JUVENILE DELINQUENCY OUTLIERS: AN ANALYSIS OF HIGH RATE OFFENDERS AND PURE CONFORMISTS

by

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DEDICATION

To Matthew and Jensen, without whom none of this would be possible or worth it

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ABSTRACT

While the study of juvenile delinquency and young adult crime has a long history in a variety of disciplines, including criminology, criminal justice, sociology, and psychology, much of the research has been focused on the normalcy of law-violating behavior—the vast majority of young people break the law at some point, do so in groups, and age out of crime by early adulthood. Typically this delinquency is relatively minor and infrequent. There has been little research on two of the most interesting outliers of youthful crime and delinquency, namely high-rate offenders and pure conformists. There is much to be learned from the experiences of those juveniles and young adults who deviate from the statistically normal pattern of minor group offending during adolescence.

Data from Waves I and II of the National Longitudinal Study of Adolescent to Adult Health are analyzed using conjunctive analysis of case configurations, binary logistic regression, and multinomial logistic regression in order to uncover correlations between the groups of juveniles. The results of these analyses indicate that there are at least two distinct types of pure conformity—active and passive pure conformists. Active pure conformists likely sit on the opposite end of the delinquency spectrum from high-rate offenders. There is mixed evidence as to whether passive pure conformists are more similar to high-rate offenders than they are to either active pure conformists or statistically normal juveniles. Considerations for future research, as well as limitations of the current work, are also discussed.

I. INTRODUCTION

Almost all people commit crime at some time in their lives, most commonly during their youth (Farrington, 1986; Gibbs, 1975; Stolzenberg & D'Alessio, 2008; Sweeten, Piquero, & Steinberg, 2013). Typically, juvenile delinquency is committed by groups of youths (see for example, Erickson, 1971, 1973; Erickson & Jensen, 1977; Hindelang, 1976; Reiss, 1986, 1988; Shannon, 1991; Shaw & McKay, 1931; Warr, 2002), and law-violating behavior does not continue far into adulthood (Moffitt, 1993, 1997, 2003, 2006). In a statistical sense, then, youth criminality is statistically normal behavior (Farrington, 1983). The purpose of this study is to examine deviations (outliers) from this normal behavior: high-rate offenders (those who violate the law at a substantially higher frequency than their peers) and pure conformists (those who do not violate the law at all). These groups have been treated by most researchers as outliers and have sometimes been removed from analyses of delinquent and criminal behavior (Cernkovich, Giordano, & Pugh, 1985; Cullen, 2011; Nye, 1956; Nye & Short, 1957; Short & Nye, 1957). Hence, their careful examination is long overdue.

Delinquency and Young Adult Crime

Delinquency is most commonly committed by male juveniles, is adolescence-limited, relatively minor, and is characterized by group offending (see generally, Moffitt, 1993; Reiss, 1986, 1988; Warr, 2002). These patterns extend into early adulthood. There has been a wealth of research in a variety of academic disciplines on this typical youthful offender. The focus of this study however, is on those youthful individuals who violate the law at a higher frequency than their peers and those who never break the law.

Males commit a disproportionate amount of delinquency (see generally, Caspi, Moffitt, Silva, Stouthamer-Loever, Krueger, & Schmutte, 1994; De Brito, Mechelli, Wilke, Laurens, Jones, Barker, Hodgins, & Viding, 2009; Farrington, 1983; Felson & Haynie, 2002; Loeber, Farrington, Stouthamer-Loeber, Moffitt, & Caspi, 1998; Loeber, Hoeve, Slot, & van der Laan, 2012; Moffitt, 1993; Moffit & Caspi, 2001; Moffitt, Caspi, Harrington, & Milne, 2002; Nagin et al, 2005; Odgers, Moffitt, Broadbent, Dickson, Hancox, Harrington, Poulton, Sears, Thompson & Caspi, 2008; Reppucci, 1999; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Van Mastrigt, & Farrington, 2009; Wolfgang, Thornberry, & Figlio, 1987). Moreover, they are more likely than females to be high-rate offenders. On the contrary, females may be more likely to be pure conformists, as they tend to be less delinquent on average. To the extent this is the case, the most deviant juveniles would be male pure conformists and female high-rate offenders. The complexity that gender adds to the study of outliers of juvenile behavior with respect to crime and delinquency cannot be ignored, and, therefore, its impact must be investigated.

High-rate offenders. High-rate offenders are those youths who commit delinquency at a substantially higher frequency than their peers. Because they are outliers from the normal (statistical) pattern, they have received relatively little attention in the existing literature. These individuals may also be more likely to engage in predominately solo-offending. Lone offenders are juveniles who commit the majority of their offenses without an accomplice. Findings concerning predominantly lone offenders—including a greater likelihood of increased offense severity (Cernkovich et. al, 1985; Erickson & Jensen, 1977; Hindelang, 1976) and evidence suggesting that these

individuals are more problematic in a number of ways (see generally, Bijleveld et. al, 2007; Bijleveld & Hendriks, 2003; Erickson & Jensen, 1977; Warr, 2002)—indicate that they are likely to become what Moffitt (1993) refers to as "life-course persistent offenders." Life-course persistent offenders commit crimes with higher frequency and severity, and are more likely to violate the law without an accomplice. An understanding of high-rate offenders may also help to better elucidate the role of peers in adolescence and young adulthood, thus furthering current theories about the causes of law-violating behavior. It also is possible that the profile of a high-rate offender may require a theoretical paradigm separate from that of the normal youthful offender.

Pure conformists. Young people reporting that they have never broken the law have been labeled as "pure conformists" (Erickson, Stafford, & Galliher, 1984). On average, pure conformists, along with non-cooperators in self-report surveys, comprise approximately 10% of the juvenile population (Nye & Short, 1957), thereby solidifying their status as statistical outliers. Pure conformists, however, have sometimes been excluded from analyses (see generally Nye, 1956; Nye & Short, 1957; Short & Nye, 1957). Nevertheless, it is possible that there is much to be gleaned about the behavior of young offenders—generally the most crime-prone life stage—through the careful inspection of those who never violate the law.

Purpose of the Study

The vast majority of juveniles commit at least one delinquent act (Farrington, 1986; Gibbs, 1975; Stolzenberg & D'Alessio, 2008; Sweeten, Piquero, & Steinberg, 2013). Studies of delinquency agree that juvenile crime is most often adolescence-limited (law-violating behavior desists in late adolescence or early adulthood) and peer-

involved (see generally, Moffitt, 1993; Reiss, 1986, 1988; Warr, 2002). Regularly, youthful individuals who do not fit this characterization—outliers including high-rate offenders and pure conformists—receive little attention.

Research on these deviant groups is sparse. Self-report studies consistently show that only a small minority of juveniles and young adults report offending at a high-rate (Moffitt, 2006) or never having violated the law (see generally, Nye, 1956; Nye & Short, 1957). Historically, these two groups have been deleted from delinquency studies as noise or error (Cernkovich et. al, 1985; Cullen, 2011; Nye, 1956; Nye & Short, 1957; Short & Nye, 1957, 1959). Most often, they have either been simply excluded from analyses, as is sometimes the case with pure conformists, or, in the case of high-rate offenders, have failed to be designated as distinct from the statistically normal offender.

Gladwell (2008) asserts that "we learn more from extreme circumstances than anything else … [and] it's those who lie outside ordinary experience who have the most to teach us" (p. 6). Hence, high-rate offenders and pure conformists may provide the most insight into youthful behavior. Sullivan (2011) highlights the growing movement in criminology for alternative methods of theory construction, including the inspection of deviant cases. Additionally, Cullen (2011) contends that it is time for the field to build a "new criminology" (p. 309) that goes beyond adolescence-limited delinquency, which is statistically normal youthful behavior, thereby insinuating a call to investigate the extremes.

Proposed Study

The present study seeks to examine outliers from statistically normal youthful behavior—high-rate offenders and pure conformists. Specifically, rather than causation,

the aim is to identify predictors, or correlates of these two groups and how they differ from more statistically normal youth. This will include variables identified in theories of crime and delinquency.

The next chapter (Chapter 2) reviews relevant literature about normal youthful offending and related findings. Additionally, gaps in the literature are identified. Chapter 3 offers a comprehensive methodological plan for the research, including hypotheses, discussion of variable selection and creation, explanation of the analytical plan for the study, and a brief overview of applicable methodological considerations. Chapter 4 presents the results of the study. These findings are further interpreted and more fully discussed in Chapter 5, along with limitations of this study and directions for future research.

II. REVIEW OF THE LITERATURE

Normal Youthful Offending

There has been extensive research in a variety of academic disciplines devoted to youthful offending. A number of conclusions garnering wide support have emerged regarding normative behavior among young people. Research has consistently shown that much criminality is concentrated in adolescence, with law-violating behavior peaking between middle adolescence and early adulthood (Farrington, 1986; Gibbs, 1965, 1975; Stolzenberg & D'Alessio, 2008; Sweeten, et. al, 2013). Moreover, the vast majority of individuals break the law at least once, most often during the crime-prone years of adolescence and early adulthood (Farrington, 1983). While young people do sometimes commit serious criminal acts, most of their offenses are relatively minor (Farrington, 1983).

