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# Examining What Makes Violent Crime Victims Unique: Extending Statistical Methods for Studying Specialization to the Analysis of Crime Victims

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**Abstract**
*Objectives* Much victimization research focuses on specific types of crime victims, which implies that the factors responsible for some victimization outcomes are distinct from others. Recent developments in victimization theory, however, take a more general approach, postulating that victimization regardless of type will share a similar basic etiology. This research examines how and whether the risk factors that are associated with violent victimization significantly differ from those that predict nonviolent victimization.
*Methods* Using data from 3,682 Kentucky youth, we employ Osgood and Schreck's (2007) Item Response Theory-based statistical approach for detecting specialization to determine the properties and predictors of tendencies for individuals to fall victim to specific types of crime.

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*Results* Findings show that victims typically experience varied outcomes, but some victims have a clear tendency toward violent victimization and that it is possible to predict this tendency.
*Conclusions* The findings indicate that a more nuanced general approach, one that accounts for tendencies toward specific victimization outcomes, might add insight about the causes of victimization. This research also shows how statistical methods designed to examine offense specialization can add value for research on victimization.

**Keywords** Victimization · Specialization · Item response theory · Violence

## Introduction

A consistent criminological finding is that people who break the law have a higher likelihood of falling victim to crime as well (Hindelang et al. 1978; Lauritsen and Laub 2007; Schreck et al. 2008; Wolfgang 1958). Yet, academic criminology is just beginning to investigate why this finding is substantively important (Schreck and Stewart 2011). One promising implication that arises from the close connection between offending and victimization is that theoretical and empirical insights regarding criminal offending also may be effectively used to help explain victimization patterns. Consistent with this idea, recent scholarship suggests that leading criminal offending theories also account for variation in criminal victimization or help explain the victim-offender overlap (Agnew 2002; Hindelang 1976; Piquero and Hickman 2003; Schreck 1999; Schreck and Stewart 2011; Schreck et al. 2008; Stewart et al. 2006).

Despite these studies, research investigating the parallels and connections between patterns of criminal offending and criminal victimization remains underdeveloped. In particular, we note that two questions prominent in the criminal offending literature have not been sufficiently considered in studies of victimization. The first question revolves around the concept of "criminal specialization". Within the research literature on offending, considerable attention is devoted to determining whether individuals primarily commit one particular type of crime (e.g., assault) or rather exhibit a versatile repertoire of offending activity (e.g., Gottfredson and Hirschi 1990; Osgood and Schreck 2007; Sullivan et al. 2006, 2009; McGloin et al. 2011). Evidence from this body of research studies indicates that while most frequent offenders show considerable versatility in their lawbreaking activity, there is a small group whose offense records favor a particular type of crime (e.g., violence) over others. However, an unanswered question is whether this concept of specialization is relevant to criminal victimization.[1] Empirical data consistently indicate that the loss or destruction of property is the most common form of criminal victimization (Bureau of Justice Statistics 2008), but it remains unclear if individuals systematically deviate from this dominant larceny/theft pattern. For example, it could be the case that some individuals are more prone to repeatedly fall victim to violent crime,

[1] One difficulty for our particular line of inquiry is that the term "specialization" might be invidious with respect to describing victimization, implying as it does the possibility that victims somehow willingly choose what types of crimes they fall victim to. This to us is a value question rather than a scientific one; however, we only use "specialization" in order to draw appropriate parallels in the cognate literature on offending. Otherwise, in this paper, we refer to the phenomenon as "victim type differentiation" or "differential victimization."

while others face repeated victimizations that are not differentiated by crime type (i.e., a random mix of violent and theft victimizations).

The second question centers on theoretical matters. Within scholarship on offending, researchers and theorists have actively debated whether patterns of offending—including evidence of specialization—are better explained by narrowly focused theories that aim to account for specific types of offending (e.g., violence), or by more generally focused theoretical arguments that purport to effectively explain many, and perhaps all, of the varied types of offending activity (McGloin et al. 2011). Given the known empirical connections between offenders/offending and victims/victimization, the debate over the explanatory primacy of typological or general theories appears relevant to victimology, but has heretofore not been given the necessary attention. In other words, if individuals do systematically vary in their patterns of victimization, an open question is whether type-specific or general theories provide greater power to predict and explain that variation.

In the current study, we extend the research literature on victimization by investigating these two key questions. That is, we first investigate whether there is systematic differentiation in patterns of individual criminal victimization. Second, we examine the extent to which any observed patterns of victim type differentiation are better explained through the lenses of typological or general theories of crime.

## Theoretical Background

The idea that crime victims can be classified into particular types is arguably as deeply rooted in theories of victimization as much as the idea of offender specialization is within criminological theory. For instance, more than 50 years ago, von Hentig (1948) developed an extensive taxonomy of victim types based on the belief that victims differ in systematic ways, including in the types of crime to which they most commonly fall prey. Cuevas et al. (2007, p 1582) recently explained the reasoning of this approach while contrasting it with theories that link offending and victimization: "This account ignores an important group of youth: Those who are victims but not delinquents, and for whom delinquent or risky activity plays little or no role in their victimization. Victims of parental or child abuse may fall into this category. Such children are targeted for reasons unrelated to their engaging in delinquent behavior." Put another way, the causes of child abuse victimization *differ* in crucial respects from those processes that produce victims of other offenses. Although the current study does not focus specifically on child abuse victimization, focusing rather on the more general violent/nonviolent victimization contrast, this passage illustrates a broader point about the typological approach, that general processes cannot adequately encompass all—or even many—key forms of victimization.

Consistent with a taxonomic viewpoint, the victimization field today has a fragmented appearance with distinctions between victims of violence and victims of other crimes, say larceny/theft, taken for granted. Indeed, the list of thriving subfields is extensive and includes child abuse victimization (e.g., Widom 1989), bullying (e.g., Olweus 1978; Olweus and Limber 2000), violent street victimization (e.g., Melde et al. 2009; Felson 1992; Stewart et al. 2006; Jacobs and Wright 2006), and intimate partner victimization (e.g., Lanier and Maume 2009).

