

Self-Control and the Consequences of Maladaptive Coping: Specifying a New
Pathway between Victimization and Offending

by

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ABSTRACT

The link between victimization and offending is well established in the literature, yet an unexplored causal pathway within this relationship is concerned with why some individuals engage in maladaptive coping in response to victimization. In particular, those with low self-control may be attracted to problematic yet immediately gratifying forms of coping post-victimization (e.g., substance use), which may increase their likelihood of violent offending in the future. Using three waves of adolescent panel data from the Gang Resistance Education and Training (GREAT) program, this research examines: (1) whether individuals with low-self control are more likely to engage in substance use coping following violent victimization, and (2) whether victims with low self-control who engage in substance use coping are more likely to commit violent offenses in the future. The results from negative binomial regressions support these hypotheses, even after controlling for prior offending, peer influences, prior substance abuse, and other forms of offending. The implications for integrating general strain and self-control theories, as well as for our understanding of the victimization-offending overlap, are discussed.

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INTRODUCTION

Violent victimization is a damaging experience that is associated with a host of negative personal and social outcomes. The distress victimization brings is critical and unpleasant, and victims often feel pressure to seek some relief to compensate for the serious injustices experienced (Agnew, 2002; Baron, 2003, 2004, 2009; Cullen, Unnever, Hartman, Turner, & Agnew, 2008; Hay & Evans, 2006; Hay & Meldrum, 2010). The consequences of victimization often depend on how people cope with their experience, one form of which may be offending. Indeed, it is well established in prior literature that an overlap exists between victimization and offending, where those most likely to be victims are also those most likely to offend (Agnew, 2002; Baron, 2009; Eitle & Turner, 2002; Gottfredson, 1981; Holtfreter, Reisig, Piquero & Piquero, 2010; Jennings, Higgins, Tewksbury, Gover, & Piquero, 2010; Lauritsen & Laub, 2007; Lauritsen & Quinet, 1995; Lauritsen, Sampson & Laub, 1991; Sampson & Lauritsen, 1990; Nagin & Paternoster, 1991; Ousey, Wilcox, & Fisher, 2011). Nevertheless, the roles of specific forms of deviant coping in the victim-offender overlap are rarely explored.

Coping can encompass a wide range of behaviors, some of which are considered effective and others of which are problematic. Agnew's (1992, 2006) general strain theory identifies a large number of coping mechanisms people may use in response to a negative experience such as victimization—behaviors ranging from physical exercise and confiding in peers, to revenge, alcohol consumption, and illicit drug use (see Agnew, 2006). The list is comprehensive and many forms

of coping are mentioned, yet why some individuals are more likely to adopt specific strategies over others remains an open empirical question (Agnew, Brezina, Wright, & Cullen, 2002; Mazerolle & Maahs, 2000; Tittle, Broidy, & Gertz, 2008). Although Agnew (2002) specified that variations in social control, peer influences, and social support can influence whether someone might cope with victimization through crime, little specificity is offered as to why these factors may lead to *particular* forms of maladaptive coping. Indeed, predicting specific ways in which people cope is, to a certain extent, a “hit-or-miss” strategy with such a lengthy roster. Based on principles of self-control theory, there is reason to believe that the particular ways in which people cope are not random.

As Gottfredson and Hirschi (1990) specify, those with low self-control are impulsive and frequently engage in risk-seeking behaviors that provide immediate gratification. Substance use, in particular, may be an attractive form of coping for individuals with low self-control, as it represents an instantly satisfying, short-term fix for alleviating distress from victimization (Baron, 2003, 2004). Existing research supports that those with low self-control are more likely to engage in both drug and alcohol use following incidents of general distress (Baron, 2003; Hay & Evans, 2006; Shirachi & Spirrison, 2006; Tangney, Baumeister, & Boone, 2004), still, the role of low self-control in substance use coping has not yet been explored in the context of the victim-offender overlap¹.

¹ A previous study conducted by Hay and Evans (2006) demonstrated that low self-control conditioned the influence of victimization on several delinquent outcomes which included substance use. Substance use, however, was operationalized to include tobacco, and the long-term consequences of substance use coping on further crime were not explored.

Drug and alcohol use carry consequences, and as coping mechanisms, do a poor job alleviating psychological discomfort related to trauma and personal victimization (Lightfoot & Barbaree, 1993; Pozzulo, Bennell, & Forth, 2006; Shirachi & Spirrison, 2006; Steele & Josephs, 1990; Zamble & Quinsey, 1997). Existing literature indicates that substance use and offending are positively linked (Boles & Miotto, 2003; Fagan, 1990; Felson, Burchfield & Teasdale, 2007; Horney, Osgood, & Marshall, 1995; Graham, West, & Wells, 2000; McGee, Barber, Joseph, Dudley, & Howell, 2005; Uggen & Thompson, 2003; Wells, Graham, Speechley, & Koval, 2005), yet few studies examine this relationship further (except see Slocum, Simpson, & Smith, 2005). Instead, substance use is often treated as an outcome analogous to delinquency or as a separate and unrelated outcome to offending (Slocum et al., 2005).