Additionally, research has consistently found that regardless of age and type of criminal offense, criminal behavior is disproportionately committed by males (see generally, Saspi, Moffitt, Silva, Stouthamer-Loever, Krueger, & Schmutte, 1994; De Brito et al., 2009; Farrington, 1983; Felson & Haynie, 2002; Loeber, Farrington, Stouthamer-Loeber, Moffitt, & Caspi, 1998; Loeber, Hoeve, Slot, & van der Laan, 2012; Moffitt, 1993; Moffit & Caspi, 2001; Moffitt, Caspi, Harrington, & Milne, 2002; Nagin et al, 2005; Odgers, Moffitt, Broadbent, Dickson, Hancox, Harrington, Poulton, Sears, Thompson & Caspi, 2008; Reppucci, 1999; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Van Mastrigt, & Farrington, 2009; Wolfgang et. al, 1987).

Self-report studies indicate that males account for approximately 80% of offenses committed by young people (Schwartz & Steffensmeier, 2007).

Another reliable finding is that youthful offending is predominately group behavior (see for example, Erickson, 1971, 1971; Erickson & Jensen, 1977; Hindelang, 1976; Reiss, 1986, 1988; Shannon, 1991; Shaw & McKay, 1931; Warr, 2002). Also, research consistently has found most law-violating behavior by youth to be adolescence-limited (Moffitt, 1993, 1997, 2003, 2006). This means that there often occurs a natural process of aging out of crime, with most juveniles desisting from their law-violating behavior by early adulthood (Knight & West, 1975). Taking these widely supported research findings into account, a profile of the (at least statistically) normal offender emerges—a young, male, adolescence-limited delinquent involved in minor acts of group offending. With regard to outliers of juvenile behavior, however, the increased delinquency of males may make it more likely for them to be high-rate offenders, while females may be more likely to be pure conformists. Additionally, high-rate offenders may be more likely to engage in serious law violations and to resist the natural process of aging out of crime, therefore becoming what Moffitt (1993) terms life-course persistent offenders.

Age and crime. Research on age and offending has uncovered what has been referred to as the "age-crime curve" (Dean, Brame, & Piquero, 1996; Farrington, 1986; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013), with criminal offending peaking in middle- to late-adolescence before dropping sharply and remaining low throughout adulthood. Figure 1 presents the age-crime curve (adapted from Empey, Stafford, &

Hay, 1999). Empey and colleagues used arrest data to compute their figure; however, self-report data display a similar curve with a slightly earlier peak age.

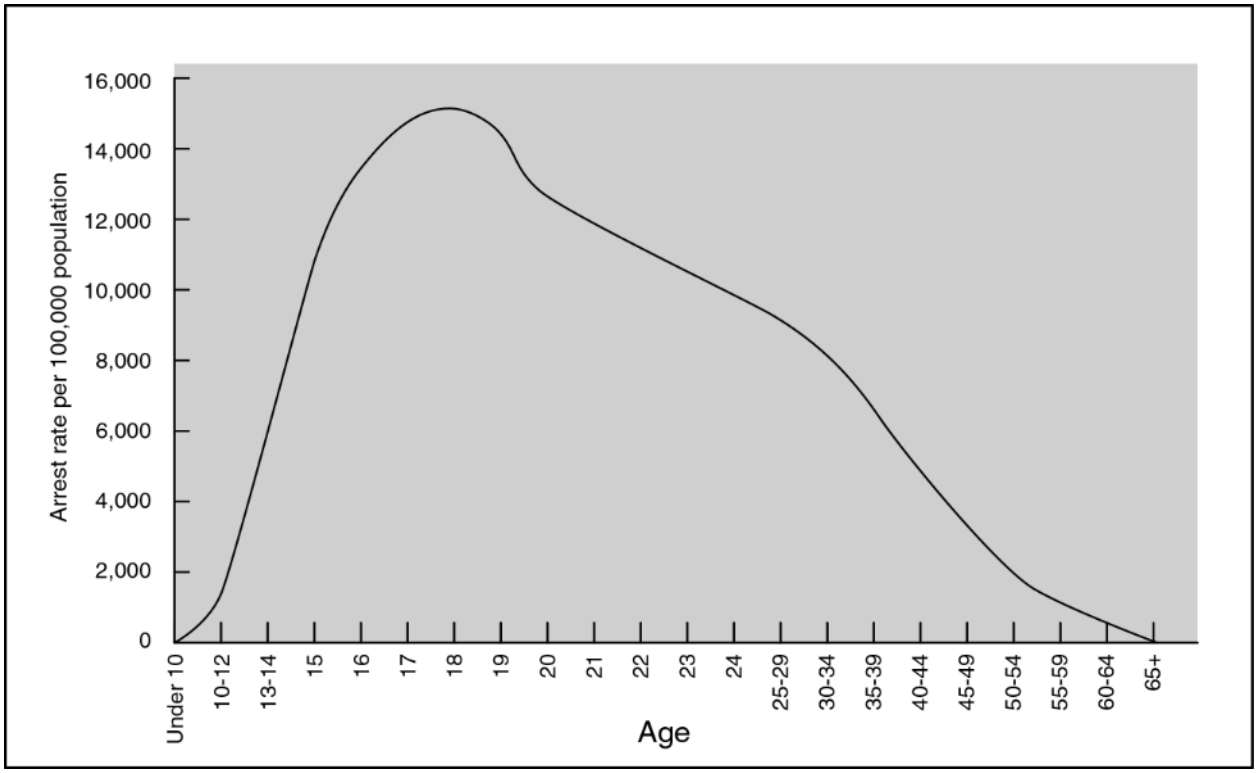

Figure 1. Age-Crime Curve.
Note: Adapted from Empey, Stafford, and Hay (1999).

The age-crime curve is revealed from official, victimization, and self-report data (Hirschi & Gottfredson, 1983; Stolzenberg & D'Alessio, 2008), and researchers have found that it is likely due to a drastic increase in the prevalence of crime during this life stage (Farrington, 1983; Moffitt, 1993; Wolfgang et al., 1987), as opposed to an increase in the incidence of offending. Thus, the adolescent peak is attributable to an increase in the number of offenders, adolescence-limited offenders in particular, rather than an increase in the rate of offending by a small group of active delinquents.

Interestingly, puberty is a transformational process that begins at approximately the same time as juvenile crime spikes, triggering major changes in the biological, emotional, and social development of adolescents. Research has shown that boys who

physically mature earlier are more likely to engage in deviant behavior, including delinquency, than boys who physically mature later (De Brito et al., 2009; Sowell, Thompson, Tessner, & Toga, 2001). Due to the timing of the juvenile crime spike and puberty, coupled with the greater inclination toward delinquency of earlier maturing boys, Felson and Haynie (2002) proposed the predisposition hypothesis, which asserts that if pubertal development creates a predisposition to engage in delinquency, social factors (such as the influence of delinquent peers) may impact whether this predisposition actually culminates in law-violating behavior. The researchers found that pubertal development had substantial effects on different types of adolescent delinquency, such as violence, property crime, and drug use, including an increase in frequency of offending (Felson & Haynie, 2002).

During puberty, many biological changes occur, including rapid neurobiological transformations that are reflected in cognitive, emotional, and abstract reasoning, as well as changes in moral development (Arredondo, 2003; Giedd, 2004; Giedd, et al., 1996; Sowell et al., 2001), which greatly affect the reasoning ability and impulsivity of adolescents (Jolliffee & Farrington, 2009). This makes it easier for adolescents to violate the law (Jolliffee & Farrington, 2009). During adolescence, a series of maturational transformations occur in the brain as a result of hormonal changes and the accrual of experience (De Brito et. al, 2009; Giedd, 2004; Giedd et al., 1996; Sowell et. al, 2001; Windle, et al., 2009). Such changes include an increase in gray matter through the time period just prior to the teenage years, followed by a decrease in gray matter volume in the cerebral cortex, which may be due to developmental processes (Windel et. al, 2009). Such stark transformations in the brain, which tend to subside by approximately age 25

(Windel et al., 2009), in a relatively short amount of time undoubtedly affect adolescent behavior, including the prevalence of offending.

Furthermore, puberty is accompanied by significant growth in cognitive processes, which include the abilities to plan, maintain information in the conscious realm, solve complex cognitive tasks, and exhibit self-regulation and inhibitory control (Windle et. al, 2009). This often culminates in a phase of questioning authority, spurred by an increase in the ability for abstract thought (Windle et. at, 2009). The ongoing development of self-regulation and inhibitory-control capabilities brought on by pubertal development, coupled with the rapid accrual of experience in adolescence, is very likely related to the juvenile crime spike. Modern neurobiologists agree that experience affects brain development, which impacts how one processes and interacts with the environment (see generally, De Brito et. al, 2009; Giedd, 2004; Giedd et. al, 1996; Sowell et al., 2001; Windle et al., 209). The intense changes in the brain brought on by puberty coupled with an increase in juvenile offending during these years indicate that delinquency is statistically normal behavior.

It has been widely theorized that the crime spike is closely tied with the increase in emotional states reported by pubertal adolescents (Windle et. al, 2009). There is a tendency for youth to more acutely experience highly emotional events and exhibit more episodes of rule-violating behavior (Windle et. al, 2009). Youth typically process emotionally-charged decisions in the limbic system—the part of the brain tasked with instinctive, often impulsive, reactions (Arredondo, 2003; Jolliffee & Farrington, 2009). This may, at least partially, explain why young people are more intensely emotional, impulsive, and willing to take more risks than their older adult counterparts (Baird, et al.,

1999; Jolliffee & Farrington, 2009). Some researchers have found that emotional responses in juveniles have little inhibition. Baird and colleagues (1999) found support for this when they consistently witnessed reduced prefrontal cortex activity in juvenile study participants, as compared to older adult participants, as they identified emotions perceived in pictures of people's faces. This suggests that emotional responses of juveniles have little inhibition, likely playing a role in crime-prone adolescence and young adulthood (Baird et. al. 2009). The presence of drastic emotional changes entailed in puberty bolsters the proposition that offending exacerbated by the natural developmental process is statistically normal behavior.

