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Personality and Adolescent School-Based Victimization: Do the Big Five Matter?

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Abstract

Self-control has provided a useful framework for understanding both offending behavior and victimization risk. As a theory of victimization, research has established that low self-control is directly related to victimization risk beyond a range of other factors. This finding raises the issue of whether other personality traits are associated with an increased risk of victimization. Using a sample of ninth-grade adolescents ($N = 2,912$) from the Rural Substance Abuse and Violence Project (RSVP), we tested whether the Big Five Inventory (BFI) of personality traits predicted adolescent school-based victimization above and beyond low self-control and rival explanations of victimization. The results indicate that, after controlling for risky behaviors, school attachment, and low self-control, neuroticism is positively related to victimization. This finding suggests that examining traits other than low self-control is important to capture fully what makes someone vulnerable to crime. Further, we consider the theoretical and policy implications of the findings.

Keywords

adolescents; school-based victimization; general theory of crime; personality traits

Victimization at school is a serious concern that has received widespread attention. Even though victimization rates at school are declining more generally, students ages 12 through 18 experienced more than 800,000 incidents of theft and violent victimization at school in 2015 (Musu-Gillette, Zhang, Wang, Zhang, & Oudekerk, 2017). Furthermore, approximately 21% of students reported that they were bullied at school in the same year (Lessne & Yanez, 2016). These statistics are particularly concerning given the negative outcomes associated

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COMPETING INTERESTS

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with adolescent school-based victimization such as anxiety, depression, delinquency, drug use, school avoidance, poor school performance, low self-efficacy, and low self-esteem (Carbone-Lopez, Esbensen, & Brick, 2010; Esbensen & Carson, 2009; Ladd, Ettekal, & Kochenderfer-Ladd, 2017; Rigby, 2003; Ttofi, Farrington, Lösel, & Loeber, 2011).

In response to the recognition of school violence, a voluminous literature has developed in this area to better understand who is at risk of being targeted (see, e.g., Cook, Williams, Guerra, Kim, & Sadek, 2010; Pratt, Turanovic, Cullen, Kulig, & Ogle, 2017). However, much of this research is atheoretical or lacking in clear, guiding perspectives to explain the relationship between significant predictors and school victimization (see, e.g., Chouhy, Madero-Hernandez, & Turanovic, 2017; Espelage & Swearer, 2003). To remedy this issue, there has been a movement to apply general theories of victimization to explain school victimization (e.g., Deryol, Wilcox, & Dolu, 2017; Kulig, Pratt, Cullen, Chouhy, & Unnever, 2017). The broader issue is whether these general theories apply to a school context across a variety of samples. Thus, the current study advances this emerging line of inquiry.

Early theories focused on macro-level explanations of victimization associated with everyday routines (Cohen & Felson, 1979), but then gradually moved to the individual-level of analysis and assessed the causal importance of lifestyles and, more specifically, risky behaviors (Hindelang, Gottfredson, & Garofalo, 1978). In a paradigm shift, scholars subsequently examined the underlying personality traits of individuals that could lead to certain behaviors and elevated risk for victimization (Schreck, 1999). This new theoretical direction allowed scholars to assess the role of individual propensities beyond behaviors or routines that influenced criminal experiences.

This emphasis on studying individual traits, however, has been largely limited to examining one personality trait—low self-control. This research reveals a clear association between low self-control and victimization (Pratt, Turanovic, Fox, & Wright, 2014). Nonetheless, although exceptions exist, scholars have generally neglected to consider the possibility that other personality factors might increase or decrease vulnerability to victimization. In this context, the current project examines personality traits beyond self-control that could influence an individual's risk of being victimized at school. Individual traits matter because they are expressed across contexts and can affect how people interact with and are viewed by others—including in a school setting. The following sections will outline the evolution of prominent victimological theories and discuss the usefulness of extending these theories to examine unique individual traits that elevate individual risk for victimization in a school context.

LOW SELF-CONTROL, THE BIG FIVE, AND VICTIMIZATION

Vulnerability to Victimization

Growing concern about crime trends during the 1960s and 1970s nourished fresh explanatory perspectives, including a groundbreaking theory of victimization—lifestyle-routine activities theory (L-RAT) (Cohen & Felson, 1979; Hindelang et al., 1978). This approach attempted to describe why certain individuals were victimized and to provide insights into the factors that increased vulnerability to crime. Special consideration was

given to the role of everyday routines that increased victimization risk, such as women joining the workforce and spending more time outside their place of residence (Cohen & Felson, 1979; Cohen, Kluegel, & Land, 1981). More recently, concern has focused more fully on lifestyles that place individuals in situations where the likelihood of being victimized—due to close proximity to offenders and a lack of guardianship—is high (Hindelang et al., 1978). For example, although leaving the house to shop or go to work may elevate risk, victimization is more likely to occur for those who stay out late at night drinking, who associate with individuals that break the law, or who sell drugs (Pratt & Turanovic, 2016). Notably, researchers have found considerable support for L-RAT's core contention that risky behavioral routines are associated with victimization (Cho, Hong, Espelage, & Choi, 2017; Deryol et al., 2017; Schreck & Fisher, 2004; Schreck, Stewart, & Fisher, 2006; Spano & Freilich, 2009).

In this context, risky lifestyles are especially important for understanding the circumstances that increase risk of victimization (Hindelang et al., 1978). For example, scholars have found that youths who consider themselves to be part of a gang (DeLisi, Barnes, Beaver, & Gibson, 2009; Gilman, Howell, Hipwell, & Stepp, 2016; Taylor, Peterson, Esbensen, & Freng, 2007; Wu & Pyrooz, 2016), who engage in delinquent activities (Peguero, Popp, & Koo, 2015; Posick, 2013; Sullivan, Farrell, & Klierer, 2006; Tillyer & Tillyer, 2016; Turanovic & Pratt, 2014), and who associate with delinquent peers (Lauritsen & Davis Quinet, 1995; Posick, 2013; Schreck, Fisher, & Miller, 2004) are particularly vulnerable. These risky activities likely inundate youths in lifestyles that are conducive to increased exposure to other probable offenders and facilitate criminal opportunities (e.g., Schreck et al., 2004; Turanovic & Pratt, 2014; Wu & Pyrooz, 2016). Likewise, exposure to illicit opportunities is also associated with victimization experiences (Cho et al., 2017; Ramos-Lira, Gonzalez-Forteza, & Wagner, 2006). Exposure to illicit substances could be an indicator that youths are in close proximity to motivated offenders and/or in risky environments that make them attractive targets.

Alternatively, adolescents with high levels of guardianship are likely protected against victimization incidents. Scholars have generally used measures of attachment to capture an individual's level of guardianship (Esbensen, Huizinga, & Menard, 1999; Lauritsen, Laub, & Sampson, 1992; Schreck, Wright, & Miller, 2002; Spano & Nagy, 2005; Tillyer, Tillyer, Miller, & Pangrac, 2011). Individuals with prosocial attachments could spend more time with positive influences and be more likely to seek guardianship from individuals who will protect them—subsequently diminishing the probability of being targeted (Tillyer, Fisher, & Wilcox, 2011; see also Schreck et al., 2004). In this respect, strong attachments to school have been shown to significantly decrease the likelihood of victimization (Fox & Bouffard, 2015; Lauritsen et al., 1992; Schreck, Miller, & Gibson, 2003; Wilson, 2004). Ultimately, due to its simple and supported framework, L-RAT became the dominant model in the field by accounting for the different routines and lifestyles that alter victimization risk.

