

Florida State University College of Criminology and Criminal Justice
Ph.D. Comprehensive Examination in Research Methods and Statistics, Spring, 2018
Day One of the Exam, March 28, 2018: 8:30am to 12:45pm

INSTRUCTIONS

Answer one question from each of the two sections below. Please notify the proctor when you are finished. Please note: Once a student takes possession of the examination at the start of the exam period, this constitutes an attempt at taking the exam, regardless of whether the student completes the exam, hands in any answers, or remains for the full exam period.

I. DATA GATHERING METHODS

1. What counts as “low” response rate sufficient to cause problems? What are the problems that result from low response rates on surveys? How can these problems be addressed?
2. Criminal behavior is often measured by three basic methods: self-reports of offenders, surveys of victims, and “official records.” Compare one of the major correlates of crime—age, sex, and race—across all three of these methods. Indicate and explain areas of agreement and disagreement in each method. Which is the best measure? Explain.

II. RESEARCH DESIGN

3. Describe the primary differences between experimental and quasi-experimental designs. Give as many reasons as you can think of why experimental designs are usually considered superior with regard to internal validity.
4. You have been asked to design a study examining whether juveniles with low self-control engage in more delinquent behavior. Provide a detailed description of your proposed research design, including sampling method, data gathering approach, and key variables you would measure. Also indicate which method of statistical analysis you would use. Finally, assess some strengths and weaknesses of your design with regard to internal and external validity.

Florida State University College of Criminology and Criminal Justice
Ph.D. Comprehensive Examination in Research Methods and Statistics, Spring, 2018
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INSTRUCTIONS

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III. STATISTICS

1. Describe the concept of multicollinearity, including its common sources, its consequences, how to assess it, and how to reduce its impact.
2. What problems result when using data that are clustered (e.g., individuals clustered within schools)? What approaches can be taken to address these problems?

IV. DATA INTERPRETATION

3. Interpret the findings of the attached article by Wright et al. This means that you should tell what the results mean with respect to the goals of the researchers and what they were trying to find out, just as if you were writing the Results and Discussion/Conclusion sections of the journal article. Do not merely repeat in words what is already shown in numbers in the tables. What conclusions would follow from the results? What problems with the methods might undermine or weaken these conclusions?

4. Interpret the findings of the attached article by Intravia et al. This means that you should tell what the results mean with respect to the goals of the researchers and what they were trying to find out, just as if you were writing the Results and Discussion/Conclusion sections of the journal article. Do not merely repeat in words what is already shown in numbers in the tables. What conclusions would follow from the results? What problems with the methods might undermine or weaken these conclusions?

DEVIANT BEHAVIOR
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The Mediating Role of Street Code Attitudes on the Self-Control and Crime Relationship

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ABSTRACT

Research has demonstrated strong but independent attention to the role of self-control and street code attitudes in predicting criminal and violent behavior. Yet, there are good theoretical notions to believe that street code attitudes may be a salient mechanism in the self-control-offending relationship. Specifically, the present study investigates: (1) the extent to which self-control predicts adopting street code attitudes and (2) whether street code attitudes mediate the effect of self-control on criminal behavior. Using data collected from a multisite sample of over 900 young adults, we assess this mediation hypothesis for three distinct types of criminal activity: violent, property, and drug use.

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...portion of...
Findings and directions for future research are discussed.

Introduction

In the past 25 years, Gottfredson and Hirschi's (1990) general theory of crime has been one of the most widely tested and cited theories in criminology (Cohn, Farrington, and Iratzoqui 2017), and evidence suggests that the theory's main correlate of low self-control appears to be one of the most favorable and consistent predictors of criminal and analogous behavior (Piquero 2008; Pratt and Cullen 2000). Although the theory has remained a popular explanation for various criminal and analogous acts, other perspectives such as subcultural-based theories of crime and violence have seen renewed attention among criminologists and sociologists in recent years. Specifically, Anderson's (1999) *Code of the Street* has cast light on the unique subcultures of violence that tend to be located in distressed inner-city neighborhoods, with particular attention placed on *attitudes* conducive to criminal and violent behaviors (Miller 1958; Sutherland and Cressey 1947; Wolfgang 1981).

To date, the general theory of crime has been examined and considered alongside several theoretical frameworks such as strain, routine activities/lifestyles, social learning/differential association, and social control (Baron 2003; Longshore et al. 2004; Turanovic and Pratt 2013; Wright et al. 1999); however, understanding the interplay between self-control and street code attitudes remains relatively neglected. This is somewhat surprising given that scholars contend that research "...must situate self-control relative to other variables and further explore how such variables may inter-relate

with self-control in the production of criminal behavior" (Antonaccio and Tittle 2008:479). Consistent with this assertion, there are good theoretical notions that self-control, in conjunction with street code attitudes, may provide a novel and promising lens in understanding the etiology of criminal and violent behavior.

In Anderson's (1999:33) street code thesis, he depicts an environment characterized by a set of informal rules that influence and regulate interpersonal social behavior, particularly crime and violence. Because individuals residing in these adverse environments are at a heightened risk of victimization, building and maintaining respect through violence and criminal activity are believed to reduce one's likelihood of being victimized. In these destitute settings, two types of family structures coexist—decent and street families. Decent families are more inclined to accept mainstream values and instill them in their children (Anderson 1999:38). Furthermore, decent families are more likely to habit strict child-rearing practices and encourage their children to respect others and "walk a straight moral line" (1999:39). In opposition, street families tend to be more inconsiderate to others, have greater difficulty coping with the responsibilities of parenthood, and are more likely to "aggressively socialize their children" into the street culture (Anderson 1999:45). Thus, in relation to the argument imposed by Gottfredson and Hirschi (1990) on the importance of proper child-rearing in the formation of self-control,¹ it is reasonable to speculate that street families, as portrayed by Anderson's research, are at heightened risk of failing to properly instill self-control in their children.

In addition to the different family structures outlined in his thesis, Anderson also highlights a number of interrelated characteristics that are conducive to individuals who embrace the street code, which include anger, physical aggression, toughness, being inconsiderate to others, and having an assertive personality. Although Anderson does not explicitly link self-control to the adoption of street code attitudes, it is possible that traits identified in low self-control—which include impulsivity, risk-seeking, a preference for physical (as opposed to mental) tasks, self-centeredness, short-sightedness, and having a temper—may result in individuals being more inclined to adopting characteristics associated with the street code belief system noted above. In fact, a growing body of work has illustrated that self-control is related to a number of characteristics consistent with the street code such as aggression, cynical attitudes, deviant beliefs, and gang membership (Baron 2003; Denson, DeWall, and Finkel 2012; Kissner and Pyrooz 2009; Reisig, Wolfe, and Holtfreter 2011). As a result, there is strong theoretical and empirical rationale suggesting that characteristics associated with the street code may serve as a promising mechanism linking self-control to offending.

Although there has been much progress on identifying the causes associated with adopting street code attitudes (Brezina et al. 2004; Intravia et al. 2014; Piquero et al. 2012; Stewart and Simons 2006), several important questions remain to be explored. In the current study, we aim to investigate the interrelationship among self-control, the street code, and criminal offending by examining: (1) whether low self-control predicts adopting street code attitudes, and (2) the extent to which street code attitudes mediate the effects of low self-control on various types of criminal behavior. Before we present the results to our study, we begin by presenting an overview of self-control and its predictive power on crime and analogous activity. From there, we provide a detailed review of the empirical research related to self-control and the street code.

Background

One of the most influential theories in the genesis of criminal activity is Gottfredson and Hirschi's (1990) general theory of crime. According to the authors, the underlying premise—low self-control—is believed to increase the likelihood of engaging in criminal and analogous acts. Determined by

¹According to Gottfredson and Hirschi (1990), self-control is developed by proper parental rearing practices, which include (1) monitoring the child's behavior, (2) recognizing deviant behavior, and (3) punishing deviant behavior when it occurs (p.97). In contrast, low self-control is a result of ineffective/poor parental rearing practices. Consistent with Gottfredson and Hirschi's assertions, prior research suggests that parenting affects self-control (Cullen et al. 2008; Hay 2001; Unnever, Cullen, and Pratt 2003). However, scholars recognize that other factors (e.g., genetics, neighborhood conditions, and additional parenting elements) are also important in establishing self-control (Hay 2001; Pratt, Turner, and Piquero 2004; Wright and Beaver 2005).

proper/poor child-rearing practices, one's level of self-control is believed to be established in early childhood and remains stable throughout the life course (Arneklev, Cochran, and Gainey 1998; Piquero, Jennings, and Farrington 2010). Thus, according to Gottfredson and Hirschi, low self-control is an individual characteristic that can explain all types of criminal and analogous behavior, for all individuals, regardless of their sex, race, or socioeconomic status.