Theorizing within research on criminal victimization also tends to be type-specific, designed to locate and explain a particular type of victim (e.g., the violent crime victim). For instance, Von Hentig's early work proposes that there are numerous types of victims of crime and he attempts to identify the salient characteristics associated with each one. For

instance, he argues that females, youth, and the old would be particularly prone to violent victimization due to their limited physical strength (see, pp. 404–411). Recent evidence seems to corroborate his basic idea. Felson (1996), for example, analyzing a sample of individuals in Albany, NY, reported physical power differentials as a reason why female adults are more likely to experience attack than males. From findings such as this, we might derive a general expectation that among individuals who experience victimization, females will be more likely than males to experience violent rather than nonviolent forms.

Subculture of violence theories offer a different causal process that should lead to a preponderance of violent rather than nonviolent victimization. Although details of the specific subcultural theories differ to some extent, they generally suggest that for individuals embedded in a violent subculture, prevailing norms and values prescribe violent responses to infractions. Indeed, at the heart of Anderson's (1999) theory about the "street code" value system is the notion that even seemingly minor instances of disrespect should be responded to with aggression or violence. Evidence supporting the logic of this relationship can be gleaned from several bodies of research. For example, a number of studies have found that in the context of a subculture of violence, an individual's involvement in criminal offending is likely to provoke their own subsequent victimization (Jacobs and Wright 2006; Jensen and Brownfield 1986; Singer 1981; Stewart et al. 2006). Meanwhile, Taylor et al. (2007) found that membership in youth gangs—in which norms supporting violence are often emergent—promotes an increased risk of violent victimization (see also, Taylor et al. 2008). Likewise, Stewart et al. (2006) reported that individuals who endorse a street code that justifies the use of violence in a range of situations are themselves more likely to become victims of violence (for possible exceptions to this pattern, see Jacobs and Wright 2006). In summary, this body of theory and research leads to the expectation that individuals who hold beliefs that justify situational retaliatory aggression against others will have a relatively greater likelihood of becoming a victim of violent as compared to nonviolent crime.

To date, however, empirical research assessing the veracity of any particular typological theory framework is extremely sparse and therefore inconclusive. This is a critical shortcoming because the prospect that victims may experience some forms of victimization and not so much others has important theoretical implications. Specifically, to the extent that victim type differentiation occurs and varies across individuals, it raises serious questions about general theories, which have difficulty accounting for such victimization patterns. Indeed, while general theories might capably explain who is likely to become a crime victim and who is not, they are not able to explain why some individuals are prone to one type of victimization (e.g., violence) while others are prone to be victims of another type. On the other hand, to the extent that victimization patterns do not differ significantly across individuals, the need for specialized theories (and research) on victimization subtypes would seem to be undermined and we might expect that any good theory would be able to locate the central processes *common to all* forms of victimization.

In the criminological literature, general theories pose a challenge to specialized theories of crime. This challenge is less visible in the victimization field because, as we noted earlier, the debate about the value of specialized versus general theories has not yet seen much development. Although the above specialized theories of victimization provide arguments for why there may be significant victimization differentiation (i.e., specialization) across individuals, prior research has done little to directly examine the merit of those theories for explaining an individual's tendency to experience violent rather than nonviolent forms of victimization. Indeed, the vast majority of the research tends to focus on specific forms of victimization (e.g., violence) in isolation from other forms (e.g., theft),

making it difficult to know whether the predictors of one victimization type also are predictive of another type.[2] Additionally, these studies have not directly examined whether typological theories are in fact predictive of differential victimization (e.g., the tendency for violent relative to nonviolent victimization). Thus, in the absence of direct empirical evidence of victim type differentiation, we are left without answers to a salient question: Are specialized theories of violent victimization needed or do general theories of victimization effectively explain both violent and nonviolent types of victimization?

Interestingly, past scholarship introduces important challenges to the notion that specialized theories of violent victimization are necessary. For example, Hindelang et al. (1978) observed a positive correlation between personal and property victimization, indicating that frequent victims often experience a range of types of victimization rather than a single type (see also, Gottfredson 1984; Hope et al. 2001). Building from this pattern, some recent theories appear to reject the view that victims of violent crimes are substantively distinct from victims of nonviolence. The main conceptual framework espousing this perspective is derived from Gottfredson and Hirschi's low self-control theory (1990), a leading general theory of criminality (Pratt and Cullen 2000). In a reformulation of this theory, Schreck (1999) contends that low self-control—conceptualized as the inability to appreciate the long-term negative consequences of one's behavior—aggravates the risk of experiencing *any* type of victimization. Consistent with that thesis, several studies indicate that low self-control is a significant predictor of several types of victimization, ranging from theft to violence to fraud (e.g., Campbell Augustine et al. 2002; Holtfreter et al. 2010; Ousey et al. 2008; Piquero et al. 2005; Schreck et al. 2002, 2006; Stewart et al. 2004; Wilcox et al. 2009). This research has not yet considered the question of whether self-control has a *differential* impact on the types of victimization that an individual experiences. This is a critical limitation because in our view, if the theory is accurate, self-control should be predictive of variations in overall levels of victimization, but not the relative balance of victimization types that are experienced.

In light of the theoretical implications delineated above, we contend that the general versus typological theory debate is an important issue for scholarship on victimization and, consequently, it is a primary focus of the current study. In the next section of the paper, we posit a set of research questions to guide our investigation of that issue and frame the analyses that follow.

## Summary of Research Questions

In light of the theoretical and empirical foundations described above, the current research investigates four questions. The first two questions are primarily descriptive, focusing on the nature and stability of individual differentiation in criminal victimization. The third and fourth questions are more theoretical, focusing specifically on the expectations derived from the theoretical arguments discussed earlier.

(1) Is there evidence of significant differentiation across individuals in the type of criminal victimization that they experienced?
(2) Assuming that there are significant differential tendencies in the type of victimization outcomes, is there evidence that such tendencies are stable across time? In other

[2] This issue also exists in research on criminal offending, as detailed by McGloin et al. (2011).

words, do individuals whose experiences deviate significantly from the average at one time point repeat this pattern at a later point in time?

(3) Do factors such as adherence to violent subcultural values and being female predict victimization differentiation (toward violent victimization) as suggested by the specialized/typological theories of victimization noted above?

(4) As suggested by the general theory framework outlined above, are variations in levels of impulsivity, which is a feature of those with low self-control, unrelated to victimization differentiation? Or contrary to theoretical expectations, does low self-control predict an unusual tendency to experience one form of victimization over another?