Given the associations between both low self-control and substance use to offending, it is crucial to understand how each of these elements play causal roles in the victim-offender overlap. The purpose of the present study is to assess the degree to which self-control conditions the effect of violent victimization on one form of coping, substance use, which in turn may influence violent offending. Three waves of panel data from the Gang Resistance Education and Training (GREAT) program (Esbensen, 2003) are used to carry out these objectives. In doing so, the current research has implications for understanding specific causal mechanisms within the victim-offender overlap, and for the integration of self-control and general strain theories.

VICTIMIZATION, COPING, AND OFFENDING

Victimization

Victimization is a highly personal, traumatic, and unjust experience. Accordingly, victimization is associated with a host of negative outcomes, including deleterious effects on self-efficacy, trust, and social interactions (MacMillan, 2001), as well as anxiety, depression, and anger (Agnew, 2002; Hagan & Foster, 2001; Hay & Evans, 2006). These psychological consequences have implications for the attitudes, beliefs, and actions that ultimately shape life-course trajectories (MacMillan, 2001). For victims of violence, these trajectories may include both substance use and offending (Agnew, 2002; Baron, 2009; Cullen et al., 2008; Hay & Evans, 2006; MacMillan, 2001; Miethe & Meier, 1994; Menard, 2002).

Researchers have struggled with disentangling the causal mechanisms at work between victimization and offending, partly because prior studies tend to examine these within two separate and distinct categories of “individual heterogeneity” and “state dependent” processes (Lauritsen & Laub, 2007). Explanations consistent with individual heterogeneity are those that claim individuals differ according to some relatively stable trait, correlated with both victimization and offending (Nagin & Paternoster, 1991, 2000; Lauritsen & Quinet, 1995), such as low-self control (Gottfredson & Hirschi, 1990; Schreck, 1999). Alternatively, state-dependent hypotheses suggest that experiences like victimization operate in such a way as to alter an individual’s future risk for offending. For example, under certain conditions, victimization creates pressures

for individuals to engage in retaliation or drug use (Agnew, 2002, 2006).

Unfortunately, interactive effects between two sets of explanations have failed to be explored. The assumption that these processes operate distinctly from one another may contribute to some of the confusion surrounding the victim-offender overlap.

Moreover, victimization is rarely examined as an independent variable. Researchers commonly treat victimization as an outcome predicted by substance use or offending (Esbensen & Huizinga, 1991; Felson & Burchfield, 2004; Lauritsen et al., 1991; Piquero, MacDonald, Dobrin, Daigle, & Cullen, 2005; Schreck et al., 2006), despite the magnitude of the impact violent victimization has on the lives of victims. Thus, the pathway from victimization to offending is less understood than its inversion, and the role of specific coping mechanisms in this pathway are even less clear.

Forms of Coping

Agnew (1992) stated that strains create numerous psychosocial problems for individuals, causing them to feel pressure to relieve such strains by engaging in coping strategies. Within this framework, both crime and deviance are methods for reducing or escaping from strains (Agnew, 1992). For example, some may alleviate the negative emotions that result from strains by seeking revenge against an abuser, or through substance use (Agnew, 2006). Certain forms of coping are assumed to be more effective than others, yet the long-term consequences of each are rarely explored in evaluations of general strain theory (Brezina, 1996, 2000).

Strains have multiple dimensions and different strains place different pressures on individuals to engage in coping. Unfortunately, coping mechanisms have been treated somewhat haphazardly in previous research. They have rarely been investigated systematically, and to an even lesser extent in the context of victimization (Slocum et al., 2005). Coping strategies have typically been evaluated in relation to a single cumulative measure of strain, where victimization is amassed with many other forms of negative experiences, such as poor financial status, death of someone close (including a pet), residential mobility, and problems in school (see Jang and Johnson, 2003). Agnew (2001) argued that victimization is worthy of study as a unique cause of crime, as it meets criteria outlined by general strain theory for negative events which are most likely to result in criminal or deviant coping. These criteria involve the violation of justice norms, centrality to an individual's life, and an association with low social control. Victimization may also reduce concern with internal and external sanctions because criminal victimization often provides a justification for deviance in the eyes of the victim. Following Agnew's reasoning it is clear that victimization is especially likely to create pressures for individuals to engage in deviant coping. In spite of these arguments, it still remains vague as to why certain victims select specific coping strategies over others.

Agnew (1992, 2006) identified drugs and alcohol as forms of coping; however, many other coping mechanisms are also specified by general strain theory. Agnew (2006) grouped these into three general types, emotional, behavioral, and cognitive, which encompass a substantial array of behaviors

ranging all the way from tactics such as meditation, physical exercise, denial, listening to music, and confiding in peers, to alcohol consumption, aggression, revenge, and illicit drug use (see Agnew, 2006). Although thorough, Agnew's lengthy roster of coping strategies is problematic. As the list grows, it becomes increasingly difficult to explain how and why certain individuals choose to cope in particular ways, or to understand which forms of coping are most relevant to the study of crime. On that note, for reasons to be elaborated below, theorists such as Gottfredson and Hirschi (1990) would suggest that the list does not need to be nearly as long.