Moreover, sleep patterns and arousal regulation, which change substantially during adolescence, causing adolescents to stay up later at night and rise later in the day as a result of pubertal development, have been hypothesized to impact the age-crime curve (Windle et al., 2009). The changes in sleep patterns and arousal regulation, combined with fluctuations in emotional states and an increase in episodes of rule-violating behavior, are associated with larger changes in behavioral regulation (Windle et. al, 2009). This may increase the risk for the development of numerous types of psychopathologies, including higher rates of depression, social anxiety disorder, various behavior disorders, and substance abuse (as well as many other psychopathologies) among individuals in the crime-prone age group (Windle et. al, 2009). This lends further support to the assertion that rapid brain and emotional development caused by puberty and the juvenile crime spike are more than coincidence. In addition to biological and emotional development that occur during puberty and affect law-violating behavior,

rapidly changing social relationships during adolescence and young adulthood involving family and peers, impact the likelihood of crime (Arredondo, 2003; Windle et. al, 2009).

The key aspects of pubertal development during adolescence—rapid biological, emotional, and social growth—are widely believed to affect young people's decisions to commit crime, suggesting that delinquency is statistically normal behavior (Arredondo, 2003; Felson & Haynie, 2002; Windle et. al, 2009). Yet, it is not understood how some juveniles are able to avoid the negative impacts of puberty completely with regard to delinquency. Pure conformists would appear, at least on the surface, to be unaffected by the rapid biological, emotional, and social changes incurred during this life stage. Rather than engage in law-violating behavior as their peers do, they are able to refrain from delinquency, though they are assumed to be experiencing the same pressures during this tumultuous period as their delinquent peers. In addition, while the majority of adolescents naturally age out of law-violating behavior as puberty subsides, high-rate offenders may not. It is possible that they are more likely to become life-course persistent offenders (Moffitt, 1993), though puberty resolves normally. It is unknown how, if the convergence of puberty and a spike in juvenile delinquency are related, some individuals are able to remain unaffected by this (i.e., pure conformists) while others seem to be impacted more significantly (i.e., high-rate offenders).

As more is learned about the process of moving from childhood to adulthood, increased insight into the age-crime curve should follow. Yet, other explanations of the age-crime curve have emerged, generally focusing on life-course approaches (see generally, Farrington, 1973, 1983; Moffitt, 1993, 1997, 2003; Nagin, Farrington, & Moffitt, 1995; Sampson & Laub, 1993; Warr, 2002). A number of researchers point to

the existence of a maturity gap among adolescents and young adults, contending that while often physically mature, they do not assume adult roles or assert autonomy for a substantial period of time (Moffitt, 1993, 2006; Warr, 2002).

Adolescence is a period distinct from both childhood and adulthood (Moffitt, 1993), and thus, delinquency may emerge as a way of asserting autonomy. Moffitt (1993, 1997, 2003) suggests that the age-crime curve obscures two distinct groups of delinquents –adolescence-limited and life-course persistent offenders. Adolescence-limited offenders desist from crime by early adulthood, and make up the vast majority of juvenile offenders (Moffitt, 1993, 1997, 2003). She contends that adolescence-limited offenders imitate the behavior of life-course persistent offenders (those who engage in crime throughout their lifetimes), as the latter group portrays some characteristics consistent with adulthood, such as possessions that are otherwise unavailable, as a result of their previously established delinquency (Moffitt, 1993, 1997, 2003). This point supports the research of Asch (1956), which found that the higher the perceived status of a group member, the higher the level of conformity of the group, even when the agreed-upon behavior is deviant to the group. Based on these ideas, Moffitt (1993, 1997, 2003) asserts that the substantial increase in the number of delinquents during adolescence is attributable to a large group of juveniles exhibiting statistically normal behavior (i.e., adolescence-limited, peer delinquency) modeling a small group of more serious, active, and possibly life-course persistent offenders.

Gender and crime. Research is clear that a reliable predictor of law-violating behavior is gender, with males more likely than females to commit crime at all ages (see generally, Caspi et. al, 1994; De Brito et al., 2009; Farrington, 1983; Felson & Haynie,

2002; Loeber et. al, 1998; Loeber et. al, 2012; Moffitt, 1993; Moffit & Caspi, 2001; Moffitt et. al, 2002; Nagin et al, 2005; Odgers et. al, 2008; Reppucci, 1999; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Van Mastrigt, & Farrington, 2009; Wolfgang et. al, 1987), though the age-crime curve holds for both male and female offenders (Loeber et. al, 1990; Loeber et. al, 2012; Moffitt & Caspi, 2001; Odgers et. al, 2008). The differences in male and female offending, termed the gender gap in crime, while small for minor violations of law, is quite large for serious crimes (Fergusson & Horwood, 2002; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996) with older males who are slightly more experienced in offending often serving as a criminal instigator in delinquent groups (Warr, 1996).

A number of explanations for the gender gap in criminal offending have been offered, including both traditional and gendered criminological theories. Among traditional crime theories, structural, social process, and control theories have directly addressed the observed differences in male and female law-violating behavior. Structural theories, such as anomie theory and conflict theory, contend that factors such as poverty and inequality bring about a substantial portion of conventional crime, with both male and female offenders coming disproportionately from lower socioeconomic status backgrounds (Schwartz & Steffensmeier, 2007). The gender gap is then explained as a consequence of success and monetary goals being less important for females than for males (Schwartz & Steffensmeier, 2007). Females are theorized to be "less subject than males to the cultural emphasis on material success" (Steffensmeier & Allan, 1996, p. 473), and therefore, less interested in criminal activity to obtain such goals.

Social-process approaches, such as differential association theory, typically explain conventional crime in terms of a disparity in opportunities for learning criminal beliefs and skills (Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996). Differential association theory, proposed by Sutherland (1947), contends that while females endure the same forces that result in criminal behavior among males, their exposure is different. This differential exposure for females results lower in crime rates (Sutherland, 1947). It is anticipated that males adopt criminogenic beliefs and learn techniques of criminal offending through interactions with delinquent peers (Steffensmeier & Allan, 1996). Females also have interactions with delinquent peers, but they do not learn from them in the same way or to an equal degree as males (Sutherland, 1947). Thus, the gender gap in criminal offending is a consequence of females having reduced access to opportunities for criminal socialization (Schwartz & Steffensmeier, 2007).

Agnew's (1992) general strain theory argues that stress increases the likelihood of negative emotions, which in turn, create pressure to take action to correct the strain. One possible response to this pressure is crime, as it can be a method for reducing strain. General strain theory builds on previous strain theories by identifying additional categories of strain, such as the loss of positive stimuli, the presentation of negative stimuli, and new categories of goal blockage (Agnew, 2001, p. 319). Though both males and females are subjected to strain, Broidy and Agnew (1997) assert that they often differ in their emotional reactions, which explains gender differences in crime and delinquency

In contrast to other traditional criminological theories, social control theorists argue that the majority of law-violating behavior is the result of weak social bonds

(Hirschi, 1969; Schwartz & Steffensmeier, 2007). Based on this, it is hypothesized that both male and female youthful offenders are disproportionately members of dysfunctional families, have lower levels of academic achievement, and exhibit weaker stakes in conformity (Schwartz & Steffensmeier, 2007, p. 57). It is the increased socialization toward bonding behavior on the part of females, coupled with their greater supervision by parents, that explains the gender gap in crime (Schwartz & Steffensmeier, 2007, Steffensmeier & Allan, 1996).

While there is no doubt some utility in the use of traditional criminological theories in explaining the gender gap in crime, there has been a recent push for a gendered theory of offending, arguing that such a theory would better elucidate both male and female crime by "taking into account the ways in which the continued profound differences between the lives of women and men shape the different patterns of female and male offending" (Schwartz & Steffensmeier, 2007, p. 59). Generally, gendered theories of crime assert that females do not have the same access to criminal opportunities or the same level of motivation to commit crimes as males due to differences in moral development, physical strength, aggression, sexuality, and gender norms (Steffensmeier & Allan, 2000).

Based upon the findings regarding gender and delinquency, it is plausible, with regard to outliers of juvenile delinquency, that females are more likely to be pure conformists while males are more likely to be high-rate offenders. It follows then, that the most deviant juveniles may be male pure conformists and female high-rate offenders, as both are likely to be uncommon in the general population. However, this has yet to be closely investigated, having been largely ignored by traditional studies of juvenile

delinquency. The current work addresses this gap by striving to clarify the impact of gender on outliers of juvenile behavior, namely pure conformists and high-rate offenders.

Group offending. One of the most consistent findings in the delinquency literature concerns the tendency for juveniles to commit crimes with peers (Warr, 2002), which was first revealed by official statistics (see for example, Erickson, 1971, 1971; Reiss, 1986, 1988; Shaw & McKay, 1931) and self-report studies (see for example, Erickson & Jensen, 1977; Hindelang, 1976; Shannon, 1991). In fact, the best predictor of delinquency and youth criminality, other than the existence of prior offending behavior, is association with delinquent and/or criminal peers (Agnew, 1991; Moffitt, 1993, 1997, 2003; Elliott & Menard, 1996; Reiss, 1986).