To address these questions, we utilize four waves of panel data from youths in the state of Kentucky in the early 2000s. These data, along with the measures and analytic methods that are employed in the current study, are described in the next section.

## Data and Analytic Methods

Data were drawn from the Rural Substance Abuse and Violence Project (RSVP), a prospective four-wave panel study of adolescents residing in the state of Kentucky between 2001 and 2004 (NIDA Grant DA-11317). The RSVP data were collected initially in the spring of 2001 when the participating panel was in the seventh grade, with follow-up measurements taking place in the spring of 2002, 2003 and 2004. The sampling design for the RSVP involved a multi-stage procedure to select 30 (of 120) Kentucky counties drawn from population-based strata. Within the 30 selected counties, 74 public schools containing seventh graders were contacted and 65 or 87.8 percent agreed to participate. The targeted population was 9,488 seventh graders enrolled in these 65 middle schools at the initiation of the study. Active parent consent was required since study participants lacked anonymity and were under the age of adulthood.

Using the "Dillman method" for mailed surveys (Dillman 1978), active consent was granted by 43 percent of parents, so 4,102 sample participants had parental approval[3] Given that the current study focuses on establishing the extent, nature and predictors of differential victimization, our objectives center primarily on cross-sectional between-individual differences in victimization patterns. However, because a pattern of victim type differentiation gains additional support if it is stable over time, we replicate our cross-sectional analyses for each of the four waves of the RSVP.

### Dependent Variables

Table 1 reports the descriptive statistics for each of the measures across the four waves. Our outcome measures are based upon five self-report victimization items measuring approximately how frequently during the current school year the respondent was physically attacked, forced to give up money or property, threatened with a gun, with a (non-gun) weapon, or experienced a theft. Scores ranged from "0," indicating no experience with victimization, through "10+," or ten or more encounters. For purpose of descriptive statistics, the means represent the average score for the five victimization items. As is

[3] For additional details on sample characteristics and attrition, see, for example, Ousey and Wilcox (2007) and Wilcox et al. (2009). For additional details on the application of the Dillman method in the RSVP study, see Wilcox et al. (2006).

**Table 1** Descriptive statistics

| | | | Wave 1 | | Wave 2 | | Wave 3 | | Wave 4 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Wave 1 | Min. | Max. | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Violent Victimization | 0 | 10 | .92 | 1.45 | .84 | 1.37 | .66 | 1.26 | .57 | 1.23 |
| Male | 0 | 1 | .48 | .50 | .48 | .50 | .47 | .50 | .48 | .50 |
| African American | 0 | 1 | .06 | .23 | .06 | .23 | .05 | .23 | .05 | .23 |
| Age | 11 | 19 | 12.45 | .59 | 13.45 | .59 | 15.41 | .55 | 16.41 | .55 |
| Impulsivity | 1 | 4 | 1.87 | .72 | 1.85 | .73 | 1.73 | .71 | 1.75 | .73 |
| Violent Subculture | 1 | 4 | 1.70 | .74 | 1.71 | .75 | 1.72 | .68 | 1.67 | .66 |
| Friends' Violence | −1 | 1 | .17 | .46 | .11 | .41 | .10 | .43 | .09 | .42 |
| Guardianship | 1 | 5 | 3.58 | .81 | 3.47 | .77 | 3.46 | .70 | 3.44 | .71 |
| Self-Reported Violence | 1 | 5 | 1.26 | .54 | 1.21 | .54 | 1.16 | .47 | 1.14 | .45 |

typical with count data, the responses to these victimization items are positively skewed, with the majority of respondents experiencing victimization either never or once (Mean = .92, .84, .66, and .57 for waves 1 through 4, respectively). The description of the IRT approach (see below) outlines how these items are recoded for that specific operation.

## Independent Variables

### *Impulsivity*

Impulsivity is a personality characteristic that Gottfredson and Hirschi (1990) attributed to the presence of low self-control, and is a common component of the usual measures in tests of self-control theory (e.g., Grasmick et al. 1993).[4] Six of items in the RSVP data measure impulsivity ("difficulty remaining seated at school," "difficulty keeping attention on tasks," "get restless after a few minutes," "get thrown off by little distractions," "am nervous/on edge," and "I can't seem to stop moving"); these items are averaged and used in our analyses. Respondents could answer each item in this index with four response options (1 = "never true," through 4 = "always true"). The responses for each wave indicate that the average respondent felt that these descriptions never or rarely applied to them (Mean = 1.85 for both waves). The impulsivity index for the four waves has high internal consistency (Cronbach's $\alpha$ = .86, .86, .88, and .89 for Waves 1 through 4, respectively).

### *Violent Subculture*

Membership in a violent subculture is often characterized by adherence to a normative system where one earns respect through appearing violent, tough, and being prepared to resort to retribution whenever disrespect occurs. Four items in the Kentucky data capture these qualities, asking individuals how acceptable it is to: beat up other kids to gain

[4] The Kentucky data also include items measuring difficulty in controlling temper, which is a characteristic of those with low self-control, but we elected not to use these insofar as they could arguably be too closely linked with violent outcomes.

respect, beat up others who call you a dirty name, beat up others who start a fight with you, and hit other people as a means to get what one wants (see, also, Ousey and Wilcox 2005). Respondents indicated one of four responses to each item (1 = "strongly disagree" through 4 = "strongly agree"); their responses were averaged across the items to create an overall index score. On average, respondents disagreed with these violent subculture statements (Mean = 1.70 for 2001). Alpha reliability tests indicate an acceptable level of internal consistency for the four items used to construct this measure across the waves (Cronbach's $\alpha = .76$, .75, .73, and .73 for Waves 1 through 4, respectively).

## Control Variables

### *Demographic Controls*

Our analysis also incorporates respondents' demographic characteristics as control variables: age (in years), race (1 = African American, 0 = Other), and gender (1 = male).[5] In Wave 1, the average respondent was 12.5 years old. The remaining demographic characteristics for the sample did not vary significantly across the four waves. Approximately 5% of the sample was African-American, with males comprising about 48% of the sample.

