victimization Variety (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Perceived Disorder	.04	.04	-.03	.11
Perceived Collective Efficacy	-.03	.03	-.08	.03
Male	-.08	.03	-.13	.01
Age	-.02	.02	-.06	.01
Black	-.00	.06	-.11	.11
Hispanic	-.10	.04	-.18	-.02
Other Race	-.06	.05	-.15	.04
Concentrated Disadvantage	-.04	.02	-.07	-.00
Mobility	.00	.00	-.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Variety (ln)	.83***	.03	.77	.88
Wave 2	-.14***	.03	-.21	-.08
Wave 3	(empty)	.	.	.
Constant	.13	.26	-.38	.64
<i>Variance Components</i>				
Census Tract Number	1.48 E-32	4.77 E-18	.	.
Identification Number	3.31 E-33	4.81 E-18	.	.
AIC: 8292.168				
*** p < .001 ** p < .01				

Table 30: Self-Control Longitudinal Model - School-Based Victimization Variety (N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	.01	.03	-.04	.06
Male	-.07	.03	-.13	-.01
Age	-.02	.02	-.05	.01
Black	.01	.05	-.10	.11
Hispanic	-.09	.04	-.17	-.01
Race Other	-.05	.05	-.15	.04
Concentrated Disadvantage	-.04	.02	-.07	.00
Mobility	.00	.00	-.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Variety (ln)	.83***	.03	.78	.89
Wave 2	-.15***	.03	-.21	-.09
Wave 3	(empty)	.	.	.
Constant	.06	.02	-.38	.50
<i>Variance Components</i>				
Census Tract Number	3.47 E-32	4.99 E-18	.	.
Identification Number	9.82 E-35	4.55 E-19	.	.
AIC: 8292.161				
*** p < .001 ** p < .01				

Table 31: Routine Activities Longitudinal Model - School-Based Victimization Variety
(N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	-.02	.03	-.08	.03
Delinquency	.04	.05	-.05	.14
Perceived Risk of Victimization	-.02	.02	-.06	.01
Delinquent Peers	.00	.03	-.05	.05
Unstructured Socializing	.09**	.03	-.03	.16
Perceived School Safety	-.10***	.02	-.14	-.06
Parental Monitoring	.05	.02	.01	.09
Male	-.07	.03	-.14	-.01
Age	-.03	.02	-.06	.01
Black	.00	.05	-.11	.11
Hispanic	-.08	.04	-.14	-.00
Other Race	-.05	.05	-.15	.05
Concentrated Disadvantage	-.04	.02	-.07	-.00
Mobility	.00	.00	-.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Variety (ln)	.78***	.03	.71	.84
Wave 2	-.14***	.03	-.21	-.00
Wave 3	(empty)	.	.	.
Constant	.34	.27	-.19	.86
<i>Variance Components</i>				
Census Tract Number	1.25 E-33	7.25 E-19	.	.
Identification Number	5.01 E-31	5.11 E-17	.	.
AIC: 8269.354				
*** p < .001 ** p < .01				

Table 32: Multi Theoretical Longitudinal Model - School-Based Victimization Variety
(N = 2,551)

Variable	Coeff.	SE	95% Confidence Interval	
Self-Control	-.03	.03	-.09	.03
Delinquency	.04	.05	-.06	.14
Perceived Risk of Victimization	-.03	.02	-.06	.01
Delinquent Peers	.00	.03	-.05	.05
Unstructured Socializing	.10**	.03	.03	.16
Perceived School Safety	-.10***	.02	-.13	-.05
Parental Monitoring	.05	.02	.01	.09
Perceived Disorder	.03	.04	-.04	.11
Perceived Collective Efficacy	-.02	.03	-.08	.05
Male	-.08	.03	-.13	-.01
Age	-.03	.02	-.06	.01
Black	-.00	.06	-.11	.11
Hispanic	-.09	.04	-.17	-.01
Other Race	-.05	.05	-.15	.04
Concentrated Disadvantage	-.04	.02	-.07	-.00
Mobility	.00	.00	-.00	.01
Foreign Born	.00	.00	-.00	.01
Victimization Variety (ln)	.77***	.03	.71	.84
Wave 2	-.14***	.03	-.21	-.08
Wave 3	(empty)			
Constant	.36	.30	-.22	.94
<i>Variance Components</i>				
Census Tract Number	1.92 E-35	1.05 E-19	.	.
Identification Number	2.29 E-36	5.14 E-20	.	.
AIC: 8272.541				
*** p < .001 ** p < .01				

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