Low Self-Control and Victimization

In 1999, Schreck offered a competing framework that focused on how a central individual propensity or trait—low self-control—might also increase victimization risk. In contrast to

L-RAT where certain situations are theorized to increase risk, low self-control provides a theory where some individuals “tend to incur greater overall levels of absolute risk than others” (Schreck, 1999, p. 634). Essentially, characteristics of individuals can affect the types of activities they engage in that can increase their risk and whether they get victimized.

In their general theory of crime, Gottfredson and Hirschi (1990), assert that individuals with low levels of self-control increase involvement in crime and analogous behaviors. Self-control was hypothesized to be a general propensity (“criminality”) that had six elements: impulsivity, preference for simple tasks, risk seeking, physical activity, self-centered, and temper (Gottfredson & Hirschi, 1990). Although originally created to explain offender behavior, Schreck (1999) reformulated Gottfredson and Hirschi’s (1990) general theory into a theory of vulnerability. He found that individuals with low levels of self-control had an increased likelihood of experiencing personal and property crime. Even after controlling for self-reported offending, self-control maintained a direct effect on the odds of victimization. This finding suggests that there are meaningful qualities about an individual that could make them an attractive target for motivated offenders.

Subsequent research has lent credence to this line of inquiry. Pratt et al. (2014) meta-analyzed 66 studies and discovered that self-control is a useful and modest predictor of victimization. These effects were largely consistent and suggest that “the effect of self-control on victimization is generally robust regardless of variations in model specification, research design, and sample characteristics” (Pratt et al., 2014, p. 101). These findings further established the importance of capturing the effects of individual traits on victimization—ultimately, it is not enough to only examine risky lifestyles or routines.

Still, there is evidence to suggest that low self-control should be expressed in some way that increases risk for victimization (Forde & Kennedy, 1997; Henson, Wilcox, Reyns, & Cullen, 2010; Pauwels & Svensson, 2011; Pratt & Turanovic, 2016; Pratt et al., 2014; Turanovic & Pratt, 2014). For offending behavior, low levels of self-control are predicted to have a direct relationship with delinquency and other illegal behaviors (Gottfredson & Hirschi, 1990). For victimization, however, scholars have argued that self-control should be mediated by other intervening variables and the direct effect should be attenuated if not reduced to statistical nonsignificance (Forde & Kennedy, 1997; Pratt et al., 2014). Unlike offenders who choose to commit crime, individuals do not choose to be victims. Still, the manifestation of low self-control could increase an individual’s attractiveness as a target (Schreck, 1999, p. 635). If this is correct, then having low self-control should lead to behavioral choices (e.g., substance use, aggravating others, associating with delinquent peers) that increase the likelihood of being victimized. The existing research does, in fact, show that the effect of self-control is mediated by risky behaviors. Nonetheless, studies also reveal that self-control maintains a significant direct effect on victimization even after controlling for other relevant predictors (Childs, Cochran, & Gibson, 2009; Franklin, 2011; Gibson, 2012; Kulig et al., 2017; Nofziger, 2009; Schreck, 1999; Schreck et al., 2006; Tillyer et al., 2011; Tillyer, Wilcox, & Gialopsos, 2010; Wilcox, Tillyer, & Fisher 2009).

Beyond Self-Control: Assessing the Big Five

Given the relevance of low self-control theory, it raises the question of whether other personality traits also matter in determining victimization risk. One issue is whether Gottfredson and Hirschi (1990) consider self-control to be a dimension of personality. Resolving this matter is complex. In developing their concept of self-control, Gottfredson and Hirschi ignored the extensive psychological literature on this topic, which includes studies of self-regulation (see, e.g., Mischel, 2014; Tangney, Baumeister, & Boone, 2004). Instead, they assumed that offenders and non-offenders were differentiated by the individual difference or propensity to commit crimes, which they initially called “criminality” (1990, p. 88). They eventually settled on self-control, in part because it could explain not only crime but also analogous behaviors (e.g., accidents, job instability). They made the bold claim that self-control was the only individual-level factor that constituted criminal propensity, a claim later proven to be incorrect (see, e.g., Bonta & Andrews, 2017; Pratt & Cullen, 2000). Notably, Gottfredson and Hirschi rejected the role of personality traits in crime causation, arguing that there was little evidence that they mattered. It is here that they suggested that self-control was in effect a personality trait: “People who do not develop strong self-control are more likely to commit criminal acts, whatever the *other dimensions of their personality*” (1990, p. 111, emphasis added). So, while low self-control may have overlapping characteristics with other personality traits, it was developed independently as a separate element of individual criminal propensity. Regardless, the concern of the current study is to explore whether, beyond self-control, other dimensions of personality are, in fact, related to victimization.

Personality traits distinguish underlying individual predispositions that could influence behavior and experiences (John & Srivastava, 1999, p. 102)—differences that could help inform who is at greatest risk for being victimized. In psychology, a major approach conceptualizes personality as falling into the five-factor model (FFM) (Goldberg, 1990, 1992; McCrae & Costa, 1987, 2003; McCrae & John, 1992; Soto, John, Gosling, & Potter, 2011). These factors provide a hierarchical organization consisting of five personality traits known as the “Big Five”: (1) extraversion (e.g., sociability, activity, assertiveness, positive emotionality), (2) neuroticism (e.g., contrasts emotional stability with feelings of being anxious, nervous, sad, or tense), (3) agreeableness (e.g., altruism, tender-mindedness, trust, modesty), (4) conscientiousness (e.g., delayed gratification, following norms and rules, planning, organizing, prioritizing tasks), and (5) openness (e.g., originality and complexity of an individual’s mental and experiential life) (Goldberg, 1990; John, Donahue, & Kentle, 1991; John & Srivastava, 1999; McCrae & Costa, 1987; McCrae & John, 1992). Each of these dimensions is made up of subcomponents that, when combined, create an overarching personality trait.

Scholars have long known that personality is important for understanding a wide range of human behaviors. Using the FFM structure, Big Five personality traits have been identified as important sources of risky/aggressive driving (Dahlen & White, 2006), counterproductive work behavior and delinquency (Grijalva & Newman, 2015; Lee, Ashton, & de Vries, 2005; Salgado, 2002), abusive supervision at work (Henle & Gross, 2014), career success (Judge, Higgins, Thoresen, & Barrick, 1999), self-reported delinquency (Heaven, 1996), sexual

assault offending (Voller & Long, 2010), antisocial behavior (Miller & Lynam, 2001), attachment styles (Nofle & Shaver, 2006), peer acceptance (Jensen-Campbell, Adams, Perry, Workman, Furdella, & Egan, 2002), gambling behavior and motives (Tackett, Rodriguez, Rinker, & Neighbors, 2015), school absences (Lounsbury, Steel, Loveland, & Gibson, 2004), and anxiety, depression, and substance use (Kotov, Gamez, Schmidt, & Watson, 2010).

Again, in contrast to the self-control literature, studies of personality and victimization are restricted. Beyond the FFM, there have been a limited number of studies that have explored the relationship between antisocial personality traits (e.g., psychopathy, narcissism) and victimization (see, e.g., Fanti & Henrich, 2015; Ragatz, Anderson, Fremouw, & Schwartz, 2011). Some of these studies have also explored the effects of self-control in addition to antisocial personality dimensions when predicting victimization. These findings, however, are somewhat mixed. For example, research on predictors of victimization have found that psychopathy and the Dark Triad are significant direct predictors but low self-control is not (Beaver, Al-Ghamdi, Kobeisy, Alqurashi, Connolly, & Schwartz, 2016; Flexon, Meldrum, Young, & Lehmann, 2016), that both psychopathy and low self-control (impulsivity) are significant predictors (DeLisi, Tostlebe, Burgason, Heirigs, & Vaughn, 2018), and that low self-control is a significant predictor but callous-unemotional traits and narcissism are not (Fanti & Kimonis, 2013). We seek to advance this literature by using the dominant FFM model in the field of psychology to better understand traits that increase victimization risk.