### *Other Controls*

To control for possible situational factors that might elevate the risk of violence, we created measures for friends' tendency to engage in violence over nonviolence, the degree to which the school was prepared to guard against violence, and self-reported violence. Respondents were asked to report on their friends' behavior on two items (physical attack and theft of money or property). Based on these items, we created an index measuring the ratio of violent to nonviolent criminal activity by these friends. A "yes" answer to the violence item was given a positive one-point score, where similar answers to nonviolent item were assigned a negative one-point score. Scores from this ratio thus range from −1, signifying only nonviolent, to +1, indicating only violent. Across the four waves, scores indicated very slight favoritism toward violence. To measure violence-specific guardianship, the RSVP survey asked respondents how often teachers and students at school actively tried to stop and report violence that happened on school property. Responses ranged from 1 (indicating "rarely") to 5 (indicating "always"). The mean score for each wave ranged between 3.5 and 3.6, meaning that the respondents felt that teachers and their fellow students responded to violence either "sometimes" or "often." Finally, four self-reported violent offending items measured how often during a given month respondents engaged in physical assault and robbery. For both offense types, RSVP data included separate items for offending at school and away from school. These constructs were measured using an ordinal index: 1 = "never", 2 = "less than once a month," 3 = "about once a month," 4 = "about 1–2 times per week," 5 = "daily or almost daily." As is typical for offense data, the distribution of these data are positive skewed, with the majority of respondents engaging in no offending.

[5] "Other" in this sample, is almost all white, non-Hispanic. Treating non-Hispanic whites as the reference category does not change the results.

## Analytic Methods

Our statistical approach uses Osgood and Schreck's (2007) Item Response Theory (IRT)-based statistical model, which numerous studies have productively used to study specialization in offending (e.g., McGloin et al. 2011; Ousey and Lee 2010; Schreck et al. 2008, 2009; Sullivan et al. 2009). Researchers have employed IRT methods over the years, typically to assess the measurement properties of substantively important scales (e.g., Piquero et al. 2002). As this approach has become fairly common in recent research, we focus on the major features of the model and the advantages that it has for studying differential victimization.

The Osgood and Schreck model applied in the present study incorporates two levels of analysis because individual victimization items are nested within individual respondents.[6] The Level-1 model is a measurement model that defines a latent measure of overall victimization ($\beta_{0j}$) as well as measure of differential victimization ($\beta_{1j}$), the central focus of this study. The ability to simultaneously measure—and explain—both the overall level of victimization as well as any differential victimization tendency is an advantage over more traditional approaches, which typically require the estimation and post hoc comparison of results from separate models predicting different types of victimization (e.g., violence, theft, etc.; we will return to this point at the end of the results). To define the differential victimization index, the model includes a group-mean centered dummy variable, *Diff*, which takes on positive scores for violent victimization items and negative scores for nonviolent victimization items. The coefficient associated with this differential victimization variable reports the difference in the log of the expected event-rate for violent items to the log of the expected event-rate for nonviolent items. In other words, the "differential victimization" coefficient, $\beta_{1j}$, measures the extent to which individuals are more prone to violent or nonviolent victimization experiences. A positive value of $\beta_{1j}$ implies that an individual has a greater tendency to suffer violent victimization relative to nonviolent victimization; a negative value implies that nonviolent victimization is more prevalent. This coefficient is specified as randomly varying across individuals in the HLM model and its variance component score ($\tau$) can be viewed as a summary statistic that measures the overall extent of type differentiation in the victimization outcomes in the sample. If this statistic is not different from zero, it suggests that individual variations in patterns of victimization are due to chance. On the other hand, a statistically significant variance component indicates evidence of type differentiation in victimization experiences across individuals. The statistical significance of the differential victimization summary measure can be determined by dividing $\tau$ by its associated standard error. Note that the dependent variable is a count outcome, which differs from previous analyses using the IRT method, which used dichotomized outcome data (see Osgood and Schreck 2007; Sullivan et al. 2009).

[6] In the notation of hierarchical linear modeling (Raudenbusch and Bryk 2002), our Level-1 regression equation is:

$$\ln(\lambda_{ij}) = \beta_{0j} + \beta_{1j}\text{Diff} + \sum_{i=2}^{I-1} \beta_{ij} D_{ij} \quad (1)$$

The Level-2 regression equations are:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}\text{X1}j + \gamma_{02}\text{X2}j + \cdots + \text{u}_{0j} \quad (2)$$

$$\beta_{1j} = \gamma_{11}\text{X1}j + \gamma_{12}\text{X1}j + \cdots + \text{u}_{1j} \quad (3)$$

$$\beta_{ij} = \gamma_{i0} \quad (4)$$

In Eq. 1, the intercept, $\beta_{0j}$, refers to the average score for all victimization items, $\beta_{1j}$ is the differential victimization coefficient, and the remainder incorporates the base rates for the individual victimization items through dummy variables indicative of each item.

To address the difference in level of measurement, and the fact that the victimization data are skewed, we estimated a Poisson regression model.

The Level-2 portion of the model allows researchers to estimate the effects of substantive predictors on overall victimization as well the differential victimization measure, which permits tests of the typological and general theory predictions delineated earlier. The coefficients associated with the predictor variables included in the Level-2 equation report how much the logged incident rate ratio of violent-to-nonviolent victimization scores changes for each unit change in a predictor. For example, a significant positive coefficient indicates that a unit increase in a predictor variable increases the ratio of violent victimization incidents to nonviolent victimization incidents. A nonsignificant coefficient indicates that changes in the level of a predictor variable do not influence the contrast in violent to nonviolent victimization (i.e., no effect on differentiation in victimization). However, it should be noted that a predictor can affect the overall level of victimization ($\beta_{0j}$) even if it does not affect victimization type differentiation ($\beta_{1j}$). Finally, we note that the multilevel analysis utilized herein incorporates data from all subjects, giving greater weight to information from those with higher counts of victimization.