Low Self-Control and Deviant Coping

One of the strongest known behavioral correlates of crime is self-control (Pratt & Cullen, 2000). As originally specified by Gottfredson and Hirschi (1990), self-control theory argues that individuals with low self-control are predisposed to engage in a host of criminal and analogous behaviors. Individuals who lack self-control tend to pursue their own self-interests without consideration of the potential long-term consequences of their behavior, and are more prone to make decisions that result in negative life outcomes (Baron, 2003, 2004; Evans, Cullen, Burton, Dunaway, & Benson, 1997; Higgins & Tewksbury, 2006; Holtfreter, Reisig, & Pratt, 2008; Pratt & Cullen, 2000; Schreck, Stewart, & Fisher, 2006; Sellers, 1999; Stewart, Elifson, & Sterk, 2004; Tangney et al., 2004). Furthermore, those with low-self control are impulsive and frequently engage in risk-seeking behaviors which provide immediate gratification. Certain forms of

deviant coping may therefore be especially alluring for individuals with low self-control, particularly substance use.

Previous research demonstrates that those with low self-control are more likely to cope with general forms of distress through the use of drugs and alcohol (Baron, 2003; Shirachi & Spirrison, 2006). In addition, Tangney and colleagues (2004) also noted that those with low self-control experience higher rates of anxiety, hostile anger, phobic anxiety, and problems with self-acceptance, which may intensify the pressure they feel to seek immediate forms of coping. Those who are higher in self-control may be able to delay gratification and to seek out forms coping which may be less effective in the short-term, but more effective in the long-term, such as victim support groups, counseling, and therapy. Moreover, those low in self-control may be less likely, and less able, to restructure their lifestyles after experiencing victimization to avoid situations where others are engaging in risky behaviors and other dangerous activities (Schreck, 1999). This increases the likelihood of having easy access to drugs and alcohol, and of participating in events conducive to violence (Lauritsen et al., 1991; Sampson & Lauritsen, 1990; Sellers, 1999; Schreck et al., 2006).

As a coping mechanism, substance use may represent an immediately gratifying, short-term fix for negative strains relating to victimization (Baron, 2003). Substance use is not an effective form of coping, especially in the long-term. Although immediate “soothing” may take place, the effects are short-lived and may actually contribute to more problems (Boles & Miotto, 2003; McClelland & Teplin, 2001; Steele & Josephs, 1990). Substance use is typically

characterized in the psychology literature as a deficient coping strategy used to alleviate pain, anxiety, and psychological distress, as it often results in a worsening cycle of negative emotions, maladaptive reactions, and antisocial behavior (see Zamble and Quinsey's 1997 coping-relapse model of criminal recidivism). The criminological literature has well-established that substance use is related to violent offending (Boles & Miotto, 2003; Fagan, 1990; Felson, Burchfield & Teasdale, 2007; McClelland & Teplin, 2001; Wells et al., 2005), as those with substance abuse problems are more likely to engage in violence and assault (Lightfoot & Barbaree, 1993; Pozzulo et al., 2006; Swanson, 1994).

In short, substance use as a form of deviant coping puts individuals at risk for negative outcomes, the most serious of which is violent offending. It is essential to understand how both low self-control and substance use play a role in the victim-offender overlap. In particular, it is possible that those with low self-control may be more likely to choose to cope with victimization through substance use, where those with high self-control are able to find alternative, less-immediate, and more effective coping mechanisms—strategies which carry much less severe consequences.

CURRENT FOCUS

The key focus of the present study is to use self-control and problematic coping strategies to better understand the victim-offender overlap. To do so, the current examination proceeds in two steps. First, the effects of low self-control and victimization on deviant coping (i.e., substance use) are investigated. Given the stress of victimization and the instantly gratifying appeal substance use may

have as a coping strategy among individuals with lower levels of self-control, it is expected that these individuals will be more likely to engage in drug and alcohol use post-victimization. Second, the consequences of violent victimization, low self-control, and substance use coping for later violent offending are explored. Given the discussion above, it is expected that victims with low self-control may be more likely to engage in violent offending, and that substance use may also be an important predictor of this form of criminality. By conducting these examinations, the current study not only contributes to understandings of victimization and offending, but it also helps to specify strain and coping mechanisms by integrating both self-control and general strain theories.