Despite having a number of concerns raised over the measurement of self-control, as well as hypotheses related to the theory's versatility and stability postulates (see Akers 1991; Geis 2000; Hirschi and Gottfredson 1993; Piquero, Jennings, and Farrington 2010; Pratt and Cullen 2000; Turner and Piquero 2002), the general theory has enjoyed favorable support for explaining various acts including, but not limited to, crime, violence, digital piracy, binge drinking, and risky behavior (Benda 2005; Higgins 2004; Jones and Quisenberry 2004; Piquero et al. 2005; Reisig and Pratt 2011; Tittle, Ward, and Grasmick 2003). In fact, Pratt and Cullen's (2000) meta-analysis illustrated that self-control was a significant predictor of criminal and imprudent acts, regardless of whether the construct was measured using an attitudinal or a behavioral scale (Grasmick et al. 1993; Keane, Maxim, and Teevan 1993). However, the authors noted that studies combining self-control and social learning variables explained more variation in criminal behavior, suggesting self-control may not be the sole or most important correlate of crime and delinquency (see also Chapple 2005; Gibson, Schreck, and Miller 2004). Similar to this assertion, prior research also suggests self-control, in conjunction with other variables (e.g., morality and opportunity), provides a more comprehensive explanation to criminality (Antonaccio and Tittle 2008; Schoepfer and Piquero 2006; Seipel and Eifler 2010; Smith 2004). Other studies, however, have illustrated that the robustness of self-control is either partially or largely mediated by other theoretical variables such as social bonds, rational choice, and social learning (Li et al. 2016; Higgins and Marcum 2005; Longshore, Chang, and Messina 2005).

In addition to the predictive power of self-control on criminal and analogous behavior, a recent meta-analysis also shows self-control is significantly related to victimization. Analyzing 66 studies drawn from 42 different data sets, Pratt et al. (2014) found that self-control is a consistent, yet modest, predictor of victimization. Nonetheless, the authors also found that the explanatory power of self-control is notably reduced in studies that measured intervening mechanisms linking self-control to victimization. Altogether, a large body of work demonstrates that self-control is an important component to adverse outcomes such as crime and victimization. Yet, a growing number of studies have questioned its predictive strength, suggesting "...other untested alternative explanations may possess more explanatory power" (Smith 2004:558). Stated differently, it is plausible that accounting for additional intervening mechanisms, such as street code attitudes, may reduce the predictive power of self-control.

Low self-control and characteristics associated with the street code

According to Gottfredson and Hirschi, individuals with low self-control are more inclined to be impulsive, risk-seeking, physical, self-centered, shortsighted, and having a volatile temper. Although Anderson (1999) does not directly connect low self-control traits to the adoption of street code attitudes, it is possible that Anderson's portrayal of individuals who endorse the street code are consistent with those who lack self-control. For example, Anderson argues that individuals who embrace street code beliefs are always looking to gain respect through violent disputes (e.g., risk-seeking) and may manifest "nerve," or express disrespect, through "throwing the first punch," "getting in someone's face," or even "pulling the trigger" (e.g., impulsivity) (p. 92). Furthermore, individuals who follow the code often resort to aggression or violence in order to build a reputation and be in control of their environment (e.g., being physical and having a temper), show a lack of consideration or remorse for others (e.g., self-centered), and have a limited understanding of priorities and little hope for the future (e.g., shortsighted) (p. 45).

In addition to the noticeable similarities between the characteristics that comprise low self-control and the characteristics that comprise the street code, there is increasing evidence illustrating that self-control is associated with characteristics associated with street code attitudes such as deviant/moral beliefs, cynicism, aggression, and violence. For example, in a study of 400 street youth, Baron (2003) found that individuals with low self-control were more likely to hold deviant beliefs toward breaking the law. Similarly, Schoepfer and Piquero (2006) found that low self-control was inversely related to moral beliefs and that self-control significantly affected intentions to steal and fight when moral beliefs were low. Research also illustrates that self-control can negatively impact individuals' perceptions of police legitimacy and procedural fairness (Piquero, Gomez-Smith, and Langton 2004; Reisig, Wolfe, and Holtfreter 2011; Wolfe 2011). In fact, Reisig, Wolfe, and Holtfreter (2011) found that individuals with lower self-control were more likely to perceive the police as less legitimate as well as have heightened legal cynicism.

A growing body of literature has also investigated the effects of self-control on anger and aggression. For instance, Tangney, Baumeister, and Boone (2004) created a self-control scale and examined it with a broad spectrum of behavior. In their analysis, the authors found that respondents with higher self-control were less likely to express anger as well as display various forms of aggression (physical, verbal, symbolic, indirect, and displaced) (see also Piquero, Gomez-Smith, and Langton 2004). Furthermore, prior studies have found both adults and adolescents with low self-control are significantly more likely to have increased levels of aggression and be violent (Avakame 1998; Finkenauer, Engels, and Baumeister 2005). Similarly, Baron, Forde, and Kay (2007) examined how low self-control, lifestyle, and social circumstances influence how street youth participate in violent behavior. In their study of 125 at-risk males, the authors found that characteristics of low self-control had a strong direct influence on violence, and that aggression partially mediates this effect. As stated by the authors, this suggests that learned repertoires influenced by self-control, such as aggression, can increase the likelihood one will be involved in crime and violence (Baron, Forde, and Kay 2007: 133).

Another key explanation of how self-control is related to street code attitudes can be found in studies that examine bullying. Similar to the characteristics associated with the street code belief system, bullying is often measured by a spectrum of physical and psychological aggressive behaviors such as assaulting, threatening, harassing, and maintaining dominance over others (Kim, Koh, and Leventhal 2004). For example, using a sample of nearly 300 youth, Moon and Alarid (2015) found that students with low self-control were significantly more likely to physically and psychologically bully others (see also Jolliffe and Farrington 2011; Unnever 2005).

In sum, the above-mentioned studies illustrate how low self-control is related to a variety of characteristics and behaviors that are consistent with individuals who embrace the street code. Thus, it is plausible self-control may not only predict street code attitudes, but street-oriented beliefs may also be an important mechanism in understanding the relationship between low self-control and offending. Before presenting our results, we first discuss the correlates of street code attitudes as well as the consequences of those who endorse this belief system.

The causes and consequences of the street code

For over a decade, scholars have been fascinated with examining the factors associated with adopting the street code as well as the extent to which street code attitudes predict crime and violence. Anderson's code of the street thesis focused heavily on depicting a belief system among African Americans living in urban environments; however, research has shown that street code attitudes are generalizable to various settings and populations such as rural and suburban areas and among diverse samples of adults, youth, inmates, and college students (Intravia et al. 2016; Keith and Griffiths 2014; Mears et al. 2013; Piquero et al. 2012; Stewart and Simons 2006; Taylor et al. 2010).

To date, research has examined numerous individual- and contextual-level factors associated with adopting street code beliefs. For example, using a nationally representative sample of male youth,

Brezina et al. (2004) found that parenting practices (e.g., discipline and supervision), associating with aggressive peers, perceiving less opportunities, and being victimized were associated with adopting code-related beliefs. However, the authors did not find race (e.g., African American) or residing in an urban environment to be significantly related to street code attitudes (see also Keith and Griffiths 2014). In contrast, using a sample of over 3,300 middle school youth, Taylor et al. (2010) found street code attitudes were the most widespread among African Americans, males, and among adolescents living in larger cities. In a more extensive assessment, Stewart and Simons (2006) utilized a multilevel assessment of 720 African Americans from 259 neighborhoods and found neighborhood-level factors such as disadvantage and violence as well as individual-level factors including growing up in a street-oriented family, strain, and experiencing racial discrimination significantly predicted adherence to the street code (see also Intravia et al. 2016, 2014; Matsueda, Drakulich, and Kubrin 2006; Stewart and Simons 2010). Furthermore, the authors found street code attitudes partially mediated the effect of neighborhood context, family structure, and discrimination on violence. However, in contrast to Anderson's key arguments, Stewart and Simons did not find gender, living in an urban environment, residing in the south, and family socioeconomic status to be predictors of the street code (see also Berg et al. 2012; Stewart and Simons 2010).

A limited number of assessments have examined whether self-control influences the adoption of street-oriented beliefs. For example, Piquero et al. (2012) utilized a national sample of adults to explore various factors that predict street code attitudes. In their assessment, the authors found individuals with low self-control were significantly more likely to adopt the street code. In addition, they also found street code attitudes were more prevalent among African Americans, males, those who were less educated, and those who had less respect for the police. However, street code attitudes were not related to offending, which could be due, in part, to the fact that the sample was relatively older (mean age = 52 years old) when the majority of respondents aged out of crime. In a more recent study, Henson, Swartz, and Reyns (2016) examined the interplay among self-control, "online" street-oriented beliefs, and cybercrime.² In their assessment of 315 undergraduate students, the authors found low self-control significantly predicted their modified version of online street-oriented beliefs and online code beliefs mediated the effect of self-control on cybercrime offending.