## Results

Table 2 reports the reliabilities for the overall victimization indices and for differential victimization. The overall victimization index for all 4 years falls short of the usual .70 alpha reliability standard for internal consistency, and tendencies to fall victim to some crime types and not others (i.e., differential victimization) turn out to be even less reliably measured. Osgood and Schreck (2007) concluded from their own similar results (where offending, not victimization, was the outcome) that a latent variable statistical method, such as their IRT-based approach, is therefore a desirable way to examine differential victimization. The IRT method has other advantages as well. While a small number of victimization studies have employed methods originally designed to estimate specialization in offending (e.g., Lauritsen and Davis-Quinet 1995), these methods cannot, in an aggregate sense, describe whether there is a statistically significant tendency across the sample for some individuals to become victims of violence or victims of nonviolence. Osgood and Schreck's (2007) technique allows researchers to use a $z$ test to assess whether sample members significantly deviate from population base rates in the distribution of victimization. Our Z scores (ranging between 10.3 and 15.5 across the four waves), calculated by dividing the variance ($\tau$) by its standard error, indicate that it is very unlikely ($p < .0001$) that the observed tendency for some victims to experience specific crime types is due to chance.

**Table 2** Reliability and variance of overall victimization and violent versus nonviolent differential victimization type

| | Wave 1 | Wave 2 | Wave 3 | Wave 4 |
|---|---|---|---|---|
| Overall victimization | | | | |
| Reliability | .52 | .54 | .54 | .45 |
| Variance ($\tau$) | 4.99 (.21) | 5.45 (.24) | 6.29 (.33) | 6.88 (.44) |
| Differential victimization | | | | |
| Reliability | .31 | .32 | .31 | .25 |
| Variance ($\tau$) | 5.89 (.38) | 6.46 (.42) | 6.92 (.54) | 8.05 (.78) |

Standard errors of $\tau$ in parentheses

The IRT-based approach also assigns individuals a score that indicates the number of standard deviations that their violent to nonviolent victimization ratio differs from the sample average. In the current study, we classify "violent victims" as those whose scores exceed +1.00, whereas those who with scores less than −1.00 were labeled "nonviolent victims"; individuals falling in-between those two scores are classified as "neither." Each individual's score is an estimate of their observed differentiation in terms of a concrete value (the sample average violent-to-nonviolent victimization ratio); this is useful because it gives us a picture of the victimization experiences of those at different points along the type differentiation continuum. "Violent victims," for instance, only refers to the relative position along this continuum. Such victims may in fact experience nonviolent victimization and perhaps even have a plurality of them (although they still would experience more violent victimization than the rest of the sample).

Table 3 provides a picture of the extent of victimization differentiation in the sample, using the scores just described. The data presented in this table focus only at victimization patterns among those at or above the 90th percentile in terms of their total number of victimization experiences (i.e., among those for whom victim type differentiation should be most reliably measurable). From these data, it is evident that in all four waves, adolescents with scores within one standard deviation of the mean (the "neither" or non-specialist category) reported more than twice as many nonviolent victimizations as violent victimizations—consistent with the usual finding that nonviolent victimization is the most common type. In comparison, those few individuals who are classified as "nonviolent victims" are distinguished most notably by the fact that they reported almost no violent

**Table 3** Observed violent and nonviolent victimization averages, by differential victimization type (frequent victims only)

| | Average scores for victimization items | | *N* |
|---|---|---|---|
| | Violent | Nonviolent | |
| *Wave 1* | | | |
| Differential victimization | | | |
| Violent (>+1 SD) | 4.0 | 2.4 | 60 |
| Neither (>−1 SD & <+1 SD) | 3.3 | 7.2 | 211 |
| Nonviolent (<−1 SD) | .6 | 10.0 | 10 |
| *Wave 2* | | | |
| Differential victimization | | | |
| Violent (>+1 SD) | 4.4 | 3.4 | 80 |
| Neither (>−1 SD & <+1 SD) | 2.7 | 7.3 | 152 |
| Nonviolent (<−1 SD) | .6 | 10.0 | 6 |
| *Wave 3* | | | |
| Differential victimization | | | |
| Violent (>+1 SD) | 4.1 | 4.0 | 38 |
| Neither (>−1 SD & <+1 SD) | 2.7 | 6.6 | 207 |
| Nonviolent (<−1 SD) | .0 | 6.7 | 44 |
| *Wave 4* | | | |
| Differential victimization | | | |
| Violent (>+1 SD) | 3.6 | 2.5 | 22 |
| Neither (>−1 SD & <+1 SD) | 2.8 | 6.0 | 180 |
| Nonviolent (<−1 SD) | .6 | 6.9 | 50 |

**Table 4** Correlations among Wave 1 and Wave 2 measures of overall victimization and differential victimization type

| | Overall victimization | | | | Differential victimization | | | |
|---|---|---|---|---|---|---|---|---|
| | Wave 1 | Wave 2 | Wave 3 | Wave 4 | Wave 1 | Wave 2 | Wave 3 | Wave 4 |
| Overall victimization | | | | | | | | |
| Wave 1 | 1.00 | | | | | | | |
| Wave 2 | .65 | 1.00 | | | | | | |
| | (.06) | | | | | | | |
| Wave 3 | .62 | .68 | 1.00 | | | | | |
| | (.07) | (.08) | | | | | | |
| Wave 4 | .56 | .61 | .70 | 1.00 | | | | |
| | (.07) | (.08) | (.09) | | | | | |
| Differential victimization | | | | | | | | |
| Wave 1 | .44 | .35 | .34 | .37 | 1.00 | | | |
| | (.06) | (.06) | (.07) | (.08) | | | | |
| Wave 2 | .39 | .48 | .40 | .37 | .57 | 1.00 | | |
| | (.06) | (.07) | (.08) | (.08) | (.07) | | | |
| Wave 3 | .44 | .48 | .64 | .48 | .53 | .58 | 1.00 | |
| | (.07) | (.08) | (.09) | (.09) | (.08) | (.08) | | |
| Wave 4 | .44 | .42 | .49 | .63 | .51 | .52 | .67 | 1.00 |
| | (.08) | (.09) | (.10) | (.11) | (.09) | (.09) | (.11) | |

Standard errors in parentheses

victimization experiences and ten or more nonviolent experiences during the previous year. Also of note, "violent victims," are not exempt from nonviolent victimization, but they do experience more violent crimes than nonviolent crimes.