Adolescent social development, characterized by rapidly changing relationships involving family and peers, has an impact on crime. "Childhood is an intense period of rapid development culminating in the tasks of identity formation and social integration" (Arredondo, 2003, p. 13). Emotional distancing from parents increases during this time period (Windle et. al, 2009), and developmental tasks are sensitive to environmental influences (Arredondo, 2003). Adolescents are characterized by a struggle for autonomy from adults upon whom they must still depend, while simultaneously seeking greater social and emotional independence in young adulthood (Arredondo, 2003; Windle et. al, 2009). These individuals typically spend less time in family activities and more time in the company of largely unsupervised peer groups (Giordano, 2003; Reckless, 1937; Windle et. al, 2009).

According to Hirschi (1969), a social bond is one's connectedness to society that acts as a barrier to crime. Consequently, deviant behavior, including crime and

delinquency, is the result of the weakening or severing of one or more social bonds (Hirschi, 1969). Hirschi (1969) proposes that social bonds consist of four elements: attachment, commitment, involvement, and belief. Attachment, defined as a sensitivity and affection for others, facilitates the internalization of society's norms. Faced with an opportunity for crime, individuals with strong attachment to others consider the impact their actions may have on those close to them (Hirschi, 1969). Therefore, individuals with weak attachment are more likely to break the law. Commitment refers to the stake one has in following the rules that could be lost if he or she committed delinquent or criminal behavior (Hirschi, 1969). A person who is not heavily committed to society, or who does not have a lot of investment in conventional goals, such as educational and occupational goals, or social institutions, such as marriage, is more likely to commit crime and/or delinquency because there is little to lose as a result of such behavior. Involvement examines how time can act as a restraint; if individuals are engaged in conventional activities, they have less time to commit crime. Individuals who believe strongly that crime is wrong are less likely to take advantage of criminal opportunities (Hirschi, 1969). The less people think that rules have moral authority, the more easily they can find excuses or rationalizations for crime.

A weakness of Hirschi's (1969) social control theory is that it ignores the importance of delinquent and/or criminal associates, which has been found to be strongly related to youthful offending (see for example, Agnew, 1991; Dean et. al, 1996; Erickson, 1971, 1971; Erickson & Jensen, 1977; Haynie & Osgood, 2005; Hindelang, 1976; McGloin & Nguyen, 2012; Ouellet, Boivin, Leclerc, & Morselli, 2013; Reiss, 1986, 1988; Shannon, 1991; Shaw & McKay, 1931; Thornberry, Lizotte, Krohn, Farnworth, &

Jan, 1994; Warr, 1996, 2002; Warr & Stafford, 1991). This limitation is particularly relevant as it is precisely within unsupervised peer groups that youthful offending is most likely to occur.

Sutherland's (1947) differential association theory asserts that crime and delinquency are a consequence of attitudes favorable to crime which are acquired through intimate social interaction with peers. Research by Warr and Stafford (1991) however, suggests that delinquency is not primarily a consequence of attitudes acquired from peers, but instead "stems from other social learning mechanisms, such as imitation or vicarious reinforcement, or from group pressure" (p. 851).

Akers' (1973) social learning theory builds upon differential association theory by incorporating reinforcement, punishment, and observational learning while simultaneously focusing on normative definitions. "It is through direct and observational learning that definitions of law become associated with positive and negative reinforcements and punishments" (DeCoster, 2011, p. 134). Accordingly, the likelihood that an individual will break the law depends on the reinforcement history associated with definitions favorable and unfavorable to crime. Thus, under the social learning perspective, youthful offending is most likely to occur when it becomes a norm within a group and the law-violating behavior is reinforced (Akers, 1973).

Young people have a greater inclination to respond to peer influence than do older adults (Giordano, 2003; Reppucci, 1999). Research has shown that peer influence contributes heavily to the development of beliefs, behaviors, choice of leisure activities, and personal preferences during adolescence, which has the potential to lead to risky behavior, including criminal offending (Giordano, 2003; Reppucci, 1999; Windle et al.,

2009). Warr (2002) suggests that the peak in the age-crime curve is caused by a change in the number of delinquent peer associations among juveniles. Given the increase in the prevalence of offending during adolescence (Farrington, 1983; Loeber & Snyder, 1990; Moffitt, 1993; Wolfgang et. al, 1987), bidirectional causality between offending and delinquent peers has been proposed (see for example, Thornberry, 2006), as an increase in the number of offenders allows for more delinquent peer exposure. Interestingly, peer influence appears to operate through two processes—social comparison and social conformity. Through social comparison, youths begin to model their behavior after the behavior of others, leading them to adapt their actions and attitudes to those of their peers. This leads to social conformity, which appears to peak at around age 15. It is when a youth seeks out criminal and/or delinquent peers that social conformity becomes concerning, as this often leads to law-violating behavior.

Research has shown a clear and consistent positive correlation between association with deviant peers and rates of crime and substance abuse or dependence at all ages (see for example, Fergusson, Swain-Campbell, & Horwood, 2002; Kramer & Vaquera, 2011). The greater need for acceptance experienced by adolescents and young adults, coupled with an underdeveloped social self, impacts the likelihood of criminal behavior when youths orient themselves to delinquent or criminal peer groups (Hindelang, 1971). Additionally, youths who have diminished or difficult relationships with their families orient toward peers at a greater rate, which can facilitate an overwhelming need for acceptance by peer groups (Windle et al, 2009). Yet, research has found that the group nature of youthful offending is more likely with some forms of

crime than with others (Hindelang, 1971), and in some particular physical locations that aid a youth's search for a suitable co-offender (Andresen & Felson, 2010).

Building on the finding that youthful offending tends to be committed by groups, researchers have devoted a substantial amount of attention to delineating their characteristics, including the degree of stability and role definitions, gender and age composition, the degree of offense specialization, and group size. Offending groups are highly unstable with a high-rate of membership turnover, many times having a lifespan only as long as the offense itself (Warr, 2002). This is a major difference between informal youthful offending groups and adolescent gangs (Short & Strodtbeck, 1965; Yablonsky, 1959). Additionally, delinquent groups often portray some degree of offense specialization; however, it is not uncommon for individual offenders to commit different types of offenses with different groups (Warr, 1996). Based on this finding, Warr (1996) concluded that delinquent groups often specialize in a specific type of offending more than the individuals that make up a group. While instigators in delinquent groups tend to be older, slightly more experienced males, it is common for offenders to fill the role of leader in one group and follower in another (Liu, Patacchini, Zenou, & Lee, 2012; Warr, 1996). This suggests that roles are not fixed, but rather are highly responsive to group dynamics and membership (Liu et. al, 2012; Warr, 1996).

Turning specifically to group size, Warr (2002) distinguishes between "offending groups and larger accomplice networks" (p. 36). Offending groups tend to be small—averaging two to four members (Reiss, 1986, 1988; Reiss & Farrington, 1991; Shaw & McKay, 1931; Warr, 2002), while accomplice groups or networks are large (Haynie, 2001; Liuet. al, 2012; Short & Strodtbeck, 1965; Reiss, 1986; Warr, 1996). Reiss and

Farrington (1991) assert that within large delinquency networks, there exist a small number of high-rate offenders, often resisting the natural desistance process. These often recruit other youths into delinquent groups and offending networks (Reiss & Farrington, 1991). This point is bolstered by findings the vast majority of young people break the law at least once, with a relatively small percentage of offenders are responsible for the majority of offenses (Bijleveld & Hendricks, 2003; Moffitt, 1993). High-rate offenders have larger networks of delinquent and/or criminal peers and associate with other high-rate offenders (Moffitt, 1993; Reiss, 1986; Warr, 2002), as well as report lone offending behavior (Knight & West, 1975). Furthermore, as adolescence begins to meld into full adulthood, group offending becomes less common across all offense types (Reiss & Farrington, 1991, Warr, 1996) and the incidence of lone offending increases substantially among a few offenders as the majority of individuals begin to desist from crime (Dean et. al, 1996; Knight & West, 1975; Moffitt, 1993, 1997; Reiss & Farrington, 1991; Warr, 2002).

Outliers of Youthful Behavior

Theoretical and empirical focus has been dominated by the exploration of statistically normal youthful behavior—adolescence-limited, peer offending, especially by males. One characteristic of adolescents that has been theorized to aid in the common existence of group offending is conformity (Patacchini & Zenou, 2012). Allport first proposed what he referred to as the J-curve hypothesis of conforming behavior in 1934. He asserted that conformity—a similarity of behavior or appearance—follows a regular pattern (an inverted J-curve) as most people conform to social rules or norms (Allport, 1934). Figure 2 presents Allport's (1934) J-curve hypothesis of conforming behavior,

where the vast majority of individuals regularly conform to societal norms with only infrequent deviations; few people over- or under-conform (Allport, 1934).