Research on the FFM and victimization also is in short supply. One partial exception is with investigations of adolescent bullying victimization (Bollmer, Harris, & Milich, 2006; DeBolle & Tackett, 2013; Jensen-Campbell & Malcolm, 2007; Mulder & van Aken, 2014; Scholte et al., 2009; Tani, Greenman, Schneider, & Fregoso, 2003). Generally, research supports the notion that higher levels of agreeableness (Mulder & van Aken, 2014; Tani et al., 2003) and conscientiousness (Bollmer et al., 2006; Jensen-Campbell & Malcolm, 2007; Tani et al., 2003) are protective against victimization. Extraversion is also negatively related to victimization, but this relationship is not always significant (Bollmer et al., 2006; Jensen-Campbell & Malcolm, 2007; Mulder & van Aken, 2014; Scholte et al., 2009). Conversely, neuroticism (the inverse of emotional stability) has been identified as a risk factor (Bollmer et al., 2006; Jensen-Campbell & Malcolm, 2007; Scholte et al., 2009; Tani et al., 2003). Although not always significant, openness is often positively related to victimization (Bollmer et al., 2006; Jensen-Campbell & Malcolm, 2007; Mulder & van Aken, 2014). These findings allow for some identification of relationships, but more literature is needed to confirm whether these results are stable across different types of victimization and samples.

While research continues to assess the relationship between personality traits and victimization, there is limited research examining exactly how the FFM traits affect victimization risk. Research on the FFM generally hypothesizes how these traits are related to victimization but it does not explicitly measure the behavioral expressions of traits that could elevate the likelihood of being targeted. This is unlike research on low self-control where scholars have studied the intervening mechanisms that influence risk of victimization (e.g., Forde & Kennedy, 1997; Schreck et al., 2006; Turanvoic & Pratt, 2014). Still, it is likely that these traits influence how individuals respond to situations or how other people

respond to them that make them more or less socially vulnerable (Faris & Felmlee, 2014; Jensen-Campbell et al., 2002; Jensen-Campbell & Malcolm, 2007; Mulder & van Aken, 2014; Scholte et al., 2009; Tani et al., 2003). Youths who are successful at navigating various social situations and who are popular with peers likely will not experience much victimization because they have higher quality relationships that act as protective barriers. Conversely, youths who seem different to peers, who have poor social skills, or who associate with other adolescents who are victimized risk being seen as easy targets. Ultimately, more research is needed to understand how these traits are expressed and why they increase or decrease vulnerability.

It is important to note that not all of the FFM personality effects are consistent across studies of life outcomes, which could be an indicator that context is especially important in understanding when individual traits matter most. In particular, extraversion (e.g., Grijalva & Newman, 2015; Heaven, 1996; Kotov et al., 2010) and openness (e.g., Dahlen & White, 2006; Lee et al., 2005; Mulder & van Aken, 2014) have mixed effects for different outcome measures. For example, openness is negatively related to risky driving (Dahlen & White, 2006) but positively related to adolescent bullying victimization (Mulder & van Aken, 2014). Still, some general trends in the literature are apparent. Thus, individuals with higher levels of neuroticism tend to have poorer outcomes (e.g., Bollmer et al., 2006; Henle & Gross, 2014; Jensen-Campbell & Malcolm, 2007; Nofle & Shaver, 2006), whereas higher levels of conscientiousness and agreeableness are generally protective and/or associated with more positive outcomes (e.g., Grijalva & Newman, 2015; Heaven, 1996; Tani et al., 2003; Voller & Long, 2010). The broader point is that personality traits matter, but in what circumstances and under what conditions is still yet to be consistently established. The current study attempts to address this limitation by specifically assessing personality traits in a school context. Considering the amount of time youths spend at school, the manifestation of traits could influence how they interact with students, how peers respond to them, and their overall likelihood of being victimized.

Research Strategy

Given these considerations, the current project attempts to advance our understanding of victimization by exploring the potential effects of the Big Five on school-based victimization using a sample of ninth-grade Kentucky adolescents from the Rural Substance Abuse and Violence Project (RSVP). It should be noted that the personality measures in the RSVP data have been used in a limited way previously. Specifically, Wilcox, Sullivan, Jones, and van Gelder (2014) examined whether two dimensions of the Big Five—agreeableness and conscientiousness—were related to both offending and victimization. Agreeableness was negatively related to offending, but neither trait had a direct effect on school-based victimization. The current project expands this analysis through a systematic review of all personality dimensions of the Big Five and by juxtaposing the effects of these traits to the effects of low self-control. Accordingly, this study addresses the following research question: Are personality traits, beyond low self-control, related to school-based victimization? Examining multiple personality characteristics allows us to move beyond the single-trait of self-control and observe the influence of different aspects of personality in a specific setting—school. The broader purpose of this analysis is to explore how diverse individual traits

affect an individual's vulnerability to violence after accounting for competing victimological frameworks. Examining additional individual propensities that alter risk beyond self-control could inform future research on relevant risk/protective factors and guide preventive strategies to reduce the likelihood of adolescent victimization.

METHODS

Sample

Data for this study come from the Rural Substance Abuse and Violence Project (RSVP), which was a four-year longitudinal study of students from both urban and rural areas in Kentucky. Data collection began in the spring of 2001 and follow-up surveys were given to participants every spring for the following three years (i.e., 2002, 2003, and 2004). All 9,488 seventh-grade students across 65 public schools that agreed to participate were targeted for inclusion in the sample. Parents were mailed surveys using the "Dillman method" where initial consent letters were sent to all potential participants' parents (Dillman, 1978; Ousey, Wilcox, & Brummel, 2008). Parents who did not respond to the initial consent form were sent a reminder postcard two to three weeks later, a new cover letter and response form four to five weeks later, and a final cover letter and response form after eight weeks (Wilcox et al., 2009). Using this method, active parental consent was obtained for 4,102 adolescents, a 43% response rate. In a previous analysis of the RSVP data, Wilcox, May, and Roberts (2006, p. 510) note that the response rate for the current data set is generally consistent with other studies (response rates ranging from 35% to 60%) that have used active parental consent (Ellickson & Hawes, 1989; Esbensen, Deschenes, Vogel, West, Arboit, & Harris, 1996).

At Wave 1, 3,692 students completed the survey; follow-up surveys were collected for 3,638 students at Wave 2, 3,050 students at Wave 3, and 3,040 students at Wave 4. Missing data were largely due to (1) student transfers after parental consent was obtained and (2) student absenteeism on the day the survey was given; less than 1% of students chose not to participate. Sample attrition was not systematically related to race or gender, but victims were slightly more likely to drop out of the study than non-victims (Wilcox et al., 2009).

The Big Five personality traits analyzed in this study were only measured in the final two waves of the study when youths were in high school (Waves 3 and 4). This study focuses on initial data collection of the Big Five Inventory at Wave 3 to establish whether there is a relationship between personality traits and victimization. Additionally, due to the transition from middle to high school, students in Wave 3 were nested in a total of 53 schools at the time the survey was administered.