Although an extensive literature (e.g., Pease 2007) documents that many individuals experience repeated victimizations over time, there is little research evidence about the degree to which the distribution of victimization types varies or is stable over time for individuals. Table 4 addresses this issue, providing estimates of the extent of stability in both the levels of overall victimization and in victim type differentiation. Similar to many longitudinal studies of offending, we find that victimization levels are relatively stable over time (see Gottfredson and Hirschi 1990). Adolescents who were frequently victimized at Wave 1 tended to also be frequent victims at Wave 2 and beyond. There also is notable stability in victimization types (i.e. the contrast between violent and nonviolent victimization), with moderately high correlations (ranging from .51 through .67). These correlations indicate that those who experienced a disproportion of violent victimization at Wave 1 also had a similar disproportion in the future.

Table 5 presents four cross-sectional models showing the predictors of (1) overall victimization and (2) victimization differentiation tendencies. Given the lack of prior research on differential victimization, we report four waves of results to bolster our confidence in the observed pattern of findings. There are no theoretical reasons, for instance, to expect females to experience a greater ratio of violence to nonviolence in Wave 1 but not Wave 2. Thus, if predictors have a significant effect at one wave but not others, we believe caution is warranted in making substantive conclusions regarding the importance of those measures. On the other hand, if findings are consistent across the waves, there should be

**Table 5** Relationships of independent variables to overall victimization and differential victimization type

| | Wave 1 | | | | Wave 2 | | | |
|---|---|---|---|---|---|---|---|---|
| | Overall victimization | | Differential victimization | | Overall victimization | | Differential victimization | |
| Independent variables | $\gamma$ | SE | $\gamma$ | SE | $\gamma$ | SE | $\gamma$ | SE |
| Male | .47* | .06 | .79* | .07 | .41* | .06 | .67* | .08 |
| African American | −.41* | .13 | −.47* | .16 | −.20 | .14 | −.33* | .15 |
| Age | .04 | .05 | .06 | .06 | .09 | .06 | .11 | .08 |
| Impulsivity | .40* | .04 | .04 | .05 | .36* | .05 | .16* | .06 |
| Violent subculture | .17* | .04 | .13* | .05 | .14* | .05 | .07 | .05 |
| Friends' violence | .24* | .06 | .45* | .07 | .30* | .07 | .26* | .09 |
| Guardianship | −.15* | .04 | −.14* | .04 | −.34* | .05 | −.19* | .05 |
| Self-reported violence | .56* | .06 | .38* | .06 | .47* | .06 | .27* | .06 |
| | Wave 3 | | | | Wave 4 | | | |
| | Overall victimization | | Differential victimization | | Overall victimization | | Differential victimization | |
| Independent variables | $\gamma$ | SE | $\gamma$ | SE | $\gamma$ | SE | $\gamma$ | SE |
| Male | .63* | .08 | .97* | .09 | .83* | .09 | 1.17* | .11 |
| African American | −.47* | .20 | −.45* | .20 | .09 | .21 | −.34 | .22 |
| Age | .01 | .07 | .00 | .07 | −.06 | .08 | −.09 | .09 |
| Impulsivity | .40* | .06 | .15* | .06 | .51* | .06 | .04 | .07 |
| Violent subculture | .28* | .06 | .12 | .06 | .26* | .07 | .09 | .08 |
| Friends' violence | .42* | .08 | .57* | .09 | .27* | .12 | .47* | .12 |
| Guardianship | −.32* | .06 | −.11 | .06 | −.46* | .07 | −.36* | .07 |
| Self-reported violence | .86* | .09 | .53* | .07 | 1.07* | .11 | .71* | .09 |

much greater confidence in offering conclusions regarding the predictors of victimization differentiation.

The results regarding overall victimization displayed in Table 5 essentially mirror those reported in other studies (e.g., Lauritsen et al. 1991, 1992; Schreck 1999; Stewart et al. 2006), with the coefficients following the standard interpretation for a Poisson-based regression model. Males who are impulsive (have low self-control), who agree with norms of violence and who commit a lot of violent crime experience higher levels of all types of crime victimization. For the most part the significant predictors of overall victimization in the Wave 1 remain significant predictors in the other three waves, with the race dummy variable being one exception to that pattern.

Turning next to the results for the victimization differentiation outcome, our typological theory-based expectations are that violent subcultural norms and being female will be positively associated with a greater violent-to-nonviolent victimization ratio. On the other hand, our general theory prediction is that the measure of impulsivity should exhibit similar effects on violent and nonviolent victimization, resulting in no significant effect on victimization type differentiation.

Contrary to our theoretical expectations, we find that males have a greater tendency to experience violent victimization over nonviolent victimization. This pattern holds consistently across all four waves. For instance, the results show that the violent/nonviolent victimization ratio for males is as much as 3.2 times the ratio for females (wave 4). That estimate implies that, all else constant, if females experienced a 1:1 ratio of violent to nonviolent victimizations, the corresponding ratio of violent to nonviolent victimizations for males would be 3.2:1. Impulsivity and subcultural values, in contrast, turned out to be inconsistent predictors of victimization type differentiation. In accordance with the subculture of violence theory, individuals who were more accepting of norms of violence had higher ratios of violent-to-nonviolent victimization counts in Waves 1, but not in any of the other three waves. For the measure of impulsivity, the Waves 1 and 4 analyses are consistent with predictions: each unit increase in impulsivity had no significant effect on the victimization type differentiation. However, in the Waves 2 and 3 analyses the ratio of violent to nonviolent victimizations multiplied by a statistically significant factor of 1.17 and 1.16 for each unit increase in impulsivity. That is to say, if an individual with the minimum score on impulsivity had a violent to nonviolent victimizations ratio of 1:1, a comparable subject with the maximum impulsivity score would have a ratio of approximately 1.6:1. In summary, findings for the substantive measures are not *consistently* supportive of the theorized hypotheses and findings regarding the impact of gender on victimization differentiation are opposite of expectations.