DATA AND METHODS

Data

This research uses three waves of panel data from the national evaluation of the Gang Resistance Education and Training (GREAT) program (1995-1999) (Esbensen, 2003). Although the primary purpose of collecting this data was to evaluate the GREAT program, this is one of the few data sets available where it is possible to assess the relationships between victimization, self-control, substance use, and offending longitudinally. The initial data collection (1995) sampled 3045 sixth and seventh graders attending 22 schools in six cities: Philadelphia (PA), Portland (OR), Phoenix (AZ), Omaha (NE), Lincoln (NE), and Las Cruces (NM). These cities represent a diverse range of contexts in terms of city size and location, and the principal investigators maintain that the GREAT data should be

representative of students attending public schools in a variety of environments (Esbensen, 2003).

The second, third, and fourth waves of panel data are used² (accordingly referred to as time 1, time 2, and time 3 throughout), where response rates for each of the three waves equal 80%, 86%, and 76%, respectively (Esbensen, 2003). Noncodable responses, attrition, and missing data across waves on key variables of interest resulted in a sample of 862 individuals. Attrition across waves is not unusual in longitudinal data; however, previous studies report that individuals lost after wave 1 in the GREAT data demonstrated higher levels of victimization and delinquency than those who participated in later waves (Agnew et al., 2011; Schreck et al., 2006). Furthermore, item nonresponse rates in the GREAT dataset are higher among those with lower levels of self-control (Watkins & Melde, 2007). Findings reported below may represent conservative estimates because those scoring highest on key variables of interest may not be included in the sample.

Dependent Variables

Violent offending is captured using measures at time 3 reflecting the number of times in the past 6 months respondents reported that they committed the following violent acts: (1) “hit someone with the idea of hurting them;” (2) “used a weapon or force to get money or things from people;” and (3) “attacked someone with a weapon.” Responses on all three are summed to produce a total

² These particular waves are selected to maintain consistency across measures over time. Wave 1 contains items which ask respondents to report incidents of substance use, victimization, and offending during the last 12 months, whereas all subsequent waves ask respondents to report during the last 6.

count of violent offenses. To reduce the potential negative consequences of outliers, violent offending is capped at a maximum of 50 incidents (less than one percent of the sample exceeded this threshold). Only a portion of the sample (36.8%) reported committing at least one violent offense in the past 6 months, with a median of zero. Details on the specific survey items used to create count variables are included in Appendix A.

Substance use at time 2 is constructed using three observed measures capturing the number of times each individual used the following substances in the past 6 months: (1) alcohol, (2) marijuana, and (3) other illegal drugs. These measures are combined to construct one measure of total substance use. Similar to violent offending, the median of substance use is zero, as a substantial portion of the sample (69.3%) reported no drug or alcohol use in the past 6 months. Accordingly, this variable also ranges from 0 to 50 incidents, as less than one percent of the sample exceeded this count. Consistent with the research hypotheses, substance use is treated as an outcome variable in the first set of multivariate regression models only, and is then considered an independent variable used to predict violent offending in subsequent models.

Independent Variables

Violent victimization is measured using three items that capture the number of times each individual was a victim of each of the following acts during the 6 months prior to the time 1 interview: (1) “hit by someone trying to hurt you;” (2) “attacked by someone with a weapon or force to get money or things from you;” and; (3) “attacked by someone with a weapon or by someone trying to

seriously hurt or kill you.” These responses are summed to construct one measure of total violent victimization, where scores range from 0 to 50 victimization episodes. The average respondent was not a victim of violence during the past 6 months, with 34.7% reporting victimization ($M = 1.12$).

Low self-control is an 8-item composite measure from time 1, originally derived from Grasmick, Tittle, Bursik, and Arneklev’s (1993) 24-item Low Self-Control Scale. Although the full Grasmick et al. (1993) scale is not available in these data, the 8 items capture key dimensions of risk-seeking and impulsivity—dimensions which have consistently been shown to be related to various criminal and analogous behaviors (Pratt & Cullen, 2000). These items include: (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;” and (8) “excitement and adventure are more important to me than security.” Respondents indicated their agreement to these items using a 5-point Likert-type scale (1= strongly disagree, to 5 = strongly agree). Responses are summed, producing a range of scores from 8 to 40 ($\alpha = .81$), where higher scores indicate lower self-control ($M = 21.94$).

Control Variables

Non-violent offending at time 3 is included to control for other forms of offending within the same wave as the violent offending outcome. This scale consists of four items reflecting how many times in the past 6 months each respondent had: (1) “stolen or tried to steal a motor vehicle;” (2) “purposely damaged or destroyed property that did not belong to you;” (3) “stolen or tried to steal something worth more than \$50;” and (4) “stolen or tried to steal something worth less than \$50.” Responses are summed to produce the total of non-violent offenses, which also ranges from 0 to 50 incidents. Less than one percent of the sample reported committing more than 50 non-violent offenses. *Prior violent offending* (time 2) serves as a control variable in the models predicting violent offending to account for changes in committing violent acts, constructed using the same method employed for the violent offending at time 3. *Prior substance use* (time 1) serves as a control for changes in substance use for models predicting substance use at time 2.