In addition to understanding the characteristics that are more likely to be related to adopting street code attitudes, research has examined the consequences of those who embrace the street-oriented belief system. Although there is strong support illustrating street code attitudes predict violent behavior (Brezina et al. 2004; Mears et al. 2013; Stewart and Simons 2010; Stewart, Simons, and Conger 2002), more recent efforts have determined street code attitudes can predict criminal behavior beyond violence (see Henson, Swartz, and Reyns 2016; for an exception, see Piquero et al. 2012). For example, Intravia and colleagues (2016) examined whether street code attitudes predicted criminal offending (and not solely violence) as well as noncriminal behavior (school misbehavior). Using a sample of 245 young adults, the authors found street code attitudes were significantly related to criminal behavior (assault, theft, drug usage) but not school misbehavior. However, the significant effect of street code attitudes on crime became nonsignificant once measures of strain were included. Similarly, although not directly testing street code attitudes, empirical work testing the subcultures of violence more generally have found adherence to violent-related codes and values predict violent and nonviolent criminal behavior (Bernburg and Thorlindsson 2005; Copes, Hochstetler, and Forsyth 2013; Felson et al. 1994; Markowitz and Felson 1998; McGloin et al. 2011).

²Henson, Swartz, and Reyns (2016) altered Stewart and Simons (2006, 2010) original street code measures to fit specifically within an "online" context. For example, Stewart and Simons' street code construct included items such as "People tend to respect a person who is tough and aggressive" and "It is important to show others that you cannot be intimidated." whereas Henson and colleagues' modified scale included statements such as "Appearing tough or aggressive is a good way to keep others from messing with you online" and "If I appear tough online, people will be more likely to respect me offline."

The current study

In the past few decades, self-control has become a mainstay in explanations of criminal and analogous behaviors, whereas other theoretical constructs, such as Anderson's street code thesis, have renewed interest in understanding and applying how street-oriented belief systems vary across contexts, populations, and outcomes. However, theoretical and prior research suggests that self-control, street code attitudes, and criminal behavior are interrelated. With only a few exceptions, research in this domain is very limited. To our knowledge, only two studies have examined the interplay between self-control and the street code (Henson, Swartz, and Reynolds 2016; Piquero et al. 2012). The current study differs from and builds upon both Piquero et al. (2012) and Henson, Swartz, and Reynolds (2016) in three important ways. First, we utilize a diverse sample of mostly young adults from three distinct geographical locations. Second, unlike Henson, Swartz, and Reynolds (2016), we do not alter Stewart and Simons' (2006, 2010) street code construct nor do we limit our outcome to solely cyber offending. Third, we include a more extensive set of controls that may potentially confound our results such as geographic region, perceptions of neighborhood problems, moral beliefs, policing attitudes, police contact, and perceived risk of violence.

The purpose of this study is to build upon the contributions of prior research to examine whether street code attitudes represent some form of mediating link between self-control and criminal offending. Thus, based on the arguments imposed in prior research on self-control predicting characteristics associated with street-oriented beliefs, we first hypothesize that individuals with low self-control are more likely to adopt street code attitudes. Second, due to previous assessments illustrating that self-control is not the sole cause of criminal behavior and other theoretical constructs predict crime above and beyond self-control, we hypothesize the significant relationship between self-control and various criminal behaviors (violent, property, and drug offenses) will be mediated by street code attitudes.

Data and methods

Sample

The data for this research was collected through a survey administered to adults across three college campuses during the Fall 2016 and Spring 2017 semesters. The instrument was disseminated to students in accordance with the each university's Institutional Review Board (IRB). Researchers from the three universities attended each of the 34 participating class sections, addressing students with an oral description and instructions for the survey. Students were informed of the voluntary nature of their participation and anonymity of their responses. Researchers were prudent to explain there were no penalties for choosing not to participate. Identical information was provided in writing along with contact information for the lead researcher and the corresponding IRB if they had any questions or concerns regarding the survey or study.

We sought to increase the generalizability of our study by using a multisite sample, surveying adults from different regions of the country. The majority (51.6%) of our observations were respondents from a large midwestern university located in a more traditional "college town." At this site, we sampled 474 students (96.5% response rate) from 12 criminal justice classes. Our second site, representing the northeast region (26.8% of the sample) of the United States, is a large urban institution located in a densely populated metropolitan area. Here, we sampled 246 individuals (95.5% response rate) from nine classes—six criminal justice, two sociology, and one anthropology. Finally, we surveyed 198 adults (94.4% response rate) from 13 criminal justice classes at a mid-sized southern university (21.6%) located in a mid-sized city.

The survey collection across the three sites yielded 918 mostly young adults, with a total participation rate of 96.1% (918 surveys completed out of 955 collected). Just under half of the

respondents (47.2%) reported being criminal justice and criminology majors.³ The final sample demographics consisted of 43.1% male, 54.4% white (18.8% African American, 16.1% Hispanic, 8.7% other race/ethnicity), and a mean age of 21.1 years old.

Measures

Dependent variables

For each of the criminal offenses measures below (violence, property, and drug use), respondents were asked to indicate whether they had committed the crimes in the previous year (1 = *yes*, 0 = *no*). *Violent offending* was measured using a single item that asked respondents whether they "hit someone in order to hurt them." *Property offending* consists of four items: (1) stolen something worth less than \$50, (2) stolen something worth more than \$50, (3) damaged, destroyed, marked up, or tagged somebody else's property on purpose, and (4) broke or tried to break into a building to steal something or look around. Owing to a large skew (only three individuals committing all four offenses and 80% of the sample reporting zero offenses), we dichotomized the property offending index to zero offenses versus one or more offenses. Lastly, *drug use* was created using two items: (1) used marijuana and (2) used other illegal drugs. We dichotomized drug usage to indicate 1 = drug use in previous year and 0 = no drug use in the previous year.⁴

Independent variables

Previous research has used several different techniques to measure self-control, including attitudinal scales, behavioral scales, and items that tap into elements such as impulsiveness and risk-seeking (Holtfreter, Reisig, and Pratt 2008; Piquero, Gomez-Smith, and Langton 2004; Reisig, Wolfe, and Holtfreter 2011; Schoepfer and Piquero 2006). Despite these variations in how self-control is operationalized, scholars have shown that different measures of self-control tend to perform in a similar fashion (Pratt and Cullen 2000; Tittle, Ward, and Grasmick 2003). Specifically, self-control was measured using Tangney et al.'s (2004) Brief Self-Control Scale. This scale has been used in previous research on young adults and university-based samples and has been shown to be a valid and reliable construct on measuring self-control and observing its theoretically consistent relationship to deviant and offending behaviors (Holtfreter et al. 2010; Reisig, Wolfe, and Holtfreter 2011). The following 13 items were used: (1) I am good at resisting temptation, (2) I wish I had more self-discipline, (3) I have a hard time breaking bad habits, (4) I am lazy, (5) I say inappropriate things, (6) I do certain things that are bad for me, if they are fun, (7) I refuse things that are bad for me, (8) pleasure and fun sometimes keep me from getting work done, (9) I have trouble concentrating, (10) I am able to work effectively toward long-term goals, (11) sometimes I can't stop myself from doing something, even if I know it is wrong, (12) people would say that I have iron self-discipline, (13) I often act without thinking through all the alternatives. Response categories ranged from 1 = *not at all like me* to 5 = *like me*. Items originally equating lower scores with higher self-control were reverse-coded prior to summing the scale. Higher scores equate to lower self-control ($\alpha = .84$).

Street code attitudes. To assess the degree to which the sample endorsed street code beliefs, we used the seven-item, self-report attitudinal scale utilized by Stewart and colleagues (Stewart and Simons 2006, 2010). The items included: (1) when someone disrespects you, it is important that you use physical force or aggression to teach him or her not to disrespect you, (2) if someone uses violence against you, it is important that you use violence against him or her to get even, (3) people will take advantage of you if you don't let them know how tough you are, (4) people do not respect a person

³The Midwest sample = 42.2% majors (57.8% nonmajors), Northeast sample = 45.1% majors (54.9% nonmajors), and the South sample = 61.7% majors (38.3% nonmajors).

⁴A comparison of results using the dichotomous measure versus the variety measures with property crime and drug use produced substantively similar results.

who is afraid to fight physically for his/her rights, (5) sometimes you need to threaten people in order to get them to treat you fairly, (6) it is important to show others that you cannot be intimidated, and (7) people tend to respect a person who is tough and aggressive. Response categories for each item ranged from 1 = *strongly disagree* to 5 = *strongly agree*. The responses were summed to obtain a total score representing the extent to which the respondent held beliefs that were consistent with adopting the street code ($\alpha = .83$).⁵

Controls

Consistent with previous street code studies, we controlled for several potential variables that may be related to both street code attitudes and criminal behavior. Demographics included *race* (1 = black), *sex* (1 = male), *age* (measure continuously), *political ideology* (very liberal to very conservative), and *location* (1 = south). We also controlled for perceptions of neighborhood problems, moral beliefs, police satisfaction, vicarious police contact, victimization, and perceived risk for violence. *Perceptions of neighborhood problems* consisting of six items that asked respondents to indicate "how much of a problem" were the following conditions in their "neighborhood:" (1) vandalism, (2) drunks and drug users, (3) abandoned buildings, (4) burglaries and thefts, (5) rundown and poorly kept buildings, and (6) assaults and muggings. Response categories ranged from 1 = *a big problem* to 3 = *not a problem*, and responses were summed to illustrate that higher scores equate to more serious *neighborhood problems* ($\alpha = .85$). *Moral beliefs* is a single-item measure that asked respondents "How wrong do you think it is to break the law?" Response options ranged from 1 = *not wrong at all* to 5 = *very wrong*. Given the importance of perceptions of policing and adoption of the street code (see Anderson 1999; Intravia et al.