Our other control measures produced interesting and consistent results. Exposure to friend's violence is a significant predictor of a violent victimization tendency in each of the waves of data. Overall, a net increase in exposure to violent friends multiplies the ratio of violent to nonviolent victimizations, with point estimates ranging between 1.3 and 1.8. Higher scores in self-reported violence also are associated with a greater tendency for violent victimization. In Wave 1, each unit higher on the self-reported violent offending scale increases the ratio of violent to nonviolent victimization incidents by 46%. In Wave 4, the corresponding increase is 103%. Students who reported their teachers and classmates were more active in responding to stop violence at their schools reported a lower relative prevalence of violent victimization in three of the four waves. Although guardianship was not significant in Wave 3, its coefficient was not substantially smaller in magnitude from those found in most of the other waves. The performance of these controls is interesting in

**Table 6** Negative binomial regression results for violent and nonviolent victimization (Wave 1 only)

| | Separate negative binomial models | | | | IRT model | | | |
|---|---|---|---|---|---|---|---|---|
| | Violent victimization | | Nonviolent victimization | | Overall victimization | | Differential victimization | |
| Independent variables | $\beta$ | SE | $\beta$ | SE | $\gamma$ | SE | $\gamma$ | SE |
| Male | .59* | .05 | −.03 | .05 | .47* | .06 | .79* | .07 |
| African American | −.46* | .11 | −.03 | .11 | −.41* | .13 | −.47* | .16 |
| Age | .03 | .04 | .00 | .04 | .04 | .05 | .06 | .06 |
| Impulsivity | .39* | .04 | .34* | .04 | .40* | .04 | .04 | .05 |
| Violent subculture | .15* | .04 | .05 | .04 | .17* | .04 | .13* | .05 |
| Friends' violence | .21* | .03 | −.06* | .03 | .24* | .06 | .45* | .07 |
| Guardianship | −.20* | .05 | −.08* | .05 | −.15* | .04 | −.14* | .04 |
| Self-reported violence | .54* | .04 | .21* | .04 | .56* | .06 | .38* | .06 |

light of the fact that they generally perform consistently across all four waves of data, which is a stark contrast to the performance of the substantive measures.[7]

Since this research introduces a newer alternative statistical method for distinguishing the factors responsible for violent victimization versus nonviolent victimization, we include a supplementary analysis that uses the predictors from the Wave 1 analysis reported in Table 5 in *separate* negative binomial regression models predicting violent and nonviolent victimization counts, respectively. The results of these analyses are shown in the first two columns of Table 6. For comparative purposes, we also present the wave 1 IRT results from Table 5 in the third and fourth columns. This comparison helps to illustrate the benefits of the IRT-based approach for understanding victimization tendencies. Although running two separate negative binomial models clearly show predictors that influence one type of victimization and not the other, as is the case for gender, others variables like self-reported violence significantly affect both types of victimization. The problem is that the implications of the separate negative binomial model effects for comprehending victim type differentiation (i.e., specialization) are not immediately clear. In contrast, the IRT-model approach gives an immediate reading of the effect of self-reported violence on victimization type tendencies, while also indicating that the predictor significantly affects the overall level of victimization. Moreover, given that the negative binomial model shows that friends' violence predicts violent but not non-violent victimization, it is unclear whether this predictor affects an individual's overall level of victimization risk because there is conflicting evidence from the two models. But the IRT results show that having more violent friends raises one's overall level of victimization, but it does so primarily by increasing the relative risk of violent-to-nonviolent criminal victimization. Note also, that the IRT approach provides summary statistics (reported in Table 2) allowing researchers to report whether there are statistically significant differences in the ratio of victimization experiences across the entire sample. Other regression approaches cannot produce similar global estimates.

[7] To further verify the results, we estimated identical models with lagged predictors (i.e., Wave 1 predictors with Wave 2 outcomes). The pattern of results in these models is identical to those reported in the narrative and in Table 5.

## Conclusion

Many theories of victimization are typological, as are many theories of offending. They outline processes that distinguish those who are at risk of falling victim to a particular type of crime. One can see this emphasis on distinctiveness from the earliest victim typologies of von Hentig (1948) and Mendelsohn (1974) and in more recent formulations derived from work on subcultures of violence (Stewart et al. 2006). At the same time, a different class of victimization theory rejects such claims, like self-control theory (Schreck 1999), proposing instead that all forms of victimization result from the same general process. From this general theory perspective, the typological approach overcomplicates the explanation of victimization by assuming distinctiveness where in fact none exist—at least none that reach the level of substantive importance. The basic question, then, is what sort of theory best stands to advance our understanding of victimization: typological or general theories? Which of these theories best models reality? This is not a meaningless question. The field of criminology has wrestled with this issue for decades, treating it as a matter of importance (see Gottfredson and Hirschi 1990; McGloin et al. 2007; McGloin et al. 2011; Osgood and Schreck 2007; Sullivan et al. 2009); however, the debate has not carried over to the field of victimization. A main objective of the current study was to begin the process of addressing that shortcoming in the victimization literature. Using Osgood and Schreck's IRT-based method for detecting specialization, we first focused on identifying whether individuals meaningfully vary in the extent to which they experience violent and nonviolent forms of victimization. Then we investigated whether typological or general theoretical arguments are better at explaining observed patterns of differential victimization.

Our results show that on balance there are very few examples of *pure types* of victims, whether violent or nonviolent. The adolescents that our models estimated as "nonviolent" victims did report that almost none of their victimization experiences were violent ones. These results would appear to support a typological approach, at least so far as nonviolent victims are concerned, but note that a miniscule portion of the sample fell into this classification (across each wave, there were between 6 and 50 subjects whose experiences with victimization placed them in the "nonviolent victim" classification; see Table 3). Far more typical was a mixture of victimization experiences, with nonviolent victimization predominating, and even individuals who experienced a statistically significant ratio of violent to nonviolent victimizations were apt to encounter a number of nonviolent events as well. These results do not appear to justify a typological approach, at least along pure violent/nonviolent lines; to the degree that the results do appear supportive, the fact remains that a typological approach would only explain a small percentage of all victims.

On the other hand, victimization tendencies appeared to be stable and to some degree, predictable on the basis of the variables included in our analysis. Our theoretical predictions, however, generally turned out to be incorrect. Von Hentig (1948) proposed that females, owing to their physical weakness, were more apt to experience violence. This was not at all supported. Females were less likely to be victims overall, and those who did become victims were more likely than comparable males to report a ratio where the frequency of nonviolent victimization exceeded violent victimization. The subculture of violence approach is a perspective that appears to have great promise with respect to understanding violent victimization, carrying both qualitative and quantitative research support (Anderson 1999; Singer 1981; Stewart et al. 2006; Jacobs and Wright 2006). In our Wave 1 multivariate model, those who espoused values that favored violence, in fact, were significantly more likely to experience violent than nonviolent victimization; however, for researchers to have confidence that the effect of such values is genuine it should have a

similar effect in the other three waves of data. This turned out not to be the case, which indicates that the significance of subcultural values in Wave 1 may have been a function of chance. Impulsivity, or low self-control, was inconsistent so far as having a differential impact on specific forms of victimization at different points in time, which only indicates partial support for our research hypothesis. While more research is needed to determine whether a definitive pattern emerges for these important theoretical constructs, the influence of this combination of predictors so far as identifying what causal process makes the victim of violence unique is somewhat disappointing.