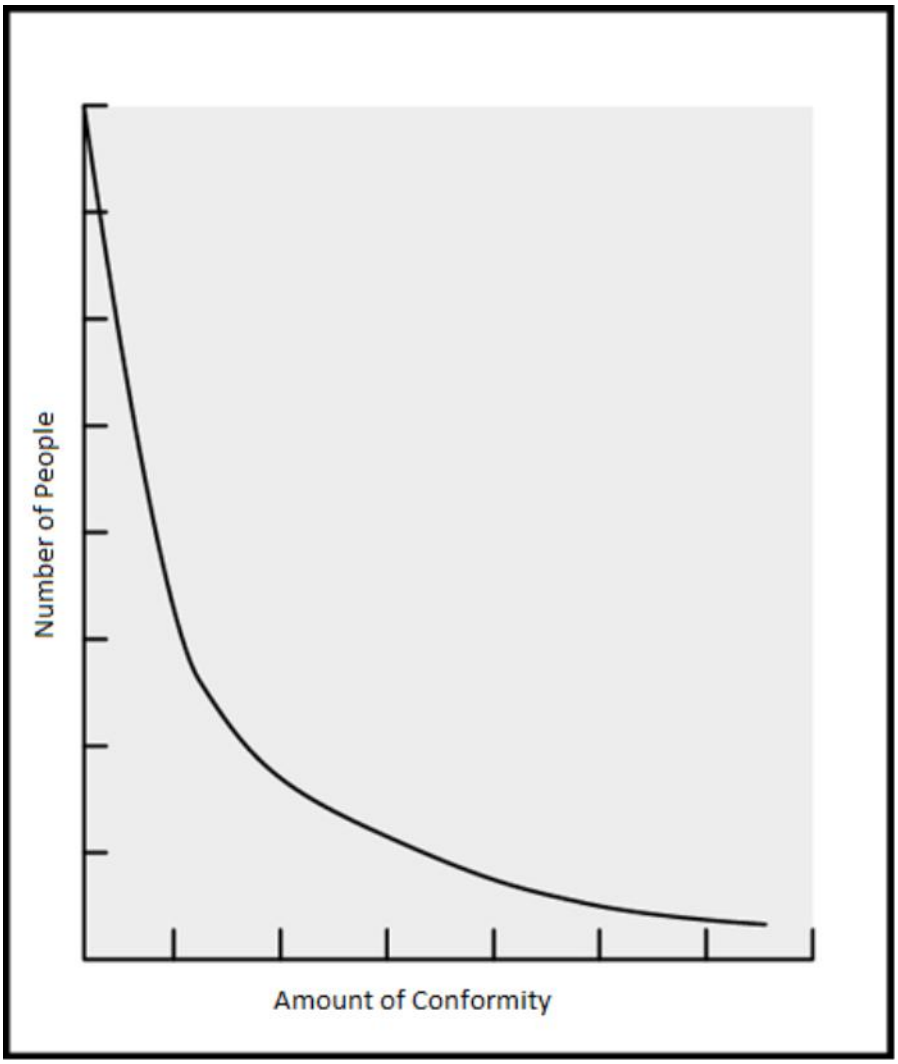

Figure 2. J-Curve Hypothesis of Conforming Behavior.
Note: Adapted from Allport (1934).

Building upon Allport's (1934) work, Sherif (1936) conducted experiments with the goal of unveiling the existence of group norms. He found that individuals were changed, consciously or unconsciously, by the group experience, thereby increasing their conformity to group norms established through interactions of individuals and the leveling-off of extreme opinions (Sherif, 1936). This results in a consensus that has a tendency to be a compromise—even if the agreed-upon behavior violates the law. Later research (see generally, Asch 1951, 1952, 1955, 1956; Milgram, 1961; Sherif & Sherif, 1953) further clarified the existence of conformity, even when the agreed-upon group

behavior would be incorrect, immoral, illegal, or deviant to the rest of the population. Asch (1956) found that conformity tends to increase as the size of the group increases, though there is little change in this phenomenon once the group size has become optimal (four or five members). Furthermore, his research suggested that the vast majority of individuals conform, as they tend to be concerned with normative influence, or what other people think (Asch, 1956; Hirschi, 1969). As Sutton and colleagues assert, "People are … profoundly sensitive to the expectations of others" (as cited in Hirschi, 1969, p. 5).

This phenomenon is even more evident among youths who place such great stock in what their peers think (Giordano, 2003; Reppucci, 1999; Windle et al., 2009), undoubtedly impacting the high offending rates for this group. Yet, what is to be made of those who do not conform to the norms of youthful behavior, or conversely, over-conform to broader societal norms? What characteristics differ in young high-rate offenders and pure conformists that keep them from acting in compliance with the majority (i.e., committing relatively minor acts of group offending during adolescence and young adulthood)?

High-rate offenders. In contrast to normal group-oriented, adolescence-limited delinquents, high-rate offenders are youths who commit criminal and/or delinquent offenses at a substantially higher frequency than their peers. On the continuum of youthful behavior, high-rate offenders lie at one of the extremes. Because of their status as outliers, high-rate offenders have been given relatively little academic attention. Often, typical high-rate offender crimes include more serious offenses (Cernkovich et. al, 1985; Erickson & Jensen, 1977; Hindelang, 1976), and researchers have found that several offenses are more likely to be committed by a single perpetrator than with peers

(see for example, Bijleveld & Hendriks, 2003; Borum, 2013; Erickson, 1971; Erickson & Jensen, 1977; Hindelang, 1976; Hochstetler, Copes, & DeLisi, 2002; Kreager, 2004; Reiss & Farrington, 1991; Warr, 2002). Taken together, these findings concerning high-rate offenders highlight the need to investigate them as compared to normal youthful offenders as doing so would add significant knowledge to the understanding of youthful offending.

Moreover, greater insight into high-rate offenders may also help to better elucidate the role of peers in adolescence, improving theoretical models aimed at explaining youth crime. Youthful law violators who commit offenses at a high frequency are often predominantly lone offenders (Reiss & Farrington, 1991; Terranova & Vandiver, 2014; Warr, 1996). However, high-rate offenders tend to associate with other high-rate offenders (Moffitt, 1993; Reiss, 1986; Warr, 2002), as well as report lone offending behavior (Knight & West, 1975). This makes the role of peers for high-rate offenders unclear. Do they have larger than average friendship networks? Are they more susceptible to peer influence, or are they more likely to engage in solo-offending?

Some offenses are known to be more group-oriented, such as alcohol consumption, drug use, burglary, and vandalism, while others have been found to often be committed by lone offenders, including assault, running away from home, fighting, and sexual offenses (Erickson, 1977; Hindelang, 1871, 1976; Morgan, Brittain, & Welch, 2012). Within these law-violations, relatively little research has been devoted to group participation at the individual level, but it is clear that some offenders are primarily lone perpetrators, while others are primarily co-offenders (Bijleveld & Hendriks, 2003; Bijlevelld, Weerman, Looije, & Hendriks, 2007; Reiss & Farrington, 1991; Warr, 1996).

A substantial amount of evidence suggests that young offenders who commit law-violations at a high frequency are more problematic in a number of ways. There is evidence that the most frequent offenders, those who are most likely to be life-course persistent offenders (Moffitt, 1993, 1997, 2003), are known to be responsible for the majority of crimes (Bijleveld & Hendricks, 2003). Research has found that the most serious offenders are "life-course persistent antisocial individuals [which] are few, persistent, and pathological" (Moffitt, 2006, p. 570). These individuals often have a long history of behavioral problems, characterized by social isolation as well as negative interactions with family and peers (Bijleveld et. al., 2007; Bijleveld and Hendriks, 2003; Demuth, 2004; Kreager, 2004; Moffitt, 1993, 1997, 2003, 2006; Moffitt & Caspi, 2001). Additionally, it is these same offenders who are often responsible for recruiting other adolescents into delinquent and/or criminal peer groups and co-offending networks (Haynie, 2001; Liu et. al, 2012; Reiss, 1986; Reiss & Farrington, 1991; Short & Strodtbeck, 1965; Warr, 1996, 2002). Taken together, these characteristics describe high-rate offenders as a small group of individuals who are qualitatively distinct from the larger group of normal youths who engage in adolescence-limited delinquency (Moffitt, 1993, 2006).

According to Moffitt (2006), life-course persistent offenders often exhibit behavioral problems in childhood, have an early onset of delinquency, and continue their criminal lifestyles well into adulthood, creating a prognosis that is bleak due to substance abuse, chronic under- or unemployment, debt, homelessness, violence, unstable and abusive relationships, and psychiatric illness (Moffitt, 1993, p. 679). High-rate offenders, especially those perpetrating sexual crimes, are more neurotic, impulsive, socially

isolated, and criminally experienced than others (Bijleveld et. al, 2007; Bijleveld & Hendriks, 2003; Morgan et. al, 2012; Vandiver, 2010). It is these characteristics of life-course persistent antisocial individuals that are suggestive of psychopathology, setting them apart from the behavior of adolescence-limited delinquents (Moffitt, 2006). As such, the profile of a high-rate offender may require a theoretical paradigm separate from that of the typical young offender.

One classic example of a juvenile high-rate offender is Shaw's (1930) jack-roller Stanley, who portrayed many of Moffitt's (2006) characteristics of a life-course persistent offender. Shaw (1930) reported that Stanley came from a chaotic home life characterized by poor family relationships, had an early onset of delinquency beginning around age six, learned criminal techniques from older delinquent peers at a very young age before becoming a primarily lone offender, and later acted as a leader and a recruiter for criminal networks when he occasionally engaged in group offending. Snodgrass' (1982) follow-up with Stanley 50 years later showed a lifetime of under- and unemployment, failed marriages, substance abuse, continued criminality, and struggles with mental illness that resulted in at least two separate confinements in mental hospitals. Interestingly, Shaw's (1930) work, which is perceived to be foundational in criminology, especially studies of delinquency, centers on an individual who exemplifies the characteristics of a high-rate offender—a topic that has received relatively little attention. Clearly, the investigation of individuals like Stanley, those high-rate offenders at one extreme of behavior, is long overdue.