2014), we controlled for perceptions related to *police satisfaction*. The single-item measure asked respondents their level of agreement (1 = *strongly disagree* to 5 = *strongly agree*) to the following statement: "I am very satisfied with the services provided by the police." Consistent with prior work suggesting individual attitudes are influenced by the vicarious experiences of others (Paternoster and Piquero 1995; Piquero and Paternoster 1998), we also controlled for *vicarious police contact*. This single-item measure asked respondents "In the past year, how many of your family members or friends had direct contact with a police officer?" Response options ranged from 0 = *none* to 4 = *four or more*.

Finally, we controlled for prior victimization and perceived risk for violence. Victimization was a dichotomous measure that asked respondents whether they have been a victim of a crime in the past year (1 = yes). *Perceived risk for violence* is a single-item measure that asked respondents "how much are you and your family at risk for experiencing violent crime?" Responses ranged from 1 = *no risk* to 4 = *high risk*.

Descriptive statistics for all variables included in the current study are displayed in Table 1.

Analytic strategy

To examine whether street code attitudes mediate the effect of self-control on three types of criminal behavior, we used a set of logistic regression and ordinary least squares (OLS) models in STATA (version 14). Specifically, in models when the three types of offending behaviors (violent, property, drug use) are the outcome, logistic regression was used because of the dichotomous nature of these measures (e.g., yes/no). In the analyses where street code attitudes are the outcome, OLS regression was utilized due to the continuous nature of this construct. Prior to the multi-variate analysis, we assessed the normality of our dependent variables. The skew and kurtosis were all within the normal range (skew < 3.0; kurtosis < 10.0). In addition, variance inflation factors (VIF) were examined to ensure that collinearity was not an issue in the current analysis, with the highest VIF observed being 1.66.

⁵Some readers may be interested in the overlap between self-control and street code attitudes. To investigate this claim, a factor analysis was performed. The results illustrated that self-control items and street code items loaded on two distinct factors, each with an eigenvalue exceeding the normal cutoff of 1.0. Thus, it provides support that self-control and street code attitudes are distinct constructs.

Table 1. Descriptive statistics for key study variables.

Variables	Mean	SD	Range
Violent Crime	.166	.372	0-1
Property Crime	.199	.399	0-1
Drug	.14	.491	0-1
Low Self-Control	36.553	11.2	14-65
Street Code Attitudes	19.114	5.094	7-35
White (=1)	.564	.496	0-1
Black (=:1)	.188	.391	0-1
Sex (1 = male)	.431	.495	0-1
Age	21.104	4.837	18-68
Political Affiliation	.2916	.908	1-5
South (=1)	.216	.412	0-1
Northeast (=1)	.268	.443	0-1
Victim (=1)	.181	.385	0-1
Police Satisfaction	3.453	.902	1-5
Neighborhood Problems	8.444	2.736	6-18
Risk of Violence	1.688	.679	1-4
Moral Beliefs	3.864	.897	1-5
Vicarious Police Contact	1.664	1.466	0-4

Our analyses proceeded in three stages. First, we examined whether self-control predicts violent, property, and drug offending. This baseline model also serves as the first step in the mediation process, by establishing whether the key individual-level variable (e.g., self-control) is related to the dependent variables (Baron and Kenny 1986). Second, we examine whether self-control, our key independent variable, predicts street code attitudes, our key mediating variable. Consistent with prior research, we carried out the analysis in a stepwise manner by first identifying the relationship between race and the street code, followed by the inclusion of demographics, key controls, and low self-control. Finally, we include street code attitudes into our models to examine whether the effect of street code attitudes serves to attenuate or even eliminate the relationship between self-control and each of the three offending measures.

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Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Violent Crime	1000																
(2) Property Crime	.271	1000															
(3) Drug Use	.162	.286	1000														
(4) Low Self-Control	.157	.185	.321**	1000													
(5) Street Code Attitudes	.323**	.158**	.108**	.249**	1000												
(6) Black (=1)	.079*	-.052	.016	-.092**	.161**	1000											
(7) Sex (1 = male)	.118**	.100	.043	.117***	.241**	-.059	1000										
(8) Age	-.097**	-.099*	-.134**	-.185**	-.074*	.183***	.009	1000									
(9) Political Affiliation	.051	-.043	-.156**	.046	.073*	-.143*	.178**	.032	1000								
(10) South (=1)	-.084*	-.155**	-.121**	-.134**	-.079*	.285***	.051	.368**	.004	1000							
(11) Northeast (=1)	.034	-.019	-.130**	-.060	.155	-.051	.010	.031	-.153**	-.317***	1000						
(12) Victim (=1)	-.155	.240**	.089**	.058	.008	-.074*	.019	.008	-.034	.001	-.060	1000					
(13) Police Satisfaction	-.038	-.072*	-.142**	-.132*	-.152**	.266	.100***	-.009	.209**	-.058	.118**	-.063	1000				
(14) Neighborhood Problems	.021	.036	.067*	.038	.085**	.131**	-.093**	-.021	-.021	.014	.083*	.061	-.190**	1000			
(15) Risk of Violence	.066*	.056	.054	.002	.068**	.145H	-.112	.071**	.063	.127***	.038	.153***	-.163**	.417***	1000		
(16) Moral Beliefs	-.137***	-.188**	-.207**	-.252**	-.157**	.037	-.116**	.057	.113**	.073*	.020	-.085**	.257**	-.014	-.014	1000	
(17) Vicarious Police Contact	.160***	.151**	.148**	.106*	.140**	.122**	.020	-.043	-.061	.019	-.042	.233**	-.096**	.157***	.222**	-.090**	1000

Notes: N = 911; * p < .05; ** p < .01.

Table 3. Logistic regression predicting criminal offending.

Variables	Model 1: Violence		Model 2: Property		Model 3: Drug Use	
	b(SE)	Odds Ratio	b (SE)	Odds Ratio	b(SE)	Odds Ratio
Low self-Control	.044 (.013)**	1.045**	.047 (.012)**	1.047**	.061 (.010)**	1.063**
Black (=1)	1.053 (.286)**	2.867**	.028 (.269)	1.029	.168 (.213)	1.183
Sex (1 = male)	.537 (.199)**	1.711**	.455 (.189)**	1.577**	.199 (.157)	1.220
Age	-.101 (.039)**	.903**	-.036 (.031)	.964	-.024 (.020)	.975
Political Affiliation	.306 (.113)**	1.359**	-.080 (.104)	.922	-.393 (.089)**	.674**
South (=1)	-.458 (.300)	.631	-1.237 (.317)**	.290**	-.860 (.220)**	.423**
Northeast (=1)	.457 (.231)	1.579**	-.271 (.221)	.761	-1.064 (.191)**	.344**
Victim (=1)	.666 (.230)**	1.947**	1.144 (.209)**	3.142**	.156 (.198)	1.169
Police Satisfaction	.068 (.117)	1.071	-.085 (.112)	.918	-.201 (.094)*	.817*
Neighborhood Problems	-.043 (.039)	.957	-.001 (.036)	.999	.030 (.030)	1.030
Risk of Violence	.246 (.156)	1.279	.141 (.148)	1.152	.060 (.126)	1.062
Moral Beliefs	-.301 (.107)**	.739**	-.329 (.100)**	.719**	-.280 (.089)**	.755**
Vicarious Police Contact	.197 (.067)**	1.218**	.143 (.064)*	1.153*	.129 (.054)*	1.138*
Street Code Attitudes						
Constant	-2.321 (1.210)	.098	-1.385 (1.082)	.250	.472 (.848)	1.604
McFadden's R-Squared	.123		.146		.144	

Notes: N = 911; *p < .05; **p < .01.

Table 4. OLS Regression Predicting Street Code Attitudes.

Variables	Model 1	Model 2
	b (SE)	b (SE)
Low Self-Control		.139 (.020)**
Black (=1)	2.108 (.426)**	2.807 (.429)**
Sex (1 = male)		2.126 (.316)**
Age		-.081 (.034)*
Political Affiliation		.775 (.175)**
South (=1)		-.135 (.436)
Northeast (=1)		2.220 (.375)**
Victim (=1)		-.136 (.401)
Police Satisfaction		-.354 (.187)
Neighborhood Problems		.024 (.061)
Risk of Violence		.253 (.252)
Moral Beliefs		-.414 (.180)*
Vicarious Police Contact		.271 (.109)*
Constant	18705 (.184)	13216 (1.642)**
R-Squared	.026	.222

Notes: N = 911; *p < .05; **p < .01.

Table 5. Full logistic regression models predicting criminal offending.