Several variables are also included to control for deviant peer influences, which Agnew (1992) suggests encourage deviant coping responses. Criminal peers reinforce criminal behavior (Akers, 1998; Pratt et al., 2010) and individuals who associate with delinquent peers are more likely to be in situations where others are engaging in risky behaviors and other dangerous activities, increasing the likelihood of offending, as well as access to drugs and alcohol (Schreck, Fisher, & Miller, 2004). Respondents indicating that their *friends use drugs/alcohol* (1 = yes, 50.81%; 0 = no) report having current friends at time 2

who used one or more of (1) alcohol; (2) marijuana; or (3) other illegal drugs in the past 6 months. This measure of peer drug and alcohol use is included as a control in models predicting substance use only. Those indicating that their *friends offend* (1 = yes, 69.72%; 0 = no) report having friends at time 3 who engaged in at least one non-violent or violent offense in the past 6 months, operationalized by indicators described above. Measures of respondents' *gang membership* are also included for both time 2 (1= yes; 3.13%) and time 3 (1= yes; 2.78%), although time 2 gang membership is only included in the models predicting substance use.

Demographic control variables are included in the multivariate analyses which may have associations with victimization, low self-control, and substance use: *age* (respondent's age in years at time 1), *male* (1 = male, 46.75%; 0 = female), *black* (1 = yes, 14.97%; 0 = otherwise), *hispanic* (1= yes, 14.97%; 0 = otherwise), and *other minority* (1= yes, 11.37%; 0 = otherwise), where *white* serves as the omitted reference category.

Analytic Strategy

To appropriately test the research hypotheses exploring how those with low self-control respond to being victimized, an interaction term is created using *violent victimization* and *low self-control*. Each variable is first centered by subtracting the mean from all observations, and then the two variables are multiplied together to form the interaction. Analyses begin by estimating bivariate relationships (Pearson's *r*) between key theoretical measures of interest (i.e., low self-control and victimization) and the dependent variables (i.e., substance use,

and violent offending). Both dependent variables are counts, with a mode of zero. Since descriptive statistics indicate that the distributions of substance use ($M = 2.63$, variance = 64.86) and violent offending ($M = 2.46$, variance = 53.18) are overdispersed, negative binomial regression models are used to test both research hypotheses (Long, 1997). For the first set of multivariate analyses, negative binomial regression models are used to estimate the effects of victimization for those with low self-control, net of controls, on engagement in substance use. Analyses then proceed by estimating a second set of multivariate regression models, again using negative binomial regression, to explore the effects of victimization, low self-control, and substance use on violent offending. To more easily interpret whether the effects of victimization on substance use and violent offending are conditioned by low self-control, each set of multivariate regression analyses contains two models—with and without the interaction term. Unstandardized regression coefficients and robust standard errors are presented.

RESULTS

Bivariate Associations

Descriptive statistics and bivariate correlations among all variables used are presented in Table 1. As anticipated, key independent variables are positively associated with the dependent variables of interest. Concerning the first research hypothesis, victimization ($r = .12$) and low self-control ($r = .30$) are each correlated with substance use. Pertaining to the second hypothesis, substance use

Table 1: Descriptive Statistics and Bivariate Correlations ($N = 862$)

	Y2	Y1(X1)	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16
Y2	Violent offending	--															
Y1(X1)	Substance use	.55*	--														
X2	Low self-control ^a	.20*	.30*	--													
X3	Victimization ^a	.18*	.12*	.16*	--												
X4	Low self-control x Victimization	.19*	.14*	.13*	.47*	--											
X5	Prior substance use	.15*	.27*	.21*	.07*	.07*	--										
X6	Prior violent offending	.47*	.40*	.20*	.23*	.08*	.21*	--									
X7	Non-violent offending	.46*	.38*	.23*	.10*	.04*	.21*	.23*	--								
X8	Friends offend (1 = yes)	.20*	.16*	.24*	.10*	.02	.11*	.17*	.20*	--							
X9	Gang membership T3 (1 = yes)	.29*	.20*	.14*	.03	.02	.18*	.11*	.31*	.10*	--						
X10	Gang membership T2 (1 = yes)	.15*	.24*	.05	.03	.02	.24*	.20*	.20*	.10*	.29*	--					
X11	Friends use drugs/alcohol (1 = yes)	.16*	.26*	.28*	.06	.03	.29*	.21*	.15*	.28*	.11*	.14*	--				
X12	Age	.00	.03	.09*	.00	-.03	.15*	.01	.03	-.01	.05	.04	.06	--			
X13	Male (1 = yes)	.14*	.11*	.18*	.17*	.08*	.03	.15*	.16*	.22*	.01	.06	-.05	.01	--		
X14	Black (1 = yes)	.02	.07*	.08*	.01	.01	.01	.01	.05	.03	.03	.04	-.11*	.01	-.01	--	
X15	Hispanic (1 = yes)	-.04	.04	.07*	-.03	-.03	.08*	.01	.02	.04	.01	.06	.14*	.06	-.04	-.18*	--
X16	Other minority (1 = yes)	.02	-.03	.00	-.02	.00	-.05	-.07*	.05	.00	.09*	.00	-.05	-.13	-.04	-.15*	-.15*
	Mean =	2.5	2.6	.00	.00	3.1	1.0	2.0	1.7	.70	.03	.03	.51	12.3	.47	.15	.15
	SD =	7.3	8.1	6.0	3.1	30.0	4.6	5.4	5.8	.46	.16	.17	.50	.62	.50	.36	.36

NOTES: * $p < .05$, two-tailed test

^a Mean-centered.