It is important to note in any discussion of high-rate offenders that these individuals and loners are not automatically synonymous. Loners are social isolates who

have little to no peer interaction, choosing instead to stick to themselves (Demuth, 2004). While it is possible that high-rate offenders are socially isolated or rejected, this is not necessarily the case. It is possible for high-rate offenders to have many friends, but commit offenses alone, even if their friends are also delinquent or criminal. High frequency offending, therefore, does not necessarily equate to loner status, nor does it exclude the possibility of peer influence. Demuth (2004) and Kreager (2004) compared the delinquency of juveniles with friends to that of loners, finding the latter to be less delinquent than their social counterparts. Such findings bolster Moffitt's (2006) argument that life-course persistent offenders do engage in co-offending where they serve as leaders and recruiters for delinquent groups and offending networks. Based on these findings, it seems that the loners described by Demuth (2004) are not synonymous with Moffitt's (2006) life-course persistent offenders.

Kreager (2004) strengthens this point further as he distinguished peer-*rejected* social isolates from those who are peer-*neglected*. Social isolates who are peer-rejected are characterized by peer conflict and low family attachment (Kreager, 2004). Conversely, peer-neglected social isolates simply have little to no contact with peers, but tend to have adequate family relations (Kreager, 2004). Kreager (2004) found that peer-rejected isolates are far more likely than peer-neglected isolates and normal adolescents to associate with offending peers. These findings are consistent with the emerging profile of a lone offender as one who is pathological and distinct from typical youth. Sullivan (2011) argues that there is much utility in the deviant case for the development of criminological theory, and it is apparent that careful inspection of a possible link between peer-rejected social isolates (Kreager, 2004) and life-course persistent antisocial

individuals (Moffitt, 1993) may offer a stronger profile of a distinct type of extreme adolescent behavior—one that may require a different set of theoretical premises.

Pure conformists. Lying at the opposite end of the continuum of youthful behavior from high-rate offenders are pure conformists, or those reporting that they have never broken the law. These individuals can be said to exemplify over-conformity (see generally, Allport, 1934), an extreme of youthful behavior. Cohen (1959) states that "a theory of deviant behavior not only must account for the occurrence of deviant behavior, it must also account for its failure to occur," (p. 463) as "the explanation of one necessarily implies the explanation of the other" (Stinchcombe, 1965, p. 4). Yet, most theories of youthful offending ignore pure conformists (see generally Nye, 1956; Nye & Short, 1957; Short & Nye, 1957).

Law violating behavior is a norm of youthful behavior (Erickson et. al, 1984). Regarding two distinct attributes of norms, Gibbs (1965) distinguishes collective evaluations from collective expectations. Collective evaluations, the most commonly recognized characteristic of a norm, relate to how people *ought* to behave, which implies shared beliefs (Gibbs, 1965, p. 589). Conversely, collective expectations refer to predictions about how people *will* behave (Gibbs, 1965). In general, people believe that individuals should obey the law; the collective evaluation is that youths should comport themselves in such a way that they conform to society's rules. In reality though, the collective expectation is that young people will act in ways that are rebellious, making statistically normal youthful behavior include some level of law violation. Most people fully expect all young people to violate the law at one time or another and to do so "consciously and deliberately" (Gibbs, 1965, p. 589); yet, the belief that youths ought not

to do this persists. The norm for youths with regard to behavior, then, is law violation, essentially resulting in pure conformity being counter-normative (Erickson et. al, 1984) or contrary to societal expectations because minor group offending during adolescence and early adulthood is widely viewed as (at least statistically) normal behavior.

Generally, control theories begin with the Hobbesian assumption that people are fundamentally selfish and pleasure-seeking (Hirschi, 1969). Thus, while other criminological theories suppose that there must be some catalyst to cause criminal behavior, control theories typically assume that the desire to commit crime is innate (Hirschi, 1969). What needs to be explained then, under this line of reasoning, is why some people resist the temptation to break the law. While social control theory emphasizes how connectedness in society deters crime and eliminates opportunities for it to occur, self-control theory, which is more applicable to the unique perspective of the pure conformist, refers to the habit of refraining from choosing short-term pleasure out of fear of long-term negative consequences (Hirschi, 1965). Therefore, an individual's appreciation of long-term negative consequences affects many behaviors, including crime and delinquency (Hirschi, 1969).

Low self-control, according to Gottfredson and Hirschi (1990), results in a number of distinctive personality traits including impulsivity, adventure-seeking behavior, self-centeredness, a minimal tolerance for frustration, a lack of diligence, and an inability to defer gratification. Criminality and delinquency are appealing to those individuals with low self-control (Gottfredson & Hirschi, 1990), which is a pronounced characteristic of adolescence and early adulthood (Arredondo, 2003; Jolliffe & Farrington, 2009; Windle et. al, 2009). On the contrary, pure conformity may be

attributable to extremely high levels of self-control. Thus, according to self-control theory, one would expect pure conformists to be cautious, avoid risk-taking behavior, demonstrate selflessness, have a high tolerance for frustration, be diligent, and have mastered the ability to defer gratification (or resist temptation in the short-term).

Active versus passive pure conformists. With regard to pure conformity, there exists the possibility that individuals characterized as this type of outlier are not a homogenous group. Rather, it is plausible that at least two types of pure conformists can be observed in the population. The first group, termed active pure conformists, can be thought of as the stereotypical model child. They excel at a wide variety of activities, including educational aspirations. Most importantly, active pure conformists make a conscious choice not to violate the law, though they have opportunities to do so. They are able to resist temptation by peers to engage in delinquency as they strive for excellence in all aspects of their lives. Because of this, it is likely that these individuals may be somewhat socially awkward, as their pursuit of perfection is likely to alienate them from their peers.

The other type of pure conformist can be called the passive pure conformist. Like active pure conformists, passive pure conformists are also statistically deviant; though research investigating their existence and normative deviance is sparse. A passive pure conformist is likely to be an individual who is not necessarily a model child, but rather a peculiar juvenile who is rather inconspicuous. While active pure conformists are hypothesized to excel, their passive counterparts are not, though both groups are likely to be social awkward. It is likely that passive pure conformists and some portion of Demuth's (2004) loners are one in the same. Their loner status likely contributes to their

lack of delinquency, as passive pure conformists are not purposely choosing to strictly abide by the law, but rather they are provided no opportunities due to their lack of peers. Clearly, it is plausible that at least two distinct types of pure conformity exist, making an investigation into this possibility appropriate for and timely in the current work.

Gaps in the Research

Research on youthful offending has overwhelmingly focused on statistically normal behavior committed by the vast majority of individuals—relatively minor, adolescence-limited group offending. Researchers, however, have largely ignored the existence of outliers or extremes of youthful behavior, including both high-rate offenders and pure conformists (see generally, Nye, 1956; Nye & Short, 1957; Short & Nye, 1957). In line with this reasoning, Short and Nye (1957) advocated for the inclusion of internal consistency questions in self-report surveys "designed to catch the random respondent, the over-conformist, and the individual who is out to impress the researcher with his devilishness" (p. 211). This practice resulted in the systematic removal of the outliers of youthful behavior—high-rate offenders and pure conformists—from inclusion in analyses. While widely adopted, this results in the exclusion of data pertaining to, and therefore the study of, the extremes of youthful behavior. The soundness of such a practice can be called into question when one considers what information may be gleaned from the study of high-rate offenders and pure conformists.

According to Sullivan (2011), "recent reviews of the normal practices of the field of criminology suggest the need to explore alternative means of building theory" (p. 905). One only needs to turn to the work of Bottoms (2008), Tittle (1995), Weisburd and Piquero (2008), and Wikström (2008) among others to see the growing support for

alternative methods of theory construction. In light of this movement, attention has been paid to the utility of the deviant case. The use of the deviant case method has facilitated theoretical development in other social sciences as well as shown great utility in some areas of criminological inquiry (Sullivan, 2011, p. 905). Such an assertion undeniably applies to the study of criminal and delinquent offending as the inspection of the deviant case, or outliers of statistically normal youthful behavior, offers a potential avenue for enhancing theory directed at explaining behavioral extremes.

Deviant case analysis allows for insight to be drawn from unavoidable inconsistencies that surface as one tries to reconcile theoretical perspectives with real-world data (Sullivan, 2011, p. 907). Recognizing the utility in this practice, as more routine examination of outliers is likely to be fruitful for the discipline, a number of researchers have employed deviant case analysis for studying criminality. Reckless, Dinitz, and Murray (1961) used deviant case analysis to study juvenile males who refrained from delinquency, though they resided in high crime neighborhoods. Giordano (1989) utilized deviant case analysis to identify youths who should have been delinquent according to theory, but were not, as well as those who committed delinquency though theory predicted that they would refrain from doing so. Laub and Sampson (1998) assessed theoretical expectations using a mixed-method approach prior to seeking out individuals for further investigation whose profiles contradicted key theoretical propositions. While findings from studies like those of Giordano (1989), Laub and Sampson (1998), and Reckless and colleagues (1961) may not necessarily invalidate current criminological theories, they may call for greater attention to conditional effects (George & Bennett, 2005).

Despite recently gaining momentum, the push for the examination of outliers in the study of crime and delinquency is still relatively rare. Cullen (2011) asserts that the paradigm of adolescence-limited criminology, "although producing enormous good, is now bankrupt" (p. 289), as it leaves out too much, is unlikely to produce any more knowledge of value, will not allow the discipline to do any good for society, and entertains opportunity costs that are far too high. The general disregard shown for the outliers of youthful behavior—including high-rate offenders and pure conformists—by researchers certainly bolsters Cullen's (2011) argument that the field desperately needs to build "a new criminology" (p. 309). The reluctance to devote attention to the extremes of youthful behavior is absolutely a gap in the research that is begging to be addressed.