Variables	Model 1: Violence		Model 2: Property		Model 3: Drug Use	
	b (SE)	Odds Ratio	b (SE)	Odds Ratio	b (SE)	Odds-Ratio
low Self-Control	.023 (.014)	1.023	.039 (.012)**	1.040..	.059 (.011)"	1.060"*
Black (=1)	.674 (.274)*	1.963.	-.140 (.278)	.869	.110 (.219)	1.117
Sex (1 = male)	.208 (.213)	1.231	.343 (.194)	1.410	.159 (.160)	1.172
Age	-.108 (.042)*	.897*	-.034 (.032)	.965	-.023 (.020)	.976
Political Affiliation	.221 (.117)	1.247	-.125 (.105)	.881	-.409 (.091)*•	.663"
South (=1)	-.548 (.316)	.577	-1.230 (.318)..	.292**	-.859 (.221)..	.423**
Northeast (=1)	.181 (.245)	1.199	-.395 (.227)	.673	-1.110 (.196)..	.329"*
Victim (=1)	.797 (.244)**	2.220"	1.169 (.211)**	3.221**	.156 (.198)	1.169
Police satisfaction	.111 (.120)	1.117	-.078 (.111)	.924	-.196 (.094)*	.821*
Neighborhood Problems	-.047 (.040)	.983	-.001 (.037)	.999	.029 (.030)	1.030
Risk of Violence	.226 (.164)	1.253	.122 (.149)	1.130	.057 (.126)	1.059
Moral Belief	-.255 (.112)*	.774*	-.301 (.101)**	.739"	-.271 (.089)..	.761"
Vicarious Police Contact	.143 (.070)*	1.154*	.123 (.065)	1.131	.123 (.054)*	1.131*
Street Code Attitudes	.175 (.024)**	1.192**	.058 (.020)**	1.060"	.019 (.016)	1.020
Constant	-4.645 (1.331)**	.009...	-2.116 (1.122)	.120	.221 (.875)	1.247
McFadden's R-Squared	.194		.156		.145	

Notes: N = 911; *p < .05; **p < .01.

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Article

Malevolent
Forces: Self-Control,

the Dark Triad, and Crime

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Abstract

The Dark Triad is represented by three interrelated personality characteristics thought to share a "dark core"-that is, to be associated with a range of negative outcomes. We investigate this link alongside another potent predictor of crime, low self control.

Keywords

dark triad, low self-control, psychopathy, malevolence, juvenile delinquency

The publication of Gottfredson and Hirschi's (1990) *A General Theory of Crime* generated unparalleled criminological interest. Backed by an easy to employ attitudinal scale developed by Grasmick, Tittle, Bursik, and Ameklev (1993), along with a slew of other scales constructed in secondary data sets, studies and debates into the effects of self-control have flourished (de Ridder, Lensvelt-Mulders, Finkenauer, Stole, & Baumeister, 2012; Moffitt et al., 2011; Pratt & Cullen, 2000; Rebellon, Straus, & Medeiros, 2008). Indeed, by any metric, tests of self-control have accumulated at a rate never before witness'd in the criminological canons. Few theories or variables can claim to have had such an impact on criminological discourse, theorizing, or research. Even so, the success of the general theory in directing research and scholarly interest has likely also had heretofore unrealized consequences.

One of the more important consequences has been that the almost exclusive focus on self-control has drawn attention away from other individual-level variables related to criminal behavior. Research into personality factors and individual traits related to aggression and criminal

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involvement has received scant attention in criminology even though a large body of evidence in psychology documents a link between personality and conduct problems (Fridell, Hesse, Jaeger, & Kuhlhom, 2008; Le Corff & Toupin, 2010; Miller, Lynam, & Leukefeld, 2003; Samuels et al., 2004). Individual traits, such as negative emotionality (Krueger et al., 1994), intelligence (Lynam, Moffitt, & Stouthamer-Loeber, 1993), psychopathy (Hare, 1996), impulsivity (White et al., 1994), and callous and unemotional (CU) traits (Frick & White, 2008), have all been linked to problem behavior, as have the personality factors of low conscientiousness and agreeableness (Jones, Miller, & Lynam, 2011; Miller & Lynam, 2001; Ozer & Benet-Martinez, 2006; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007).

Historically, Agnew, Brezina, Wright, and Cullen (2002, p. 45) notes, "the role of personality traits was discounted by mainstream criminologists until recently and most data sets do not allow for the examination of personality traits" (see also, Andrews & Wormith, 1989; Caspi et al., 1994; Walsh, 2000). Granting Agnew et al.'s (2002) argument, the almost exclusive focus on self-control has likely further precluded investigation into other individual features—features that may compete with, interact with, or otherwise account for the effects of self-control on conduct problems. By any measure, omitted variable bias is potentially serious, empirically and theoretically. A second concern, however, emerges when Gottfredson and Hirschi's (1990) assumptions about the nature of crime are juxtaposed against a growing body of research evidence—a body of evidence that presents a different picture of criminal behavior than they proposed originally.

Malevolent Forces

Gottfredson and Hirschi (1990) based their conception of self-control on what they called the "nature of crime." The nature of crime is that it is easy to commit, takes little planning, and is driven predominantly by available opportunities. Criminals, by extension, are simply opportunists who lack the ability to control their impulse to offend in the presence of a criminal opportunity. They are impulsive, do not think of the consequences of their behavior, prefer immediate gratification over long-term planning and rewards, and they put little cognitive effort into their criminal actions. Offenders haphazardly stumble from crime to crime and are easily induced to act in ways that violate social mores and laws.

At one level, Gottfredson and Hirschi's conception of the nature of crime is supported by a broad array of evidence. Criminals are generally impulsive (Lynam et al., 2000; White et al., 1994), show little planning in the commission of crime (Hochstetler, 2001; Petrosino & Brensilber, 2003), and engage in a variety of offenses ranging from petty crimes to serious crime (Baron, 2003; Evans, Cullen, Burton, Dunaway, & Benson, 1997; Keane, Maxim, & Teevan, 1993; Piquero, MacDonald, Dobrin, Daigle, & Cullen, 2005). This depiction has gone largely unchallenged in criminology. By contrast, however, threads of disparate studies paint a very different picture of an important subgroup of offenders: a subgroup of offenders that are predatory and callous. These offenders are, at a minimum, indifferent to the suffering they cause others or they may appear to relish in the suffering they cause. Their behaviors, moreover, may seem excessively cruel and morally repugnant. And contrary to the assumptions of Gottfredson and Hirschi, their behaviors are not entirely driven by opportunity but instead appear rooted in emotional and cognitive preferences to inflict harm on others for reasons that are often instrumental. They are, in other words, malevolent.

Some psychologists have called attention to the role of malevolence in human conduct generally (Goldberg, 1995; Hurlbert & Apt, 1992). Others, however, have argued that a subgroup of individuals with antisocial personality disorder can be characterized as malevolent. Millon, Grossman, Millon, Meagher, and Ramnath (2004, p. 161), for example, describe these individuals as "belligerent, rancorous, vicious, malignant, brutal, callous, vengeful, and vindictive." Malevolent individuals "anticipate betrayal and punishment," and they are willing to victimize "those too weak to retaliate or those whose terror might prove particularly entertaining." Similar to other

antisocial individuals, malevolent individuals engage in a diverse range of problem behaviors, including crime, but appear to do so with greater frequency and across a broader set of environmental conditions. That said, the relative frequency of their misconduct is matched only by the extremity or severity of their behavior.

Case studies of serious offenders, including serial murderers and sexual sadists, illustrate well the concept of malevolence (Carlisle, 1993; Fox & Levin, 1998; Heide & Keeney, 1995; Santtila et al., 2008). Even so, seemingly divergent areas of research evidence can be connected to shed light on how malevolence can be seen as an organizing framework. The first line of research points to "callous-unemotional (CU)" traits (Frick & White, 2008). These traits predispose individuals to view others as objects to be manipulated, they reflect an absent or deficient level of concern for others, and they reflect a willingness to use violence and coercion for instrumental gains. Research on CU traits has grown precipitously since the early 1990s and converges to show a relatively strong association between these trait clusters and especially serious and temporally stable conduct problems in children (Caspi, 2000; Heaven, 1996; Jolliffe & Farrington, 2004; Lahey et al., 1995; Loeber, Green, Keenan, & Lahey, 1995; Murray & Farrington, 2010; Starns et al., 2006). The CU traits are highly heritable, tend to cluster within some children, and have been found to differentiate seriously conduct disordered (CD) children from those who display less threatening antisocial behavior but still fit the diagnosis of CD (Barry et al., 2000; Christian, Frick, Hill, Tyler, & Frazer, 1997; Fontaine, McCrory, Boivin, Moffitt, & Viding, 2011; Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005; Viding, Blair, Moffitt, & Plomin, 2005; Viding, Frick, & Plomin, 2007). Frick, O'Brien, Wootton, and McBurnett (1994) argued that CU traits displayed in childhood overlap considerably with traits thought to measure psychopathy in adulthood and that a significant number of CU-defined children mature into adult psychopaths. "Current findings suggest that CU traits may define CD children who have extreme behavior problems," summarized Moffitt and her colleagues (2008, pp. 8-9), and these children have a "stronger genetic risk, and at-risk neurocognitive profiles [...] children with CU traits show more conduct problems, more severe aggression and more proactive aggression than other children with CD."