Dependent Variable

The dependent variable was a self-reported measure of school-based *victimization* (Wilcox et al., 2014). Adolescents spend a majority of their time at school and, even though school is expected to be monitored and safe, research has found that this is also where a large portion of victimization takes place (Finkelhor, Vanderminden, Turner, Shattuck, & Hamby, 2016; Musu-Gillette et al., 2017; Nansel, Overpeck, Haynie, Ruan, & Scheidt, 2003). Thus, the

outcome measure focusing solely on at-school victimization will likely capture a majority of adolescent experiences. Respondents were asked to indicate how many times they experienced physical assault, robbery, theft, or having a gun/weapon pulled on them on school grounds or during school-related activities in the current school year (see Appendix for all measures used in the current study). An analysis of each item indicated that a larger percentage of students reported experiencing theft (48.0%) and physical assault (33.6%) compared to more serious forms of violence (robbery = 6.5%; gun pulled = 3.6%; weapon pulled = 9.0%). Given that the measure of physical assault captures mainly minor violence (e.g., punched, slapped, kicked), the victimization scale represents both serious (i.e., robbery, gun/weapon pulled) and minor (i.e., physical assault, theft) victimization events. Responses ranged from 0 = “none” to 10+ = “10 or more” and the five items were summed to create an overall index of victimization experiences (Cronbach’s $\alpha = .78$).

Key Independent Variables

Big Five Inventory.—An instrument commonly used to assess the FFM is the *Big Five Inventory* (BFI; Bollmer et al., 2006; Mulder & van Aken, 2014; Soto, John, Gosling, & Potter, 2008). As a valid and reliable instrument (Benet-Martínez & John, 1998; John, Naumann, & Soto, 2008; John & Srivastava, 1999; Rammstedt & John, 2007; Soto et al., 2008), the BFI provides a comprehensive assessment of personality characteristics that can be used to establish their unique relationships with victimization. The BFI is a 44-item inventory created to use short phrases to measure each of the five personality dimensions: extraversion, neuroticism, agreeableness, conscientiousness, and openness (John et al., 1991). A modified version of the BFI was used to ensure the survey items were worded appropriately for the youths in the sample (e.g., original item: “is depressed, blue”; modified item: “is depressed, sad”).

Extraversion (eight items; Cronbach’s $\alpha = .71$), neuroticism (eight items; Cronbach’s $\alpha = .71$), agreeableness (nine items; Cronbach’s $\alpha = .72$), conscientiousness (nine items; Cronbach’s $\alpha = .71$), and openness (ten items; Cronbach’s $\alpha = .72$) were all measured on a five-point Likert scale where respondents were asked to indicate how much they agree/disagree with each statement (1 = “disagree strongly” to 5 = “agree strongly”). Each dimension was constructed by taking the mean of all items specified for that scale (Benet-Martínez & John, 1998; John et al., 1991; Soto et al., 2011). Several items on each personality dimension were reverse coded so higher scores indicate more of the respective personality characteristic for all scales.

Low self-control.—A measure of *low self-control* was included to establish its effect on victimization after controlling for the BFI. Low self-control was measured by averaging nine items that mainly assessed impulsivity (e.g., Jonson, McArthur, Cullen, & Wilcox, 2012; Schreck, 1999; Schreck, Ousey, Fisher, & Wilcox, 2012). While this measure differs from more standardized scales that were developed based on propositions put forth by Gottfredson and Hirschi (1990) (see Grasmick, Tittle, Bursik, & Arneklev, 1993; Schreck, 1999), meta-analyses have found that self-control tends to have general effects even when different measures are used (Pratt & Cullen, 2000; Pratt et al., 2014). Respondents were asked to indicate how true each statement was for them using four response options (1 =

“never true” to 4 = “always true”; Cronbach’s $\alpha = .90$). Higher values indicate lower levels of self-control.

Control Variables

Measures of L-RAT were included in the current analysis to capture protective and risk factors that have been associated with victimization. *Gang membership* was a single-item measure that asked respondents whether they considered themselves to be part of a gang (0 = no, 1 = yes) (e.g., Ousey, Wilcox, & Fisher, 2011; Wu & Pyrooz, 2016). Self-reported *delinquency* assessed whether the respondent engaged in a wide variety of behaviors including robbery, theft, physical assault, unwanted sexual touching, weapon carrying, and vandalism in the present school year (e.g., Lauritsen, Sampson, & Laub, 1991; Ousey et al., 2008). The thirteen items were averaged if respondents answered half or more items—higher values indicate greater involvement in delinquency (Cronbach’s $\alpha = .89$). Response categories ranged from 1 = “never” to 5 = “daily or almost daily”. Association with *delinquent friends* was measured by summing sixteen dichotomous (0 = no, 1 = yes) items asking respondents whether their friends engaged in a variety of delinquent behaviors over the past year (e.g., Schreck et al., 2004; Sullivan, Ousey, & Wilcox, 2016). Behaviors included using drugs/alcohol, taking a weapon to school, being suspended, theft, assault, and vandalism with higher scores indicating having more friends engaging in delinquency (Cronbach’s $\alpha = .90$). Access to *illicit opportunities* assessed how easily the respondent could obtain drugs, alcohol, cigarettes, or a gun (e.g., Cho et al., 2017; Ousey et al., 2007). Responses ranged from 1 = “strongly disagree” to 4 = “strongly agree.” The six-item scale was created by taking the mean if respondents answered half or more items (Cronbach’s $\alpha = .85$). Higher values imply greater access to illicit opportunities. *School attachment* was used as a proxy to capture levels of guardianship in the school context. The measure was created by taking the mean if respondents answered half or more of the seven items that asked respondents how much they agree/disagree (1 = “strongly disagree” to 4 = “strongly agree”) with statements about school (e.g., Fox & Bouffard, 2015; Ousey & Wilcox, 2005). There were several items that were reverse scored so higher values indicate greater levels of school attachment (Cronbach’s $\alpha = .75$). Since victimization in the current analysis is school based, school attachment is especially relevant for the current sample; school personnel are likely able to provide more immediate influence as potential guardians within the school context. Lastly, dummy-coded variables for *sex* (0 = female, 1 = male) and *race* (0 = non-White, 1 = White) were also included as controls in the model.

Analytic Strategy

Due to missing data, we used multiple imputation methods to create 10 imputed data sets (Acock, 2005; Carlin, Galati, & Royston, 2008; White, Royston, & Wood, 2011). Both continuous and categorical predictor variables were included in the imputation model. However, following the strategy suggested by von Hippel (2007), the outcome variable was also included in the imputation model to account for observations with missing values ($n = 41$) and then excluded from the analysis to determine its effect on model results. The broad trends and significance levels were consistent across estimations. Thus, only observations with complete data for the outcome variable were included in the final estimations. The fraction of missing information (FMI) and the relative variance increase (RVI) values from

the different imputed model results where only predictor variables were imputed were very low and suggest that the estimates were efficient (White et al., 2011). Therefore, imputed data from the ninth-grade students (Wave 3) were included in the current analysis. However, as another check, supplemental models using listwise deletion were estimated to determine whether additional missing data affected our results. The substantive results and significance levels across different models remained the same. The imputed outcome variable and listwise deletion model results are available from the authors upon request.

The current analysis was carried out in two main steps. First, we analyzed bivariate correlations between all variables to establish zero-order relationships between the key variables of interest. Second, we estimated a series of multivariate negative binomial regression models to determine whether the BFI traits and low self-control predict adolescent victimization beyond lifestyle factors. Given that the outcome measure, victimization, is a count variable with overdispersion, a negative binomial regression is appropriate (Long, 1997). An initial model using non-robust estimations confirmed that the count outcome (victimization) was overdispersed and that it was appropriate to use negative binomial models over Poisson regression (likelihood-ratio test = 7,783.14, $p < 0.001$; Long, 1997). Subsequent models were adjusted to account for non-random clustering of students within the 53 schools. Therefore, all estimates presented correct for dependence across observations and are based on robust standard errors (Cameron & Trivedi, 2010).