($r = .55$), victimization ($r = .18$), low self-control ($r = .20$) are each significantly correlated with violent offending at the .05 level.

Multivariate Regression Models

Tables 2 and 3 each contain two multivariate regression models, estimated using negative binomial regression analysis. Although correlation coefficients between variables are low enough to suggest collinearity is not a problem, both tolerance estimates and variance inflation factors are produced to more accurately rule out potential collinearity issues (Mason & Perrault, 1991), seen in Appendix B. Tolerance factors among all variables included in the regression models exceed .65, and variance inflation factors are below 1.5—thresholds typically used to determine when collinearity may be problematic (Wooldridge, 2009). According to this evidence, observed correlations between the independent variables should not result in biased estimates or inefficient standard errors from multicollinearity. Model χ^2 statistics and significant likelihood ratio tests of alpha indicate that each of the models fit the data well.

The first set of models in Table 2 tests the first research hypothesis, where substance use is regressed on the independent variables. Model 2 contains the low self-control and victimization interaction term of interest. Both models are included in order to more accurately compare the effects of low self-control and victimization on the outcome, independent of their interaction. Focusing on the non-interactive effects, model 1 demonstrates that low-self control increases the likelihood of substance use ($b = .102, p = .000$), but that victimization alone does not independently create pressures for all individuals

Table 2: Negative Binomial Regression Models Predicting Substance Use at Time 2 ($N = 862$)

Variables	Substance use					
	Model 1			Model 2		
	<i>B</i>	SE	<i>z</i>	<i>b</i>	SE	<i>z</i>
Low self-control	0.10	0.02	4.52**	0.10	0.02	4.44**
Victimization	0.07	0.06	1.15	0.06	0.05	1.18
Low self-control x Victimization	--	--	--	0.01	0.00	2.09*
Prior substance use	0.03	0.02	1.67	0.04	0.02	1.72
Gang membership	1.29	0.40	3.26**	1.24	0.39	3.20**
Friends use drugs/alcohol	2.23	0.29	7.56**	2.27	0.30	7.48**
Age	0.37	0.19	1.92	0.40	0.20	2.04*
Male	0.41	0.22	1.86	0.42	0.22	1.90
Black	0.22	0.42	0.52	0.18	0.43	0.43
Hispanic	0.15	0.44	0.36	0.17	0.44	0.39
Other minority	- 0.74	0.34	- 2.18*	- 0.74	0.34	- 2.15*
Constant	- 6.02	2.33	- 2.58**	- 6.45	2.37	- 2.72**
	Model $\chi^2 =$	265.20**		272.12**		
	McFadden's $R^2 =$	0.10		0.11		

NOTE: Entries are unstandardized coefficients (*b*) and robust standard errors.

* $p < .05$; ** $p < .01$.

to engage in this activity ($b = .072, p = .252$). Consistent with theoretical expectations, the key finding of model 2 is the interaction term ($b = .006, p = .037$), demonstrating that victims of violence with low self-control are significantly more likely to engage in substance use post-victimization. Furthermore, having friends who engage in drug and alcohol use, gang membership, and age also emerge as significant and positive predictors. Other minority (containing those not included in categories of white, black, or

Table 3: Negative Binomial Regression Models Predicting Violent Offending at Time 3 ($N = 862$)

Variables	Violent offending					
	Model 1			Model 2		
	<i>b</i>	SE	<i>z</i>	<i>b</i>	SE	<i>z</i>
Substance use	0.04	0.01	3.50**	0.03	0.01	2.76**
Low self-control	0.02	0.01	1.46	0.02	0.02	1.26
Victimization	0.05	0.03	2.08*	0.06	0.02	2.49*
Low self-control x Victimization	--	--	--	0.01	0.00	3.13**
Prior violent offending	0.05	0.01	4.39**	0.05	0.01	4.38**
Non-violent offending	0.05	0.01	3.87**	0.04	0.01	3.51**
Friends offend	1.89	0.30	6.24**	1.73	0.32	5.51**
Gang membership	1.19	0.31	3.84**	1.19	0.32	3.68**
Age	0.33	0.12	2.80**	0.32	0.12	2.64**
Male	0.18	0.16	1.12	0.18	0.16	1.13
Black	0.74	0.23	3.21**	0.83	0.24	3.41**
Hispanic	0.03	0.25	0.11	0.05	0.25	0.21
Other minority	- 0.11	0.23	- 0.47	- 0.16	0.21	- 0.77
Constant	2.16	1.52	1.42	0.89	1.63	0.54
	Model $\chi^2 = 303.69^{**}$			306.72**		
	McFadden's $R^2 = 0.13$			0.13		

NOTE: Entries are unstandardized coefficients (*b*) and robust standard errors.