The second line of research reflects a relatively new psychological construct—one that aligns closely with research on childhood CU traits and one that captures the more willful and intentional motivations underpinning some serious behavior. Known as the "Dark Triad (DT)," this construct is represented by three "dark" interrelated personality profiles: narcissism, Machiavellianism, and psychopathy (Paulhus & Williams, 2002). Narcissism reflects exaggerated self-importance, a sense of entitlement, and a desire for social superiority and admiration (Corry, Merritt, Mrug, & Pamp, 2008). Machiavellianism reflects a cold, calculating, manipulation of others, often through deception, and most often to achieve goals that benefit self (Jones & Paulhus, 2009). Psychopathy reflects impulsive decision-making, selfishness, a lack of empathy, and a lack of remorse (Hare, 1996; Lilienfeld & Andrews, 1996). Each of the three constructs has been subject to substantial psychological testing and research and each is accompanied by an extensive literature. However, only recently have psychologists advanced the likelihood that these three personalities reflect the malevolent aspects of human personality. "Despite their diverse origins," note Paulhus and Williams (2002, p. 557), "the personalities composing the 'Dark Triad' share a number of features. To varying degrees, all three entail a socially malevolent character with behavioral tendencies toward self-promotion, emotional coldness, duplicity, and aggressiveness."

In language typical of psychological research, narcissists have been found to engage in aggression only after an ego threat was presented (Jones & Paulhus, 2010), while Machiavellians have been found to be more likely to plagiarize (Nathanson, Paulhus, & Williams, 2006). Of course, psychopathy has a long history of research, but it has also been found to be highly predictive of aggressive behavior in studies of the DT (Baughman, Dearing, Giammarco, & Vernon, 2012; Pailing, Boon, & Egan, 2014). Overall, DT research has shown that individuals who score high on DT traits are more

"toxic" in work settings (Jonason, Slomski, & Partyka, 2012; O'Boyle, Forsyth, Banks, & McDaniel, 2012), that they engage in relatively risky behaviors, such as gambling and mate poaching (Jonason, Li, & Buss, 2010; Jones, 2013b), that they report less intimate relationships and more frequent sexual encounters (Jonason, Li, Webster, & Schmitt, 2009; Jonason, Luevano, & Adams, 2012), engage in animal cruelty (Kavanagh, Signal, & Taylor, 2013), and that they report higher levels of racism (Jonason, 2015; Jones, 2013a).

To date, however, only a few studies have examined the association between DT and delinquency. Chabrol, Van Leeuwen, Rodgers, and Sejourne (2009) examined the relationship between the OT scales, measures of sadistic personality traits, and self-reported delinquency in a sample of 615 French high school students. They found that psychopathy and sadism were significant predictors of delinquency for boys but not for girls and that Machiavellianism and narcissism were unrelated to delinquency. In the second study, Kerig and Stellwagen (2010) examined teacher reports of DT traits and measures of aggression in 252 youth age 11-14 years old. Each of the DT subscales produced differential effects on the various measure of childhood aggression. Finally, Muris, Meesters, and Timmermans (2013) examined self and parent reports of child DT traits and problem behavior in 117 youth from the Netherlands. Child-reported Machiavellianism and psychopathy were positively and significantly correlated with measures of aggression and delinquency even after controlling for shared variance of the influence of a broad range of other personality factors.

Third, criminologists have created rich ethnographic accounts of offender behavior. In general, these accounts provide robust support for Gottfredson and Hirschi's (1990) conception of criminal offenders as opportunists. On the other hand, these same ethnographic accounts reveal glaring examples of predatory, callous offending. Wright and Decker's (1994, 1997) interviews with active armed robbers and burglars, for example, contained several examples. Many of their offenders reported that they enjoyed committing crime in part because of the power, control, and terror they induced in their victims. Elements of toughness and even cruelty are also present in Anderson's (1999) account of the "code of the streets." Street credibility, according to Anderson, is an important psychosocial mechanism that justifies all sorts of brutality. Shover's (1996) underappreciated study of persistent thieves also details the important ways subgroups of offenders view the world and their behavior. Shover, for example, classifies a group of thieves he studied as "fuck ups" (1996). These individuals align closely to Gottfredson and Hirschi's (1990) conception of the criminal offender. They lack follow through, are influenced by criminal opportunities, are hedonistic, and generally fail in most of their life endeavors. Still, however, Shover portrays another group of thieves as lifestyle criminals that prefer crime, enjoy committing crime, and show little remorse for their actions.

Yet Shover (1996) and Wright and Decker's (1994, 1997) accounts of active offenders and their callousness pale in comparison to those provided by Copes, Hochstetler, and Williams (2008) and Hochstetler, Copes, and Williams (2010). In sometimes graphic detail, their interviews of men convicted of street crimes reveal a brazen and utilitarian use of violence against others, including vulnerable "crack:heads" (Copes et al., 2008). Subjects described the purposeful exploitation and manipulation of drug addicts to secure their position in the social hierarchy of the street culture, while some detailed carjackings and other excessively violent assaults. Many of those interviewed expressed a remarkable lack of empathy. Some stated that they found "instrumental violence" necessary to assert dominance over their victims, to maintain control during a robbery, or even to inhibit further physical escalation. However, many made a clear distinction between their "justifiable" actions and those on the street who they deemed "authentically violent" as Hochstetler et al. (2010) relayed in one such case:

Mark hit him hard enough to where, dude, he didn't shake back. Dude was in a coma for a long time ... ended up with brain damage. It was messed up. We had the dude beat. The dude gave us the car keys. Mark, he didn't care. His adrenaline was full he didn't care if he killed the kid or not. (p.502)

Malevolent offenders are known, feared, and distrusted by other criminal offenders in part because their behaviors are unnecessarily violent and their temperaments unpredictable. According to Hochstetler and his colleagues (2010) even their co-offenders describe them as, "senseless, self-defeating, and crazy," with some claiming that their accomplice's pathologies are biologically rooted (p. 503). For instance, in another example, an offender detailed how his partner chose not to carry a gun because "he enjoyed beating victims with his bare hands" (p. 501).

The Current Study

Similar to research on CU traits, where CU children share behavioral styles with their CD peers but stand apart in terms of the seriousness of their behavior, we suspect that our measure of malevolent personalities, called the Dark Triad, and our measure of low self-control will predict variation in delinquency. However, we also expect that malevolence should be more strongly associated with violent behavior and should be less associated, if at all, with minor forms of deviance. Theoretically, our study also juxtaposes two competing views about the nature of crime. If Gottfredson and Hirschi (1990) are correct and the nature of crime is intimately linked to low self-control, then our measure of malevolence should be statistically unrelated to our dependent measures. If so, then a core assumption of self-control theory would be supported. Conversely, if malevolence matters then the nature of crime described by Gottfredson and Hirschi would be called into question, if not entirely then at least partially.

To organize our empirical examination, we developed a priori four research hypotheses. These hypotheses reflect expectations drawn from prior research and theorizing, including the research examined above (Agnew, Brezina, Wright, & Cullen, 2002; Block, 1995; Caspi et al., 1994; Lilienfeld, 1999). The first three hypotheses, for example, reflect expectations culled from prior studies and are reasonably specific. They are also falsifiable. The last hypothesis, however, is less specific but still falsifiable. While theory would predict the likelihood of a multiplicative interaction between low self-control and malevolence, we know of no studies that have examined this possibility. As such, we treat models that include the interaction term as exploratory, especially since our data cannot establish temporal ordering.

Hypotheses

Prior research suggests a series of testable propositions related to self-control, the Dark Triad, and delinquent and violent behavior. We make these propositions explicit below.

Hypothesis 1: We expect that the Dark Triad index will predict variation in problem behaviors independent of levels of self-control.

Hypothesis 2: We expect the Dark Triad index to account for the effects of self-control on measures of serious violence.

Hypothesis 3: We expect the Dark Triad index will be unrelated to less serious forms of problem behavior.

Hypothesis 4: We expect a significant multiplicative interaction between the Dark Triad index and the measure of low self-control.

Method

Sample

Data for this study resulted from a collaboration between Western scholars and academics from the Kingdom of Saudi Arabia. The collaboration represents an effort by the Kingdom to reform and

examine Saudi society through the development of a vibrant social science. American faculty consulted in the creation of the survey and adapted the wording of questions to reflect the culture and language of Saudi youth. Since this was the first time systematic data on the offending behaviors of Saudi youth had been collected, the decision was made to utilize previously validated measures to assess key constructs. The use of validated measures reduced the chance that findings could be attributable to measurement error and they provided a comparative benchmark to evaluate the patterns of responses provided by Saudi youth (see also, Sacarellos et al., 2016). The survey was originally produced in English, translated to Arabic, and then provided to students who primarily spoke Arabic.

Subjects for this sample were drawn from a large city in Saudi Arabia with a population of over three million. The development of the sampling frame included all public and private religious high schools in the city, totaling over 200 schools and more than 100,000 students, which was then stratified by geography since it corresponded closely to socioeconomic differences within the city. As schools in Saudi Arabia are segregated by sex, we then identified schools on this characteristic and randomly selected eight schools for boys and eight schools for girls from the four geographic areas of the city: North, South, Central, and East. Two schools from each area were selected, one for data collection and one to be placed on a reserve list.