Proposed Research

The present study seeks to address this gap in the literature regarding outliers or extremes of youthful behavior. As adolescents overwhelmingly participate in statistically normal delinquency—adolescence-limited, group offending—the current research focuses on two particular types of individuals historically excluded from analyses: high-rate offenders and pure conformists. The current study does not consider causation, but rather is seeking to uncover characteristics that are correlates of high-rate offending and pure conformity. Specifically, the following question will guide this research: *What are differences among high-rate offenders, normal juveniles, and pure conformists?*

Research questions. Building upon the previous literature regarding statistically normal offending and conformity, three broad areas of research will guide the analysis. Because little academic research has been devoted to the study of high-rate offenders and pure conformists in the realm of youthful behavior, the current study is novel, therefore,

not requiring the construction of specific hypotheses. Each analysis will test variables from major theories of juvenile delinquency in order to distinguish among the groups—normal adolescents, high-rate offenders, and pure conformists. For example, it is possible that pure conformists, as compared to normal adolescents, spend an inordinate amount of time with their parents or have no friends, each of which would contribute to their lack of offending. With regard to high-rate offenders, it may be the case that they have a highly dysfunctional family or no friends with whom to offend. The focus of the current research is not how individuals become pure conformists or high-rate offenders, but rather how they are distinct and whether or not the same key variables predict membership in the three groups simultaneously.

Research area 1: High-rate offenders versus statistically normal juveniles. The first research area focuses on comparing high-rate offenders—those youths who commit delinquent acts at a high frequency—to statistically normal adolescents. Accordingly, there is a single question:

(1) What are the distinguishing characteristics of high-rate offenders as compared to statistically normal juveniles, that may influence their choice to commit delinquency at a greater frequency?

With regard to the comparison of high-rate offenders to statistically normal juveniles, it is possible that they are more likely to be older adolescent males with lower rates of school attendance, social controls (including attachment to parents and religiosity), and self-control.

Research area 2: Pure conformists versus statistically normal juveniles. The second research area centers on pure conformists—those youths who do not commit any

delinquent acts—as compared to statistically normal adolescents. Therefore, there is a single research question:

(2) What are the distinguishing characteristics of pure conformists, as compared to statistically normal juveniles, that may influence their choice to abstain from offending?

With regard to the comparison of pure conformists to statistically normal juveniles, it is possible that they are more likely to be younger adolescent females with higher rates of school attendance, social controls (including attachment to parents and religiosity), and self-control. It is also plausible that pure conformists are heterogeneous, and an investigation into the possibility of different types of pure conformity may need to be added to the current work depending on these findings.

Research area 3: Pure conformists versus high-rate offenders. The third research question concentrates on pure conformists as compared to high-rate offenders, which contains a single research question:

(3) How do pure conformists compare to high-rate offenders with regard to attributes such as self-control, peer delinquency, etc.?

While it is assumed that these two groups are extreme opposites of one another, it is possible that they have some commonalities that contribute to their statistically deviant behavior, albeit in different directions.

Research area 4: Active versus passive pure conformists. The first research question focuses on comparing active to passive pure conformists, involving a single research question:

(4) How do active and passive pure conformists differ with regard to attributes such as self-control, peer delinquency, etc.?

As it is hypothesized that pure conformists are not a homogenous group, there are likely to be significant differences between active and passive pure conformists with regard to the independent variables of interest. A later table will present general predictions as to how these groups may differ.

Research area 5: Outliers of normal juvenile behavior. The final research area focuses on all outliers or deviants. It is presumed that high-rate offenders and pure conformists make up opposite ends of the same spectrum of youthful behavior, with statistically normal adolescents lying in between. Because high-rate offenders and pure conformists both lie on the spectrum of youthful behavior, it is necessary to not only investigate how each type of outlier compares to the mean, but also how the extremes of behavior compare to one another. Taking this point into consideration leads to the following research question:

(5) How do the distinguishing factors of high-rate offenders, statistically normal youths, and pure conformists compare with each another?

Additionally, it is hypothesized that the outliers of juvenile behavior—high-rate offenders and pure conformists—have distinguishing characteristics (especially with regard to peers) that are more similar to one another they are to statistically normal youths

III. METHODS

In order to address the research questions that are the focus of the current study, both qualitative and quantitative methodologies are employed. A single dataset is first analyzed using a qualitative method: conjunctive analysis of case configurations. This information gained from that analysis is used to inform the quantitative analysis, which employs both bivariate and multivariate logistic regression.

Data

Publically accessible data from Waves I and II of the National Longitudinal Study of Adolescent to Adult Health (Add Health) are utilized in the current research. Add Health, funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development with cooperative funding from 23 other federal agencies and foundations (Barnes, Beaver, & Boutwell, 2011, p. 923) and distributed by the Inter-university Consortium for Political and Social Research,

> Combines longitudinal survey data on respondents' social, economic, psychological and physical well-being with contextual data on the family, neighborhood, community, school, friendships, peer groups, and romantic relationships, providing unique opportunities to study how social environments and behaviors in adolescence are linked to health and achievement outcomes in young adulthood. (ICPSR, n.d., para. 1)

Respondents were enrolled in grades 7 through 12 during Wave I, administered in 1995 (Kelly & Peterson, 1997). A stratified random sampling procedure resulted in 132

schools being included in the study[1] (Kelly & Peterson, 1997). Within these schools, each student was asked to complete a self-report questionnaire during a designated class session. A subsample of students was then selected for a follow-up interview in their homes, along with their parent(s) or guardian(s). This resulted in information from 20,745 adolescents and 17,700 caregivers (Harris et. al, 2009). Approximately one year after the in-home interviews, Wave II data were collected through the use of in-home interviews using a nearly identical instrument.

The current research utilizes the public-use version Waves I and II of Add Health, which includes only a subset of respondents from the full, restricted access dataset. The public-use data contain information collected in 1994 through 1996 from Add Health's nationally representative sample of youth and include information from the in-school questionnaire, Wave I parent questionnaire, and Wave I and II home interview (Kelly & Peterson, 1997).

Sample. Each respondent was assigned an identification number in the datasets allowing for them to be matched across waves. There were 6,504 respondents included in Wave I. Of those respondents included in Wave I, 4,775 were able to be matched to Wave II. This left a total sample of 4,775 respondents from which normal juveniles, pure conformists, and high-rate offenders could be identified. As correlation, rather than causation, is the goal of the current research, this technique is appropriate.

Offenses. With regard to law-violations, 15 questions in Wave I ask respondents about their involvement in a wide range of offenses. Of these 15 questions, 13 are also present in Wave II. These 13 questions were used to construct three additive delinquency

[1] For a detailed discussion of the Add Health research design, see Harris, Halpern, Witsel, Hussey, Tabor, Entzel, & Udry (2009) or Kelly & Peterson (1997).

scales—one for each wave and a total scale that measures delinquency across waves. Table 1 presents the questions used to construct these scales with the exact wording from the Add Health, as well as the Cronbach's alpha for each additive scale.

Table 1. Questions Used to Construct Delinquency Scale

In the past 12 months, how often did you …	
paint graffiti on signs or someone else's property or in a public place?	
deliberately damage property that didn't belong to you?	
lie to your parents or guardians about where you had been or whom you were with?	
take something from a store without paying for it?	
run away from home?	
drive a car without its owner's permission?	
steal something worth more than $50?	
go into a house or building to steal something?	
use or threaten to use a weapon to get something from someone?	
sell marijuana or other drugs?	
steal something worth less than $50?	
take part in a fight where a group of your friends was against another group?	
act loud, rowdy, or unruly in a public place?	
	Cronbach's Alpha
Wave I Delinquency Scale	.814
Wave II Delinquency Scale	.812
Total Delinquency Scale	.875

Note: Identical questions were asked in Wave I and Wave II. Delinquency scales were created for each wave before being combined into a single scale.

Quantitative Analysis

Measures. The current study is guided by the following question: *What are the distinguishing characteristics of outliers of youthful behavior that impact their delinquent and/or criminal involvement?* From this, three distinct groups, each with its own research questions, can be distinguished: high-rate offenders compared to statistically normal adolescents, pure conformists compared to statistically normal adolescents, pure conformists compared to high-rate offenders, and the comparison of all three groups to each other.

Dependent variables. Each analysis requires a unique dependent variable. For Analyses 1 through 4, separate dichotomous dependent variables are utilized, while Analysis 5 calls for the construction of five trichotomous outcome variables, one for each set of models to be investigated.

Analysis 1: Binary logistic regression comparing high-rate offenders to statistically normal adolescents. A high-rate offender, for the purpose of the current research, is defined as an individual who commits a higher than average number of law violations in consecutive years. As there is no accepted number of offenses in a given time period to qualify someone as a high-rate offender, a number of points had to be taken into account including theoretical considerations and potential sample size. Table 2 presents the possible cut points considered for classifying high-rate offenders.

Table 2. Possible Cut Points for the Classification of High-Rate Offenders

Mean = 9.650 offenses	*SD* = 8.221	
+1 *SD*	17.871 offenses	*N* = 346
+2 *SD*	26.092 offenses	*N* = 126
+3 *SD*	34.313 offenses	*N* = 57

Note: Only respondents reporting having committed offenses in both Wave I and II are included for possible designation as high-rate offenders.

For the purposes of the current study, high-rate offenders are classified as respondents reporting to have committed 18 or more offenses, with at least one offense committed in each wave. This provides a sample of 346 high-rate offenders for analysis, which is 7.2% of the total sample.