We can draw several substantive conclusions from these results. The tendency for some victims to experience differential ratios of violent to nonviolent victimization is genuine and unlikely to result from chance. It would seem to follow from this that some factor or combination of them ought to account for this. Since the experiences of most of the victims in our data (even those victimization outcomes significantly tended toward violence or nonviolence) show a combination of types of victimization, this rules out a pure typological approach. Instead, our results indicate that a more nuanced understanding of violent victimization is called for, or an understanding that acknowledges the importance of general processes that lead to victimization but that can also explain how specific factors can have disproportionate effects on the risk of violence even as they elevate the risk of nonviolent victimization. Given the paucity of research examining these questions, we can only tentatively rule out von Hentig's (1948) hypothesis about female weakness increasing vulnerability to assault violence. Note that the current study does not incorporate sexual victimization as an outcome measure; however, von Hentig was not specifically concerned with this outcome. A fair exploration of the contrast between sexual victimization and other types of crime introduces complexities that require more thorough treatment than we can offer here.

We can also tentatively rule out subculture of violence explanations as a reason some individuals experience a greater share of violent relative to nonviolent victimization. This is not to say that those who hold such values do not experience violent victimization. They do, and violence figures prominently; however, the distribution of violent to nonviolent victimization for such individuals is little different than is found among those whose approval of violence is far more weak. In this case, it may be profitable for subcultural theorists to give greater attention to the conditions in which local norms also allow for nonviolent victimization. For instance, Jacobs and Wright (2006) indicate in their ethnographic study of street people in St. Louis that many subjects responded to disrespect by retaliating in a "sneaky" fashion, such as by stealing or vandalizing property. This occurred when the street norms required some sort of retaliation but there were compelling reasons why a face-to-face aggressive response was not desired. Impulsivity, which was a risk factor associated with a general theory, part of the time behaved as expected and did not make any particular form of victimization more likely; however this was not the case in two of the four waves. In sum, we have a clear and stable pattern of differential victimization outcomes. There are theories of victimization that are designed to account for these patterns; however, nowhere did we find undeniable supportive evidence. This does not necessarily mean that the theories are wrong, this study, after all, is but the first to consider these questions, but these theories may require modification.

If victimization researchers nevertheless believe that factors exist that make violent victimization outcomes significantly more likely than nonviolent outcomes, their theories may have to look elsewhere for reasons. Although in the current study we incorporated only situational—routine activity and lifestyles—factors as control variables, they may nevertheless be a promising avenue for explaining differential victimization. Indeed, youth

who reported having more friends who engaged in a higher share of violence were more likely to report experiencing a greater relative prevalence of violent-than-nonviolent victimization. This result is consistent with the idea that "friends," owing to their convenient proximity to each other and for other reasons prey upon each other (see Schreck et al. 2004). Deviant lifestyles characterized by violence also corresponded with higher levels of violent victimization, supporting the idea that some violent offenders choose their moments poorly and inadvertently become victims (Sparks 1982). Our results also showed that for students who believe that their teachers and classmates respond to violence quickly and assertively, victimization is not only somewhat less likely overall, but violence also takes up a smaller share of the total victimization pattern. Theorists thus may wish to turn to the routine activities and lifestyles approach and attempt to more comprehensively develop the reasons why some situational factors not only elevate victimization risk overall, but have particular resonance with violent victimization.

Our research employs data from children and adolescents and not adults. It is reasonable to speculate that developmental factors are at work so far as what types of victimization are most likely to occur, where some measures are relevant for some age groups and not others. We have no theoretical reason to believe that the substantive measures incorporated in this research apply only to adolescents and no one else. But it is possible to conceive exceptions. For instance, the onset of adolescence and puberty among girls might instigate a shift toward a greater preponderance of sexual victimization relative to other types—factors that are clearly not applicable to very young girls. Intimate partner violence is another plausible exception (e.g., Felson 2006; Felson and Lane 2010). In view of both the limited state of the research and of our data, we were unable to examine such topics in detail. Yet, we believe that these topics are intriguing and deserving of further inquiry.

There remain many avenues for further exploration into the issue of whether making distinctions between types of victimization is a productive endeavor. Two additional research directions that could usefully advance the literature occur to us. First, research needs to pay careful attention to the measurement of victimization. In this manuscript, we created a simple violent/nonviolent victimization dichotomy. Many theorists and researchers make more fine-grained distinctions. For instance, Felson (1993, 2005) emphasized dispute versus instrumental as representing theoretically different forms of violence. Our measures unfortunately are not able to break down the motives underlying violent forms of victimization, and so our results cannot speak to this sort of taxonomy.[8] As noted earlier, sexual victimization, an outcome that we did not examine here, is likely to have qualities that differentiate it from not only nonviolent victimization but from other violent forms as well (e.g., Amir 1971). In all cases, the underlying theory is responsible for how the outcome should best be measured.

Second, researchers should be sensitive as well to the contexts in which theories operate. For instance, our results with respect to individuals holding violence-approving norms were inconclusive. But our sample was drawn from a diversity of contexts, including those where theorists would not expect violent subcultures to form, whereas most evidence about subcultures has come specifically from the most disorganized and crime-ridden areas of St. Louis, Philadelphia, and Chicago (e.g., Anderson 1999; Jacobs and Wright 2006; Thrasher 1927) or, in the case of the Southern subculture of violence, rural

[8] Assault, for instance, very plausibly is an expressive crime. But several ethnographers (e.g., Anderson 1999; Jacobs and Wright 2006) have reported how assaults serve very clear instrumental purposes; sometimes both motives come into play.

Appalachia (e.g., Ellison 1991). It could be that these areas represent unique contexts that would provide a clearer picture about the efficacy of many subculture-related predictors.

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