RESULTS

Descriptive Statistics and Correlations

Descriptive statistics for all variables are presented in Table 1. On average, respondents were 15.4 years of age (standard deviation [sd] = 0.54) and reported relatively low occurrences of victimization ($\bar{x} = 3.29$, $sd = 6.32$). The high standard deviation for victimization suggests quite a bit of variation, which is likely in part due to the high frequency of respondents who did not report any victimization (41.72% of students did not report experiencing any victimization). Examinations of bivariate correlations suggest that extraversion ($r = -0.07$, $p < 0.05$), agreeableness ($r = -0.25$, $p < 0.05$), conscientiousness ($r = -0.17$, $p < 0.05$), and openness ($r = -0.05$, $p < 0.05$) are negatively related to victimization while neuroticism ($r = 0.12$, $p < 0.05$) and low self-control ($r = 0.25$, $p < 0.05$) are positively related (see Table 2). The lifestyle variables were all significantly related to victimization in the expected direction: gang membership ($r = 0.30$, $p < 0.05$), self-reported delinquency ($r = 0.48$, $p < 0.05$), having friends who engage in delinquency ($r = 0.24$, $p < 0.05$), and access to illicit opportunities ($r = 0.18$, $p < 0.05$) are positively related to victimization while school attachment ($r = -0.26$, $p < 0.05$) is negatively related to victimization. Additionally, males ($r = 0.17$, $p < 0.05$) and non-White respondents ($r = -0.11$, $p < 0.05$) are at greater risk of being targeted. These zero-order relationships establish that both personality traits and lifestyle factors are supported as important predictors of victimization.

Predicting Adolescent Victimization

Three multivariate negative binomial regression models predicting school-based victimization were estimated (see Table 3). All estimates discussed are based on robust

standard errors to account for non-random clustering of students within schools (Cameron & Trivedi, 2010). To address our research question, the unique effects of low self-control and the BFI were first estimated separately while controlling for lifestyle measures and then all variables were included in a fully specified model. Model 1 findings indicate that even after controlling for a variety of risky lifestyles and demographic characteristics, low self-control still maintained a direct effect on victimization ($b = 0.29, p < 0.001$). All lifestyle activities were also significantly related to victimization risk and in the anticipated direction. Likewise, male respondents were at an increased risk for victimization.

In Model 2, only the traits of neuroticism ($b = 0.25, p < 0.001$) and agreeableness ($b = -0.33, p < 0.001$) were related to school-based victimization. Again, the lifestyle variables were all still significant predictors of victimization once the BFI measures were included and being male was a risk factor in the model.

Lastly, the fully specified Model 3 includes low self-control, the BFI, and control variables. The findings revealed that neuroticism ($b = 0.20, p < 0.001$), agreeableness ($b = -0.32, p < 0.001$), and low self-control ($b = 0.14, p < 0.05$) all maintained direct effects on victimization. Consistent with the previous models, all lifestyle variables and sex were still significantly related to risk of victimization. However, there is a possibility that the general propensity of low self-control could overlap with aspects of the BFI that assess components of personality. Two findings ultimately lead us to believe that this is not a significant concern. First, similar to findings in Model 1, low self-control maintains a significant direct effect in the fully specified model. This robust finding supports the idea that low self-control is an independent and relevant predictor of victimization. Second, the substantive findings of the BFI are stable even after low self-control is introduced in the model. In particular, neuroticism and agreeableness remain significant predictors of victimization with similar effects in the full model.

Sensitivity Analyses

BFI Factors.—While the BFI scales all had relatively high reliabilities (> 0.70 ; Cronbach, 1951; Nunnally, 1978; Singleton & Straits, 2010), some of the BFI bivariate correlations overlapped. Further analyses into the five factors were examined to ensure that the scales represented discriminant dimensions (Benet-Martínez & John, 1998; John et al., 1991). First, we assessed potential issues with collinearity. The variance inflation factor (VIF) values did not exceed 1.87, which is below the standard cutoff of 4.0 (Fox, 1991; Wooldridge, 2009). However, the condition index was 50.90 and somewhat higher than the recommended cutoff of 30 (Belsley, Kuh, & Welsch, 1980). Next, a confirmatory factor analysis (CFA) of the five personality dimensions was estimated (Byrne, 2012). The CFA identified cross-loading items for four of the five factors (extraversion, agreeableness, conscientiousness, openness) and the model fit indicators fell short of acceptable fit (Brown & Cudeck, 1993; Hu & Bentler, 1999). Neuroticism loaded as anticipated and did not have any cross-loadings greater than 0.30. Additional adjustments were made to account for cross-loading items and residual covariances between items, which improved the overall model fit, but still suggested that four of the five factors had items that considerably overlapped.

Respecified Model.—We cannot have full confidence in findings related to personality dimensions that do not demonstrate discriminant validity since the BFI had cross-loading items on four of the five factors. However, the dimension of neuroticism had items that appropriately loaded on its respective factor. Therefore, we estimated additional analyses to assess the effect of neuroticism on victimization without the other four BFI traits to determine its unique effect. An assessment of collinearity indicated that the highest VIF factor was reduced to 1.53 (compared to 1.87 with all variables) and the condition index dropped to 35.57 (compared to 50.90 with all variables). Still, the relatively high correlation between neuroticism and low self-control ($r = 0.40$, $p < 0.05$) suggested there could be some overlap between constructs. An additional CFA with items for neuroticism and low self-control was analyzed; respective item estimates loaded positively and significantly ($p < 0.001$) for both scales (Byrne, 2012). The model fit further improved with updated parameter specifications and confirmed that neuroticism and low self-control were appropriate as two separate constructs.

To determine whether there were additional collinearity issues between variables, we estimated a series of stepwise negative binomial regression models to examine changes to coefficients and standard errors. The coefficient for neuroticism became stronger once we controlled for sex; the standard error remained consistent across models. Based on the bivariate correlations (see Table 2), males and youths who score higher on neuroticism are more likely to be victimized ($r = 0.17$, $p < 0.05$; $r = 0.12$, $p < 0.05$, respectively), but females are more likely to have higher scores on neuroticism ($r = -0.24$, $p < 0.05$). Once the multivariate model controls for sex, the neuroticism coefficient becomes stronger and significantly related to victimization. The slightly elevated condition index is likely due to the relationship between sex, victimization, and neuroticism. The full regression model is presented in Table 4 and further validates earlier analyses where both neuroticism ($b = 0.26$, $p < 0.001$) and low self-control ($b = 0.17$, $p < 0.01$) are significantly related to victimization even after controlling for other predictors.

Latent Profile Analysis.—Given the overlap between the BFI traits, a further check was made using latent profile analysis (LPA). LPA is a type of mixture modeling that can be used to “recover hidden groups based on the means of continuous observed variables” (Oberski, 2016, p. 276). Rather than creating separate factors based on item loadings, LPA can use constructed scale means to identify group memberships of youths in the current sample. As such, LPA was estimated using the five constructed BFI scales, with and without the low self-control scale. In both analyses, six classes were distinguished by model fit indices. The model fit statistics were marginally reduced for the analysis without the impulsivity scale (Log-likelihood = $-13,667.62$; $df = 40$; AIC = $27,415.25$; BIC = $27,654.31$) compared to the model that included the impulsivity scale (Log-likelihood = $-15,591.95$; $df = 47$ AIC = $31,997.90$; BIC = $32,278.80$). The improvement in model fit statistics further demonstrates that low self-control should be studied as an independent trait from the BFI. Therefore, the low self-control scale was removed from the LPA and included as a separate independent variable.