* $p < .05$; ** $p < .01$.

Hispanic) emerges as a significant negative predictor of substance use, which is also consistent with expectations.

The second set of multivariate regression models in Table 3 tests the second research hypothesis, this time including substance use as an independent variable to predict violent offending. Similar to the prior set of models, model 1 does not contain the interaction term of interest included in model 2. As

expected, two key variables emerge as significant predictors of violent offending, seen in model 2: substance use ($b = .027, p = .006$), and the low self-control and victimization interaction term ($b = .012, p = .002$). Substance use and victimization among individuals with low self-control are both predictive of violent offending. Non-interactive effects in model 1 of Table 3 demonstrate that victimization is a significant predictor of offending ($b = .052, p = .038$), while low self-control is not ($b = .021, p = .144$).³ Finally, having friends who commit crimes, gang membership, same-wave non-violent offenses, and prior violent offending also emerge as significant and positive predictors for violent offending, along with age and the race category *black*, which are consistent with theoretical expectations.

DISCUSSION

General strain theory has contributed to current understandings of victimization and other negative stimuli by recognizing that these events take an emotional and psychological toll on individuals, creating pressures to engage in coping. Agnew has remained open to revisions of his theory; however, in doing so, a rather lengthy roster of coping mechanisms has since developed. Coping is said to encompass a wide range of behaviors, and general strain theory does little

³ Recent research conducted by Agnew et al. (2011) using the GREAT data demonstrated that victimization causes a decrease in self-control longitudinally. It is recognized that the time 1 measure of self-control in the current study may not be capturing this variability over time, which may explain why it is not predictive of violent offending at time 3. Although beyond the scope of the present examination, a supplementary analysis substituting the time 1 measure of low self-control in model 1 of Table 3 with a time 3 construct demonstrates that low self-control is a significant predictor of violent offending within the same wave ($b = .073, p = .000$).

to specify why some individuals choose to engage in certain forms of coping over others—especially forms of coping which carry harmful consequences. Prior research has largely overlooked substance use as a specific form of coping in response to victimization, despite its theoretical relevance to the victim-offender overlap. Moreover, low self-control has rarely been integrated into understandings of how people respond to victimization. Through testing a previously unexplored causal pathway involving the conditioning effects of self-control on the relationship between victimization, substance use coping, and offending, implications for theoretical advancements in self-control and general strain theories emerged, especially for directions in the study of the victim-offender overlap. Accordingly, four major conclusions are warranted.

First, victimization is worthy of study as an independent variable. While those who study victimization are likely to have already “bought into” this idea, much of mainstream criminology still treats victimization primarily as an outcome of other criminogenic processes. To be sure, the victim-offender overlap has typically explored how offending leads to victimization (e.g., Lauritsen et al., 1990), and rarely how victimization leads to offending. While it is undeniably important to understand the contexts which influence the likelihood of victimization, it is also crucial to understand the consequences of this event on the lives of victims. By only considering victimization as an outcome of substance use or offending, this impact is masked considerably. Guided by the current work, future research may explore how the impact of victimization influences individuals’ routine activities. Low self-control and substance use/risky lifestyles

have proven useful in predicting victimization (Forde & Kennedy 1997; Higgins et al., 2009; Holtfreter et al., 2008; Schreck, 1999; Schreck et al., 2006; Stewart et al., 2004), yet the mechanisms at work when victimization is treated as an independent variable are unclear.

Second, the results demonstrate that low self-control is paramount to understanding specific forms of deviant coping, especially in response to victimization. Although victimization is a highly negative experience associated with universal harms, low self-control shapes people's responses to victimization in unique ways. Those with low self-control may be even less prone to delaying gratification after being victimized, above and beyond their normal levels of impulsivity. Findings were consistent with previous research demonstrating that low self-control conditions the effect of victimization on substance use (Hay & Evans, 2006), which the present study expanded upon by considering the impact of deviant coping on violent offending. Gottfredson and Hirschi's (1990) arguments were supported, in that individuals who lack self-control tend to engage in risky behaviors associated with negative life outcomes. The understanding of the role of low self-control in the victim-offender overlap has important implications regarding appropriate support interventions for victims of violence to cope appropriately with their experience. Awareness of self-control principles may help to guide programs and services for victim-coping, providing other outlets to deal with psychological distress as an alternative to substance abuse (Piquero, Jennings, & Farrington, 2010).