King Abdulaziz University (KAU) faculty approached the administration of identified schools and requested permission for the implementation of this survey. No principal refused this request. The KAU faculty then randomly selected "homeroom" teachers from within each school and sought their support. Again, none declined. There were no objections raised by any officials nor did officials in the schools or the Saudi government influence the creation or implementation of the survey. Five hundred survey questionnaires were distributed to 10th through 12th grade male students and another 500 to female students. Participation in the survey was optional. Confidentiality was assured to students and schools alike as no identifying information was collected. Surveys were distributed during a 50-min block of class time, where trained KAU staff were present and oversaw the administration of the survey.

Although we cannot make a definitive statement as to the generalizability of the male and female samples to broader Saudi society, we note that the patterns of behavior reported here are virtually identical to the patterns reported in samples of Western youth. Methodological differences limit direct comparisons, however, prevalence estimates from data in three major U.S. cities found that approximately 203 to 253 of juvenile males engaged in various street crimes—with female juveniles engaging in such crimes less than half as much (Huizinga, Loeber, & Thornberry, 1993). In our sample, males often committed anywhere from 103 to 253 or more of various delinquent acts with girls committing about half of that amount. For example, 253 of Saudi boys reported stealing or attempting to steal something and 183 reported being involved in a gang fight. In contrast, only 93 of Saudi girls reported theft and 73 reported involvement in a gang fight. Additionally, although the use of alcohol and marijuana is much lower in our sample due to its country-wide prohibition, drug use was not absent in our sample: 63 reported drinking alcohol, 83 used marijuana, 73 abused prescription drugs, 273 used tobacco, and 113 used other illicit substances. These cross-cultural findings indicate that youth delinquency, whether occurring among boys or girls, is a relatively common phenomenon even in traditionally conservative societies like Saudi Arabia.

Dark Triad

Originally, measures of the Dark Triad personalities included extensive batteries of assessments for each trait (Paulhus & Williams, 2002). Narcissism, for example, was measured by use of the 40-item NPI, Machiavellianism was measured by the 20-item MACH-IV, and psychopathy was captured by the 31-item SRP-111. Collectively, prior assessments of the DT contained 91 items,

making use of the DT scale cumbersome. Recognizing this limitation, Jonason and Webster (2010) created a reduced form measure of the OT containing 12 items, 4 for each personality construct. Known as the "Dirty Dozen," it has received considerable attention and validation in psychological research (Jonason & Luevano, 2013; Maples, Lamkin, & Miller, 2014; Rauthmann & Kolar, 2012; Webster & Jonason, 2013). Jonason, Kaufman, Webster, and Geher (2013) assert that, "the Dirty Dozen has good convergent validity with the HEXACO model of personality, has good psychometric properties in terms of Item Response Theory, and has been useful in theory-testing" (p. 81).

Debate about how best to measure the Dark Triad continues (Jonason, Kavanagh, Webster, & Fitzgerald, 2011; Jones & Paulhus, 2010; Paulhus, 2014) with some scholars suggesting that the modest positive correlations between the scales reflect a broader personality archetype (Jakobwitz & Egan, 2006; O'Boyle, Forsyth, Banks, Story, & White, 2015) or that it can be subsumed under psychopathy (Glenn & Sellbom, 2015). Paulhus and Williams (2002), however, conceptualized the Dark Triad as three separate but overlapping personality constructs. Understood this way, scholars have analyzed the independent effects associated with each personality scale (Rauthmann, 2011) and have argued that the three personalities are unique due to their "behavioral, attitudinal and belief-related components" (Jones & Figueredo, 2013, p. 528). For instance, narcissists are egotistical, Machiavellians are detached and calculating, and psychopaths lack concern for others. Together, contend Paulhus and Williams (2002), these personalities share a dangerous "dark core" that manifests as a callous and manipulative, malevolent personality (Furnham, Richards, & Paulhus, 2013).

Other scholars, however, have argued that the intercorrelations between the three scales suggest that they are empirically indistinguishable, and thus DT should be measured as a broad index (Jonason, Li, & Teicher, 2010). Playing to both the conceptual and empirical overlap between the Dark Triad's dimensions, the use of Jonason and Webster's (2010) summated 12-item index facilitates examination of the joint effects of these subscales across outcomes. Example items for the "Dirty Dozen" ask whether the student seeks admiration and status, lies and manipulates others to get his or her way, or is unconcerned with the morality of his or her actions and tends to lack guilt. Higher scores indicate greater levels of Dark Triad traits, and items were rated on a 3-point Likert-type scale where 1 = *not true*, 2 = *sometimes true*, and 3 = *often true* ($\alpha = .80$).

We note that the mean for the DT index was a relatively low 18.2 (range = 12-36) and that the distribution was positively skewed. Given that we use a community sample of youth in school, the distributional qualities of the DT index are to be expected with comparatively few subjects showing high levels of malevolent personality traits. Similar distributional qualities have been found in other studies of the Dark Triad using a variety of different samples. The limited variation in the DT index, coupled to a sample of youth still in school, provides a conservative test of the association between the DT and our measures of delinquency.

Low Self-Control

The measure of low self-control consists of 25 items tapping several characteristics such as impulsivity, risk-seeking behavior, task completion, self-centeredness, and anger management. Included within this measure are 16 items modified from the original Grasmick Scale of low self-control (Grasmick, Tittle, Bursik, & Arneklev, 1993) and 9 items adapted from the Project on Human Development in Chicago Neighborhoods (PHDCN) survey regarding temperament and perseverance at school (Earls, 1999). This measure is coded so that higher scores indicate lower levels of self-control. Items were rated on a 3-point scale where 1 = *not true*, 2 = *sometimes true*, and 3 = *often true* ($\alpha = .86$). Appendix A contains the list of items used to construct the self-control and Dark Triad measures.

Delinquency

The student's delinquency was captured using 27 items modified from the National Youth Survey (NYS), a comprehensive self-report measure documented in criminological research (Huizinga & Elliott, 1986, 1987; Lauritsen, Sampson, & Laub, 1991). This measure inquires about a host of behaviors ranging from being loud and unruly in public, to theft or drug use, and physical violence against a person. Items asked the student how often they engaged in specific delinquent behaviors

and were scored on a 3-point scale where 1 = *not true*, 2 = *sometimes true*, and 3 = *often true* with higher scores reflecting more misbehavior (for a complete listing, see Sacarellos et al., 2016). The full index (ex = .92) is used in our initial models, but we later decompose this measure into two

distinct categories; for further analysis: violent delinquency and drug delinquency. Violent delinquency consists of 5 items regarding the student's use of physical force, threats, or the intent to injure

or kill (ex = .71). Drug delinquency consists of 8 items asking about the student's use of illegal drugs or their involvement in drug dealing (ex = .75).

Control Variables

Several contemporary control variables are included in our study, including the student's gender (*female* = 0, *male* = 1), grade level (*10th* = 0, *11th* = 1, *12th* = 2), and average grades at school (0 = *A*, 1 = *B*, 2 = *C*, 3 = *D*). Two variables capture socioeconomic status: a measure of whether the

student resided in a two-parent family household (0 = *yes*, 1 = *no*) and the level of education for both the mother and father (0 = *university level*, 1 = *high school*, 2 = *less than high school*). The latter was a combination of two scales and the single measure we use (ranging from 0 to 4) indicates lower levels of parental education at higher values. We also controlled for the amount of family conflict in the household. This measure was composed of 12 items adapted from the PHDCN family conflict and control scales and features questions pertaining to the level of attachment and supervision the student has with their family, the amount of arguing and violence in the home, and how often family members have been in trouble with the police or arrested. Items were scored on a 3-point Likert-type scale where 1 = *never*, 2 = *sometimes*, 3 = *always* (ex = .72).

Additionally, in recognition of prior research on youth delinquency, we controlled for the student's own victimization and their delinquent peer-group associations (Lauritsen et al., 1991; Mat-sueda & Anderson, 1998; Warr & Stafford, 1991). Victimization was captured using 7 items taken from the Boston Youth Survey regarding whether the student has been bullied, harassed, threatened, or physically assaulted (Sparks, 1981). Items were scored on a 3-point Likert-type scale where 1 = *never*, 2 = *sometimes*, 3 = *often* (ex = .80). Delinquent peers were measured using 11-items derived from the NYS, containing similar questions related to that asked of the individual student. Examples include whether their friends use illegal drugs, engage in theft or physical violence, or have gotten into trouble with the authorities. Items were scored on a 3-point Likert-type scale where 1 = *none of them*, 2 = *some of them*, and 3 = *most of them* (ex = .88). Appendix B contains a correlation matrix of our variables and delinquent outcomes.