Upon examination of the class means (see Table 5), some patterns and traits can be observed. Though, while other scholars have successfully used mixture modeling to study

fivefactor models and bullying victimization (De Bolle & Tackett, 2013), the current analysis was unable to label group classes in a parsimonious way. Still, a negative binomial regression with imputed data from the first imputation was estimated with the LPA class membership categories and additional covariates to determine if the class membership influenced victimization risk while controlling for other theoretically relevant variables. The model results are presented in Table 6. The coefficients and pattern of statistical significance were fundamentally unchanged from Model 3 in Table 3. However, individuals in LPA Class 4 and LPA Class 6 had significantly lower chances of experiencing victimization than individuals in the reference class. Individuals in these classes had the lowest means of neuroticism and the highest means of agreeableness and conscientiousness. This finding seems to indicate that individuals with higher levels of neuroticism could be at greater risk for victimization, whereas higher levels of traits such as agreeableness and conscientiousness could act as protective factors.

Overall, there appears to be ambiguity regarding certain BFI traits and their roles in understanding victimization. However, when our findings are considered in conjunction with previous victimization studies, we see evidence coalescing in support of a more nuanced model of personality. In particular, higher levels of traits such as agreeableness and conscientiousness are important as protective factors against victimization (Bollmer et al., 2006; Mulder & van Aken, 2014; Tani et al., 2003; Wilcox et al., 2014)—likely in combination with low levels of neuroticism (De Bolle & Tackett, 2013). Conversely, extraversion and openness do not appear to matter much and are likely less important for assessing victimization risk (Bollmer et al., 2006; Jensen-Campbell & Malcolm, 2007). However, low self-control has been identified as an important personality dimension for victimization independent from other traits. The result is that certain patterns of traits—and some clusters of traits—seem to matter more than others. Of course, such typologies should be examined more fully before making definitive statements to avoid abstracted empiricism. All supplemental analyses are available from the authors upon request.

DISCUSSION

The evolution of the general theory of crime (Gottfredson & Hirschi, 1990) into a theory of victimization created a paradigm shift in the field that emphasized the role of traits in understanding victimization experiences (Schreck, 1999). Rather than solely focusing on behaviors or lifestyles to explain victimization (Cohen & Felson, 1979; Hindelang et al., 1978), the theory of self-control focuses on individual propensities to account for increased risk. The robust effect of low self-control in the victimization literature has strengthened the assertion that individual traits matter (e.g., Childs et al., 2009; Franklin, 2011; Gibson, 2012; Pratt et al., 2014; Schreck et al., 2006). The volume of support for low self-control as an important predictor of victimization also opens up a potential new line of inquiry to determine whether other measures of personality dimensions can inform who is vulnerable to crime. Accordingly, the purpose of this study was to expand the self-control framework to determine whether focusing on additional personality traits contributes to our understanding of who is at risk for adolescent school-based victimization. The current empirical analysis identified two important findings.

First, in all models estimated, low self-control maintained a significant direct effect on victimization. Low self-control was found to be an important and independent predictor of vulnerability to crime even after controlling for other personality traits and risky lifestyle factors commonly hypothesized to mediate its relationship with victimization (e.g., Gilman et al., 2016; Schreck et al., 2004; Turanovic & Pratt, 2014). This finding lends credence to Schreck's (1999) initial work and further confirms that self-control should be included as an integral component in future victimization models (see Pratt et al., 2014). In other words, low self-control is a trait that should continue to be examined in analyses related to victimization and vulnerability.

Second, and independent of self-control, we found that two personality traits also had significant direct effects on victimization. In particular, neuroticism was positively related to victimization whereas agreeableness acted as a protective factor. As previously noted in the sensitivity analyses, however, there were some potential issues with overlap between four of the BFI factors: extraversion, agreeableness, conscientiousness, and openness. Therefore, we cannot have full confidence in the significant findings for agreeableness because it does not necessarily represent a discriminant factor in the current study (i.e., agreeableness had cross-loading items). Due to these measurement issues, scholars should further investigate each of these dimensions to determine their effect—especially given the findings from the LPA in the current study suggesting the protective nature of traits such as agreeableness and conscientiousness. By contrast, the analyses provide more confidence with respect to the findings for the trait of neuroticism. Here, neuroticism represented a distinct dimension of personality from the other BFI traits and low self-control. Likewise, the robust finding that adolescents with higher levels of neuroticism were at greater risk for school-based victimization was consistent across models even after low self-control was added to the analysis.

Given the findings from the current study, the traits of low self-control and neuroticism make youths especially susceptible to school-based victimization. The extant literature suggests, however, that individual traits should be expressed in some way that makes an individual more likely to be victimized (e.g., Forde & Kennedy, 1997; Henson et al., 2010; Pratt & Turanovic, 2016). In the current study, the effects of low self-control and neuroticism were relatively stable across models and were not explained away by risky lifestyles or other control variables. Therefore, it is likely that there are other behavioral expressions of these traits that are not captured in the current data set that make youths vulnerable at school. It is important to understand what these traits are really assessing in the context of a school environment to elaborate on how they might be conveyed.

Thus, youths who have low self-control and high levels of neuroticism are likely impulsive, nervous, emotional, and generally jittery. These propensities could make it difficult for adolescents to create and maintain meaningful relationships with others—possibly even leading to rejection by peers. Youths with these traits could interrupt others, come across as depressed or anxious, and/or be easily rattled. These characteristics are not a recipe for success when trying to create quality relationships that could protect youths from motivated offenders. If anything, these traits likely isolate vulnerable youths from any potential guardianship because they are unable to successfully navigate the social world around them.

In essence, it seems plausible that youths with low self-control and/or high levels of neuroticism are more likely to be perceived as annoying, irritating, or difficult to be around—ultimately making them vulnerable due to their isolation and more attractive targets (e.g., Finkelhor & Asdigian, 1996).

The findings from the current study offer three lines of inquiry for future investigation into the role of multiple personality dimensions and victimization. First, research should further examine what personality traits matter for victimization and whether these effects are general or specific to types of victimization. For example, are the same traits important for all types of victimization or do trait effects vary by victimization type? The current adolescent sample was asked about physical assault, theft, robbery, and whether a gun/weapon was pulled on them at school or during school-related activities, but there are certainly other forms of victimization and harassment that youths can experience. Perhaps the manifestation of traits matters for some types of victimization more than others.

Second, youths in the current sample with impulsive or neurotic propensities were at greater risk for victimization, but how these traits are expressed behaviorally in students' interactions is based mainly on speculation. If these traits are associated with poor social competence or lead to increased aggravation in social interactions then these are possible points for intervention. However, without more evidence to support which traits matter and how they increase risk, these interventions could be inappropriately applied (i.e., they could be targeting behaviors that might not actually be related to increased vulnerability). Subsequent studies should specifically measure behaviors that are believed to be associated with relevant personality traits to determine which expressions increase risk. A better understanding of how these traits are conveyed could also inform intervention and prevention techniques for teachers and school staff in a school setting where youths spend a majority of their time.

Third, whereas the current study established the importance of including different individual traits when assessing victimization risk, future research should address how the school environment can alter risk in combination with traits. For example, some findings suggest that the school context can influence individual risk for victimization (see, e.g., Cornell, Shukla, & Konold, 2015; Hanish & Guerra, 2000; Peguero et al., 2015). However, it is also possible that the expression of certain traits could increase vulnerability across different contexts (e.g., neighborhood, summer camps). Future studies should continue to examine this relationship to determine whether individual traits make an individual more or less at risk in a variety of environments—both inside and outside of school.

CONCLUSION

This study provides a first step in establishing the importance of including personality traits—in addition to self-control—when predicting victimization in a school setting. We encourage scholars to continue examining different dimensions of personality to further determine their effect and role as both protective and risk factors related to vulnerability. Understanding how traits are expressed provides valuable insight into what makes a student an attractive target and offers guidance into possible prevention efforts at school. Future

research should more fully evaluate personality traits across types of victimization, samples, and context to better understand their influence.