Third, although violent offending was investigated to highlight the severity of consequences for substance use coping, these effects may vary considerably when interactive effects of gender are accounted for. Women commit less violent offenses than men, are less exposed to strains conducive to crime and criminal coping (Broidy & Agnew, 1997) and are generally higher in self-control than men (Gottfredson & Hirschi, 1990). The victim-offender overlap may be experienced differently for women, and may predict alternate forms of offenses (Daly, 1992; Slocum et al., 2005). Feminist criminologists argue that the pathways leading to women's offending are fundamentally different from those of men, often representing serious abuse and victimization histories (Armstrong & Griffin, 2007; Belknap, 2007; Broidy, 2001; Gilfus, 1992; Sterk, 1999; Stewart et al., 2004). Accordingly, victimization may be experienced differently across genders, and forms of deviant coping may carry different consequences between men and women (Broidy & Agnew, 1997). Evaluations of gender and coping are largely lacking, even within the stress-coping literature.

Lastly, the role of substance use in the victim-offender overlap deserves further attention. Although general strain theory provides a useful theoretical framework for conducting these investigations, it does not at all underscore the importance of this form of coping. Even though substance use is undoubtedly not the only coping strategy which can lead to serious crime—others include joining a gang or carrying a handgun (see Apel & Burrow, 2011)—it is unclear why so many forms of coping are named by general strain theory. This lengthy list is made even more problematic since one of the factors most relevant to the study of

crime (self-control) is not emphasized as one of the more important conditioners of strain on maladaptive coping. By considering self-control, scholars can narrow considerably the number of factors that may influence whether individuals will cope with various forms of strain in healthy or unhealthy ways. Arguably, Gottfredson and Hirschi's (1990) general theory of crime and Agnew's (1992) general strain theory represent opposite ends of the spectrum in terms of their willingness to consider contingencies. In attempting to accommodate numerous influences, Agnew's theory has become nuanced to the extent that it has lost some of its distinctive predictive power, while Gottfredson and Hirschi have been less than responsive to the plausibility that their theory ignores contextual effects on low self-control (Winfrey, Taylor, He, & Esbensen, 2006). Accordingly, both theories may benefit from a certain degree of integration, while also advancing work on the victim-offender overlap.

In the end, the relationship between serious victimization and offending is complex. Disentangling the causal mechanisms at work between being a victim of violence and becoming a serious offender are crucial, and the role of coping is fundamental to this process. By integrating both general strain and self-control explanations into the victim-offender overlap, we can more readily begin to study and to understand the serious impact of victimization on the lives of victims. Recognizing major predictors of serious offending among high-risk groups are essential for the effective prevention of future violence.

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APPENDIX A

VARIABLE CONSTRUCTS FROM SURVEY ITEMS

Variables	% > 0	<i>M</i>	<i>SD</i>	<i>α</i>
Violent offending	36.8	2.46	7.30	.67
Times hit others	35.9	2.01	6.34	
Times robbed others	2.3	.12	1.79	
Times attacked others	5.6	.27	2.56	
Substance use	30.7	2.63	8.05	.56
Times used alcohol	28.2	2.00	7.05	
Times used marijuana	12.7	1.04	5.35	
Times used other illegal drugs	3.3	.14	1.37	
Violent victimization	35.7	1.12	3.14	.48
Time been hit	34.9	1.00	2.93	
Times been robbed	3.6	.07	.53	
Times been attacked	3.3	.05	.32	
Non-violent offenses	28.2	1.71	5.68	.64
Times destroyed property	19.8	.78	3.77	
Times stole/tried to steal motor vehicle	3.1	.07	.62	
Times stole something more than \$50	5.2	.22	2.02	
Times stole something less than \$50	17.9	.81	3.75	
Prior violent offenses	41.7	2.04	5.40	.63
Times hit others	41.1	1.81	4.87	
Times robbed others	3.5	.11	1.01	
Times attacked others	6.0	.15	1.01	
Prior substance use	20.3	1.02	4.61	.58
Times used alcohol	18.9	.80	3.45	
Times used marijuana	5.0	.32	3.20	
Times used other illegal drugs	1.1	.04	.69	

NOTE: N=862

APPENDIX B

TOLERANCE LEVELS AND VARIANCE INFLATION FACTORS

Variables	Substance use		Violent offending	
	VIF	Tolerance	VIF	Tolerance
Substance use	--	--	1.41	.708
Low self-control	1.20	.836	1.21	.824
Victimization	1.34	.747	1.39	.720
Low self-control x Victimization	1.30	.767	1.31	.761
Prior substance use	1.12	.892	--	--
Prior violent offending	--	--	1.28	.781
Non-violent offending	--	--	1.31	.761
Friends offend (1= yes)	--	--	1.14	.880
Gang membership T2 (1=yes)	1.08	.923	--	--
Gang membership T3 (1 = yes)	--	--	1.14	.876
Friends use drugs/alcohol (1 = yes)	1.14	.874	--	--
Age	1.03	.969	1.03	.967
Male (1= yes)	1.08	.929	1.12	.896
Black (1= yes)	1.08	.923	1.08	.922
Hispanic (1= yes)	1.09	.914	1.08	.924
Other minority (1= yes)	1.08	.923	1.10	.908
	<i>M</i> =	1.14	1.20	