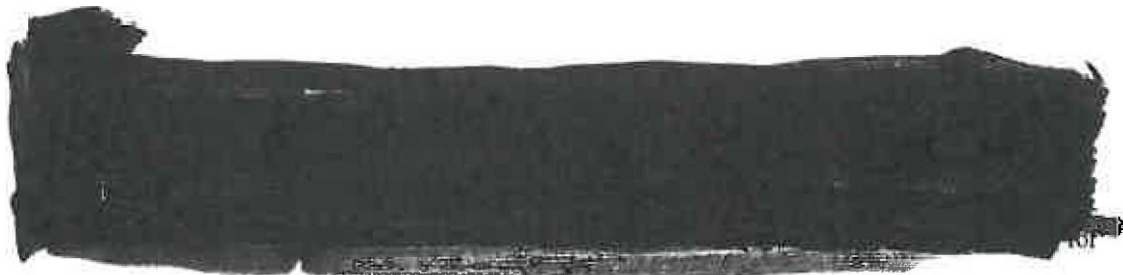


Table I. Descriptive

Independent Variables	Minimum	Maximum	Mean	SD	<i>a.</i>
Gender	0	1	.500	.500	
Grade level	0	2	1.74	.591	
School grades	0	3	.n8	.784	
Two-parent household	0	1	.082	.275	
Parent's education	0	4	1.97	1.32	
Family conflict	12	36	20.94	4.15	.715
Victimization	7	21	9.45	2.65	.795
Delinquent peer	11	33	14.36	4.04	.884
Low self-control	25	75	44.32	8.10	.855
Dark triad	12	36	18.22	4.20	.799
Dependent variables					
All delinquency	27	77	30.80	6.09	.916
Violent delinquency	5	15	5.67	1.35	.709
Drug delinquency	8	24	8.91	1.81	.751

Table 2. OLS Regression of Independent Variables on AH Delinquency.

Independent Variables	Model 1			Model 2			Model 3		
	<i>b</i>	<i>SE</i>	<i>β</i>	<i>b</i>	<i>SE</i>	<i>β</i>	<i>b</i>	<i>SE</i>	<i>f3</i>
Gender	.303	.392	.025	.140	.392	.012	.179	.372	.015
Grade level	.073	.286	.007	-.009	.286	-.001	-.123	.271	-.012
School grades	.347	.214	.045	.297	.213	.038	.332	.202	.043
Two-parent household	.952	.562	.043	.975	.559	.044	.781	.530	.035
Parent's education	.003	.120	.020	.103	.119	.022	.074	.113	.016
Family conflict	.077	.039	.053*	.057	.039	.039	.000	.038	.000
Victimization	.360	.065	.156***	.323	.065	.111***	.319	.062	.139***
Delinquent peers	.677	.045	.449***	.661	.045	.439***	.611	.043	.4106***
Low self-control	.099	.021	.132***	.053	.04	.071*	.054	.023	.072*
Dark triad				.172	.047	.119***	.126	.045	.087**
Interaction							.034	.003	.258-
	$R^2 = .387$			$R^2 = .395$			$R^2 = .457$		
	$N = 1,000$			$N = 1,000$			$N = 1,000$		

Note. OLS = ordinary least square.

*- $p < .001$. **, $p < .01$. *** $p < .05$.

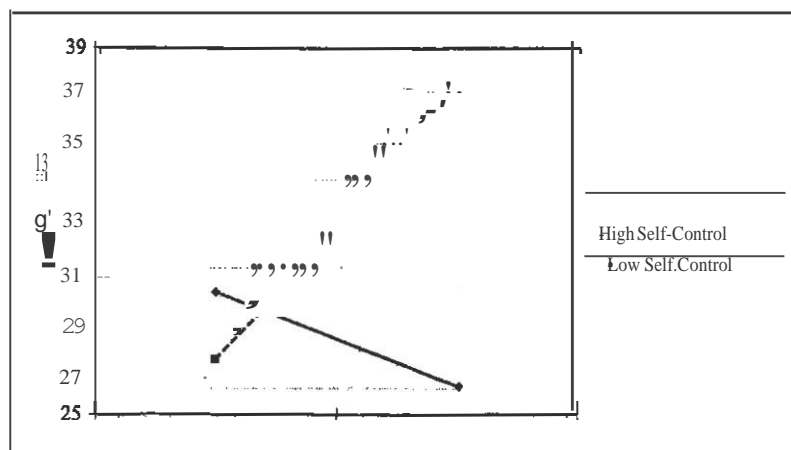


Figure I. Interaction of self-control and Park Triad on all delinquency.

Table I. Descriptive

Table J, OLS Regression of Independent Variables on Violent

Independent Variables	Model 1		Model 2			Model 3		
	b	SE	b	SE	β	b	SE	p
Gender	-.002	.092	-.001	.091	-.018	-.040	.086	.015
Grade level	.056	.067	.025	.032	.014	.004	.063	.002
School grades	.116	.068*	.102	.050	.059*	.110	.047	.064*
Two-parent household	.257	.131	.052	.263	.130	.216	.123	.044
Parent's education	-.003	.028	-.003	.000	.028	-.007	.026	.007
Family conflict	.016	.009	.051	.011	.009	-.003	.009	.011
Victimization	.056	.015	.111***	.046	.015	.090**	.044	.014
Delinquent peers	.142	.011	.425***	.137	.011	.411-	.125	.010
Low self-control	.019	.005	.116***	.006	.006	.035	.006	.005
Dark triad				.050	.011	.157-	.039	.010
Interaction						.008	.001	.287***
	R ² = .314		R ² = .329			R ² = .397		
	N = 1,000		N = 1,000			N = 1,000		

Note. OLS = ordinary least square.
 -, ., *p < .05, **p < .01, ***p < .001.

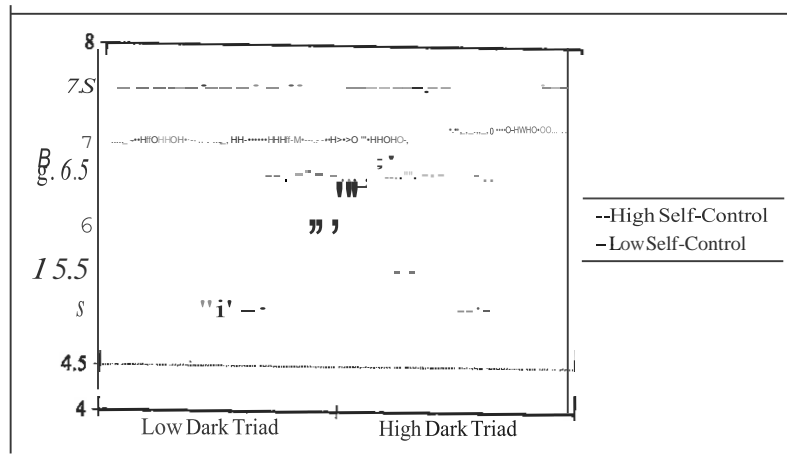


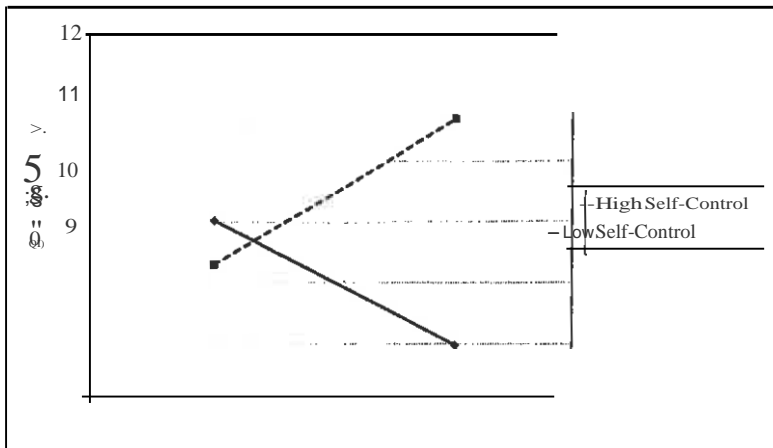
Figure 2. Interaction of self-control and Dark Triad on violent delinquency.

Table 4. OLS Regression of Independent Variables on Drug Delinquency.

Independent Variables	Model 1		Model 2			Model 3		
	b	SE	b	SE	β	b	SE	
Gender	.102	.125	.028	.080	.125	.022	.093	.118
Grade level	.020	.091	.007	.009	.091	.003	-.029	.086
School grades	.180	.068	.078**	.174	.068	.073*	.185	.064
Two-parent household	.539	.179	.082***	.542	.179	.082**	.477	.169
Parent's education	.006	.038	.005	.008	.038	.006	-.002	.036
Family conflict	.016	.012	.036	.013	.013	.030	-.006	.012
Victimization	.088	.021	.112	.083	.021	.122-	.082	.020
Delinquent peers	.166	.014	.369-	.164	.014	.365-	.147	.014
Low self-control	.032	.007	.144***	.026	.008	.116**	.026	.007
Dark triad				.023	.015	.054	.008	.014
Interaction							.011	.001
	R ² = .299		R ² = .301			R ² = .379		
	N = 1,000		N = 1,000			N = 1,000		

Note. OLS = ordinary least square.
 -, ., *p < .05, **p < .01, ***p < .001.

Table J, OLS Regression of Independent Variables on Violent



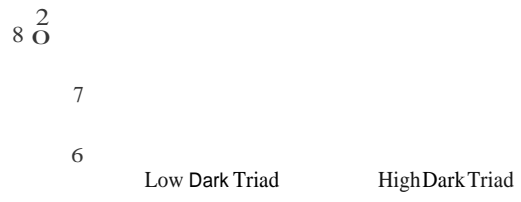


Figure 1. Interaction of self-control and Dark Triad on drug delinquency.