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Appendix. Survey items used to measure theoretical variables and dependent variable

Variable	Survey Items
Dependent Variable Victimization	In the current school year, how many times have the following things <u>actually happened</u> to you on school grounds or during school-related activities? <ol style="list-style-type: none"> 1. Been physically attacked (example: punched, slapped, kicked) 2. Been forced to give up your money or property 3. Had money or property stolen when you were not around 4. Had a gun pulled on you 5. Had a weapon pulled on you (knife, brass knuckles, and so on, other than guns) Responses coded as: 0 to 10+
Key Covariates Big Five Inventory	Below are a number of characteristics that may or may not apply to you. For each statement, please circle how much you agree or disagree with it. I see myself as someone who...
Extraversion	<ol style="list-style-type: none"> 1. Talks a lot 2. Is quiet around other people (reverse coded) 3. Is full of energy 4. Creates a lot of enthusiasm 5. Tends to be quiet (reverse coded) 6. Has a forceful personality 7. Is sometimes shy, inhibited (reverse coded) 8. Is outgoing, sociable Responses coded as: 1 = disagree strongly to 5 = agree strongly
Neuroticism	<ol style="list-style-type: none"> 1. Is depressed, sad 2. Is relaxed, handles stress well (reverse coded) 3. Can be tense 4. Worries a lot 5. Is not easily upset (reverse coded) 6. Can be moody 7. Remains calm in tense situations (reverse coded) 8. Gets nervous easily Responses coded as: 1 = disagree strongly to 5 = agree strongly
Agreeableness	<ol style="list-style-type: none"> 1. Tends to find fault with others (reverse coded) 2. Is helpful and not selfish with others 3. Starts fighting and arguments with others (reverse coded) 4. Has a forgiving nature 5. Is generally trusting 6. Can be cold and distant (reverse coded) 7. Is considerate and kind to almost everyone 8. Is sometimes rude to others (reverse coded) 9. Likes to cooperate with others Responses coded as: 1 = disagree strongly to 5 = agree strongly
Conscientiousness	<ol style="list-style-type: none"> 1. Does things carefully and completely 2. Can be somewhat careless (reverse coded) 3. Is a reliable worker 4. Tends to be disorganized (reverse coded) 5. Tends to be lazy (reverse coded) 6. Keeps working until the task is finished

Variable	Survey Items
	7. Does things efficiently (carefully, on time) 8. Makes plans and sticks to them 9. Is easily distracted (reverse coded) Responses coded as: 1 = disagree strongly to 5 = agree strongly
Openness	1. Is original, comes up with new ideas 2. Is curious about many different things 3. Is ingenious, a deep thinker 4. Has an active imagination 5. Is original 6. Likes art and creative things 7. Prefers work that is regular or routine (reverse coded) 8. Likes to think, play with ideas 9. Has few artistic interests (reverse coded) 10. Knows a lot about art, music or literature Responses coded as: 1 = disagree strongly to 5 = agree strongly
Low Self-Control	<i>Please mark how often the following statements are true</i> 1. I have trouble controlling my temper 2. I have difficulty remaining seated at school 3. I get very restless after a few minutes if I am supposed to sit still 4. When I am angry, I lose control over my actions 5. I have difficulty keeping attention on tasks 6. I get so frustrated that I feel like a bomb ready to explode 7. I can't seem to stop moving 8. I don't pay attention to what I'm doing 9. I am afraid I will lose control of my feelings Responses coded as: 1 = never true to 4 = always true
Control Variables	<i>Do you consider yourself a member of a gang?</i>
Gang Membership	Responses coded as: 0 = no, 1 = yes
Delinquency	In the present school year, how often have you done any of the following: 1. Forced someone at school to give up their money or property 2. Forced someone not at school to give up their money or property 3. Stolen someone's money or property at school when they are not around 4. Stolen someone's money or property not at school when they were not around 5. Physically attacked someone at school (punched, slapped, kicked) 6. Physically attacked someone not at school (punched, slapped, kicked) 7. Touched someone in a sexual manner without their consent or against their will at school 8. Touched someone in a sexual manner without their consent or against their will not at school 9. Taken a gun to school 10. Taken another weapon to school (knife, brass knuckles, and so on, other than gun or explosive) 11. Used a gun during a fight 12. Used another weapon (knife, brass knuckles, and so on) during a fight 13. Vandalized public or private property (example: destroyed property, graffiti, and so on) Responses coded as 1 = never to 5 = daily or almost daily
Delinquent Friends	Thinking about your closest friends - How many of them have done any of the following things in the present school year? 1. Smoked cigarettes daily for one week or more 2. Used smokeless tobacco daily for one week or more 3. Gotten drunk 4. Smoked marijuana 5. Used inhalants (huffing) 6. Used cocaine/crack 7. Cut school completely 8. Been suspended from school 9. Taken a gun to school 10. Taken an explosive to school 11. Taken a weapon to school (knife, brass knuckles, and so on, other than gun or explosive) 12. Gotten arrested 13. Sold marijuana or other drugs 14. Stolen someone's money or property when they were not around 15. Physically attacked someone (example: punched, slapped, kicked) 16. Vandalized public or private property (example: destroyed property, graffiti, etc.) Responses coded as: 0 = no, 1 = yes
Illicit Opportunities	During a typical school day, it is easy for someone my age to get: 1. Cigarettes 2. Alcohol 3. Marijuana 4. Inhalants (for "huffing")

Variable	Survey Items
	5. Cocaine/crack 6. A gun Responses coded as: 1 = strongly disagree to 4 = strongly agree
School Attachment	How strongly do you agree or disagree with the following statements school? 1. I care a lot what my teachers think of me 2. Most of my teachers are not interested in anything I say or do about your (reverse coded) 3. Getting an education is important to me 4. I would quit school now if I could (reverse coded) 5. Most of my classes are a waste of time (reverse coded) 6. I look forward to coming to school most mornings 7. Teachers are interested in students Responses coded as: 1 = strongly disagree to 4 = strongly agree
Sex	What is your sex? Responses coded as: 0 = female, 1 = male
Race	How do you describe yourself? Responses coded as: 0 = non-White, 1 = White

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Table 1.

Descriptive Statistics for Study Variables

	n	Mean	Standard Deviation	Minimum	Maximum
<i>Dependent Variable</i>					
Victimization	2912	3.29	6.32	0.00	50.00
<i>Key Independent Variables</i>					
BFI Extraversion	2884	3.47	0.72	1.00	5.00
BFI Neuroticism	2883	2.87	0.72	1.00	5.00
BFI Agreeableness	2884	3.71	0.63	1.00	5.00
BFI Conscientiousness	2884	3.38	0.66	1.00	5.00
BFI Openness	2884	3.45	0.65	1.00	5.00
Low Self-Control	2891	1.75	0.67	1.00	4.00
<i>Control Variables</i>					
Gang Membership (0 = no; 1 = yes)	2829	0.04	0.20	0.00	1.00
Delinquency	2888	1.13	0.36	1.00	5.00
Delinquent Friends	2886	5.32	4.32	0.00	16.00
Illicit Opportunities	2909	2.43	0.74	1.00	4.00
School Attachment	2911	3.09	0.54	1.00	4.00
Sex (0 = female; 1 = male)	2907	0.47	0.50	0.00	1.00
Race (0 = non-White; 1 = White)	2901	0.91	0.29	0.00	1.00

Note: BFI = Big Five Inventory

Table 2.

Bivariate Correlations Among Study Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Victimization	1.0													
(2) BFI Extraversion	-0.07*	1.0												
(3) BFI Neuroticism	0.12*	-0.12*	1.0											
(4) BFI Agreeableness	-0.25*	0.22*	-0.31*	1.0										
(5) BFI Conscient.	-0.17*	0.16*	-0.32*	0.54*	1.0									
(6) BFI Openness	-0.05*	0.32*	0.01	0.34*	0.21*	1.0								
(7) Low Self-Control	0.25*	0.01	0.40*	-0.39*	-0.40*	-0.01	1.0							
(8) Gang Membership	0.30*	-0.01	0.05*	-0.19*	-0.11*	-0.03	0.21*	1.0						
(9) Delinquency	0.48*	-0.05*	0.05*	-0.29*	-0.17*	-0.07*	0.33*	0.42*	1.0					
(10) Delinquent Friends	0.24*	0.07*	0.18*	-0.27*	-0.24*	-0.01	0.38*	0.22*	0.37*	1.0				
(11) Illicit Opport.	0.18*	0.09*	0.11*	-0.12*	-0.11*	0.06*	0.18*	0.11*	0.19*	0.28*	1.0			
(12) School Attach.	-0.26*	0.14*	-0.16*	0.48*	0.45*	0.20*	-0.38*	-0.18*	-0.30*	-0.33*	-0.21*	1.0		
(13) Male	0.17*	-0.23*	-0.24*	-0.18*	-0.07*	-0.13*	0.05*	0.09*	0.18*	0.03	-0.03	-0.19*	1.0	
(14) White	-0.11*	0.01	0.02	0.09*	0.07*	-0.01	-0.07*	-0.09*	-0.12*	-0.05*	-0.02	0.07*	-0.01	1.0

Note: BFI = Big Five Inventory; The sample sizes range from 2,811 to 2,912

* p < .05

Table 3.

Negative Binomial Regression Models Predicting Victimization

	Model 1				Model 2				Model 3			
	b	SE	exp(b)	z	b	SE	exp(b)	z	b	SE	exp(b)	z
BFI Extraversion	--	--	--	--	-0.00	0.05	0.99	-0.04	-0.02	0.05	0.98	-0.37
BFI Neuroticism	--	--	--	--	0.25***	0.06	1.28	4.32	0.20***	0.05	1.22	3.85
BFI Agreeableness	--	--	--	--	-0.33***	0.08	0.72	-4.19	-0.32***	0.08	0.73	-3.96
BFI Conscientiousness	--	--	--	--	-0.02	0.05	0.98	-0.46	0.00	0.06	1.00	0.002
BFI Openness	--	--	--	--	0.11	0.07	1.11	1.48	0.10	0.07	1.10	1.35
Low Self-Control	0.29***	0.06	1.34	4.83	--	--	--	--	0.14*	0.06	1.16	2.45
Gang Membership	0.42**	0.13	1.52	3.10	0.38**	0.13	1.47	2.93	0.38**	0.13	1.47	2.91
Delinquency	0.64***	0.10	1.89	6.07	0.65***	0.09	1.91	7.03	0.61***	0.10	1.85	6.36
Delinquent Friends	0.02*	0.01	1.02	2.54	0.02**	0.01	1.02	2.82	0.02*	0.01	1.02	2.44
Illicit Opportunities	0.19***	0.05	1.21	3.79	0.20***	0.05	1.22	3.93	0.19***	0.05	1.21	3.86
School Attachment	-0.32***	0.08	0.73	-4.23	-0.20**	0.07	0.82	-2.88	-0.18*	0.07	0.83	-2.59
Male	0.43***	0.07	1.54	5.84	0.50***	0.08	1.65	6.18	0.49***	0.08	1.63	5.83
White	-0.16	0.12	0.86	-1.34	-0.18	0.12	0.84	-1.49	-0.16	0.12	0.85	-1.39
Constant	0.05	0.40		0.13	0.35	0.53		0.66	0.19	0.56		0.34
Mcfadden's R ²	0.04				0.04				0.04			
Nagelkerke R ²	0.17				0.19				0.19			
FMI Maximum	0.02				0.05				0.05			
RV1 Average	0.01				0.02				0.02			
Number of observations	2,912				2,912				2,912			

Note: BFI = Big Five Inventory; Models were estimated with robust standard errors and model fit statistics were averaged across the 10 imputed data sets

* p < .05

**

p < .01

*** p < .001

Table 4.

Negative Binomial Regression Model Predicting Victimization

	b	SE	exp(b)	z
BFI Extraversion	--	--	--	--
BFI Neuroticism	0.26***	0.05	1.30	5.16
BFI Agreeableness	--	--	--	--
BFI Conscientiousness	--	--	--	--
BFI Openness	--	--	--	--
Low Self-Control	0.17**	0.05	1.19	3.20
Gang Membership	0.40**	0.13	1.50	3.12
Delinquency	0.66***	0.10	1.94	6.69
Delinquent Friends	0.02*	0.01	1.02	2.45
Illicit Opportunities	0.19***	0.05	1.21	3.70
School Attachment	-0.30***	0.07	0.74	-3.99
Male	0.53***	0.08	1.71	6.91
White	-0.21	0.12	0.81	-1.74
Constant	-0.60	0.40		-1.52
McFadden's R ²	0.04			
Nagelkerke R ²	0.18			
FMI Maximum	0.03			
RVI Average	0.01			
Number of observations	2,912			

Note: BFI = Big Five Inventory; Model was estimated with robust standard errors and model fit statistics were averaged across the 10 imputed data sets

*
p < .05

**
p < .01

p < .001

Table 5.

Six Class Latent Profile Analysis Solution for BFI Domains (N = 2,912)

	Class 1		Class 2		Class 3		Class 4		Class 5		Class 6	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
BFI Extraversion	2.81	0.06	3.30	0.03	3.43	0.08	3.26	0.06	3.79	0.04	3.89	0.05
BFI Neuroticism	2.72	0.06	3.08	0.03	3.64	0.08	2.62	0.05	2.89	0.04	2.11	0.06
BFI Agreeableness	2.83	0.04	3.31	0.02	3.19	0.07	4.08	0.03	3.99	0.03	4.52	0.03
BFI Conscientiousness	2.86	0.04	3.02	0.02	2.71	0.07	3.82	0.04	3.47	0.04	4.32	0.04
BFI Openness	2.14	0.05	3.20	0.02	4.10	0.07	3.04	0.04	3.85	0.04	4.04	0.03
Class probabilities	0.05		0.37		0.06		0.14		0.27		0.11	

Note: BFI = Big Five Inventory; M = mean; SD = standard deviation

Table 6.

Negative Binomial Regression Model Predicting Victimization

	b	SE exp(b)	exp(b)	z
LPA Class 1 (reference group)	--	--	--	--
LPA Class 2	-0.11	0.25	0.90	-0.42
LPA Class 3	0.07	0.30	1.07	0.23
LPA Class 4	-0.64 *	0.25	0.53	-2.57
LPA Class 5	-0.31	0.26	0.73	-1.22
LPA Class 6	-0.64 *	0.30	0.53	-2.12
Low Self-Control	0.22 ***	0.06	1.24	3.73
Gang Membership	0.39 **	0.13	1.47	2.98
Delinquency	0.60 ***	0.09	1.83	6.46
Delinquent Friends	0.02 *	0.01	1.02	2.57
Illicit Opportunities	0.20 ***	0.05	1.22	4.21
School Attachment	-0.18 *	0.07	0.83	-2.51
Male	0.43 ***	0.08	1.54	5.73
White	-0.17	0.12	0.84	-1.42
Constant	0.07	0.43		0.16
McFadden's R ²	0.04			
Nagelkerke R ²	0.18			
Number of observations	2,912			

Note: LPA = Latent Profile Analysis; Model was estimated with robust standard errors and imputed data from the first imputation

*
p < .05

**
p < .01

p < .001