For Analysis 1, pure conformists (those individuals reporting having committed no offenses in either wave) were trimmed from the sample. This resulted in a total

sample size of 3,394 for Analysis 1 (n = 3,394), of which 346 met the definition of a high-rate offender (i.e., having committed offenses across waves for a total of 18 or more law violations), which is 10.194% of the trimmed sample. Those respondents identified as high-rate offenders were coded as 1, with normal youthful offenders serving as the comparison group. The dependent variable was dichotomous and qualitative in nature, allowing for the use of logistic regression.

Table 3 presents the descriptive statistics of high-rate offenders as compared with normal youthful offenders. Males (61.6%) dominate the high-rate offender group, while females (53.4%) make up the majority of the normal youth group. The racial/ethnic breakdown is similar in both groups of respondents with whites as the majority, followed by blacks, those individuals reporting their race as "other" (including those identifying as biracial and multiracial), Hispanics, and Asians. Age is approximately normally distributed for each group with the most respondents reporting to be 14 to 16 years old. The rate of school attendance is identical for the normal adolescent and high-rate offender groups (98.3%). However, the dropout and expulsion rates are much higher for the high-rate offender group than the normal youth group. Most students attending school reported being enrolled in the eighth, ninth, or tenth grades for the high-rate offender group, while the normal adolescent group had a larger proportion of ninth, tenth, and eleventh graders. With regard to employment, a majority of the respondents in each group reported having a job.

Table 3. Descriptive Statistics for Analysis 1: High-Rate Offenders Compared to Statistically Normal Juveniles

	High-Rate Offenders (n = 346)		"Normal" Youths (n = 3,101)	
Variables	*n*	%	*n*	%
Gender				
Male	213	61.6	1,679	46.6
Female	133	38.4	1,923	53.4
Race/Ethnicity				
White	200	57.8	2,123	58.9
Black	57	16.5	814	22.6
Hispanic	25	7.2	201	5.6
Asian	17	4.9	141	3.9
Other	45	13.0	316	8.8
Age in Years				
10	0	0.0	2	0.1
11	1	0.3	0	0.0
12	5	1.4	173	4.8
13	40	11.6	545	15.1
14	82	23.7	685	19.0
15	91	26.3	732	20.3
16	69	19.9	736	20.4
17	46	13.3	552	15.3
18	9	2.6	151	4.2
19	2	0.6	23	0.6
20	1	0.3	3	0.1
Attending School				
Yes	340	98.3	3,541	98.3
No, Suspended/Expelled	2	1.2	8	0.2
No, Dropped Out	4	1.7	29	0.8
No, Graduated	0	0.0	4	0.1
No, Pregnant	0	0.0	2	0.1
No, Other	0	0.0	18	0.5
Education				
7^{th} Grade	36	10.4	628	17.4
8^{th} Grade	72	20.8	643	17.9
9^{th} Grade	91	26.3	704	19.5
10^{th} Grade	81	23.4	760	21.1
11^{th} Grade	56	16.2	729	20.2
12^{th} Grade	4	1.2	68	1.9
School Year Employment				
Employed	170	49.1	1,805	50.1
Unemployed	174	50.3	1,777	49.3
Summer Employment				
Employed	213	61.6	2,208	61.3
Unemployed	127	36.7	1,341	37.2

Note: Variable frequency percentages may not total to 100.0% due to rounding error or missing data.

With regard to high-rate offenders, there is a single research question:

(1) What are the distinguishing characteristics of high-rate offenders as compared to statistically normal juveniles?

Analysis 2: Binary logistic regression comparing pure conformist to statistically normal adolescents. For Analysis 2, those respondents meeting the definition of a high-rate offender were trimmed from the sample. This resulted in a trimmed sample size of 3,760 for Analysis 2 (n = 3,760). Of those, 741 respondents met the definition of a pure conformist, which is 19.707% of the trimmed sample. Those respondents identified as pure conformists were coded as 1, with normal youthful offenders serving as the comparison group. The dependent variable is dichotomous and qualitative in nature, allowing for the use of logistic regression.

Table 4 presents the descriptive statistics of pure conformists in the sample as compared with statistically normal youthful offenders. Females dominate both groups. The racial/ethnic comparison is similar in both groups of respondents. Whites are the majority, followed by blacks, those individuals reporting their race as "other" (including those identifying as biracial and multiracial), Hispanics, and Asians. With regard to age, 13-year-olds (19.2%) make up the largest portion of the pure conformist group, followed by 15- and 16-year-olds (18.6% and 18.1% respectively). In the statistically normal youth group, age is approximately normally distributed with the most respondents reporting to be 14 to 16 years old. The vast majority of respondents in each group report attending school. Of those not attending school, the pure conformist group has higher rates for all reasons for school absence, as compared to the statistically normal adolescent group. The greatest number of respondents in the pure conformist group was in the

eleventh grade, while the highest number of respondents in the statistically normal adolescent group was in the tenth grade. With regard to employment, fewer pure conformists reported having a school-year and/or summer job compared to statistically normal juveniles.

Table 4. Descriptive Statistics for Analysis 2: Pure Conformists Compared to Statistically Normal Juveniles

	Pure Conformists (n = 741)		"Normal" Youths (n =3,101)	
Variables	n	%	n	%
Gender				
Male	337	44.4	1,679	46.6
Female	422	55.6	1,923	53.4
Race/Ethnicity				
White	453	59.7	2,123	58.9
Black	177	23.3	814	22.6
Hispanic	39	5.1	201	5.6
Asian	22	2.9	141	3.9
Other	67	8.8	316	8.8
Age in Years				
10	0	0.0	2	0.1
11	2	0.3	0	0.0
12	47	6.2	173	4.8
13	146	19.2	545	15.1
14	126	16.6	685	19.0
15	141	18.6	732	20.3
16	137	18.1	736	20.4
17	101	13.3	552	15.3
18	43	5.7	151	4.2
19	14	1.8	23	0.6
20	2	0.3	3	0.1
Attending School				
Yes	548	93.4	3,541	98.3
No, Suspended/Expelled	2	0.3	8	0.2
No, Dropped Out	15	2.0	29	0.8
No, Graduated	24	3.2	4	0.1
No, Pregnant	5	0.7	2	0.1
No, Other	11	1.4	18	0.5
Education				
7^{th} Grade	169	22.3	628	17.4
8^{th} Grade	133	17.5	643	17.9
9^{th} Grade	139	18.3	704	19.5
10^{th} Grade	133	17.5	760	21.1
11^{th} Grade	144	19.0	729	20.2
12^{th} Grade	23	3.0	68	1.9
School Year Employment				
Employed	320	42.2	1,805	50.1
Unemployed	434	57.2	1,777	49.3
Summer Employment				
Employed	415	54.7	2,208	61.3
Unemployed	336	44.3	1,341	37.2

Note: Variable frequency percentages may not total to 100.0% due to rounding error or missing data.

With regard to pure conformists, there is a single research question:

(1) What are the distinguishing characteristics of pure conformists as compared to statistically normal juveniles?

Analysis 3: Binary logistic regression comparing pure conformists to high-rate offenders. Analysis 3 seeks to examine how pure conformists and high-rate offenders compare to one another. As such, there is a single research question:

(1) How do pure conformists differ from high-rate offenders with regard to attributes such as self-control, peer delinquency, etc.?

In order to undertake this investigation, all statistically normal respondents (i.e., those individuals not meeting the previously identified definitions of high-rate offending or pure conformity, were trimmed from the sample. This resulted in a trimmed sample size of 1,087 for Analysis 3 (n = 1,087). Of those, 741 respondents met the definition of a pure conformist (68.2% of the sample), and 346 respondents met the definition of a high-rate offender (31.8% of the sample). Those respondents identified as pure conformists were coded as 1, with normal youthful offenders serving as the comparison group. The dependent variable is dichotomous and qualitative in nature, allowing for the use of logistic regression.

Table 5 presents the descriptive statistics of pure conformists in the sample as compared with high-rate offenders. While females dominate the pure conformist group, high-rate offenders are more likely to be male. The racial/ethnic comparison is similar in both groups of respondents. Whites are the majority, followed by blacks, those individuals reporting their race as "other" (including those identifying as biracial and

multiracial), Hispanics, and Asians. With regard to age, 13-year-olds (19.2%) make up the largest portion of the pure conformist group, followed by 15- and 16-year-olds (18.6% and 18.1% respectively). In the high-rate offending group, age is approximately normally distributed with the most respondents reporting to be 14 to 16 years old. The vast majority of respondents in each group report attending school. Of those not attending school, the pure conformist group has lower rates of suspension/expulsion and dropout, but higher rates of graduation, pregnancy, and "other" reasons for school absence, as compared to the high-rate offenders. The greatest number of respondents in the pure conformist group was in the eleventh grade, while the highest number of respondents among high-rate offenders was in the ninth grade. With regard to employment, a majority of the respondents in each group reported having a job during the summer, but not during the school year; however, more high-rate offenders reported being employed during both these time periods than did pure conformists.

Table 5. Descriptive Statistics for Analysis 3: Pure Conformists Compared to High-Rate Offenders

Variables	Pure Conformists (n = 741)		High-Rate Offenders (n= 346)	
	n	%	*n*	%
Gender				
Male	337	44.4	213	61.6
Female	422	55.6	133	38.4
Race/Ethnicity				
White	453	59.7	200	57.8
Black	177	23.3	57	16.5
Hispanic	39	5.1	25	7.2
Asian	22	2.9	17	4.9
Other	67	8.8	45	13.0
Age in Years				
10	0	0.0	0	0.0
11	2	0.3	1	0.3
12	47	6.2	5	1.4
13	146	19.2	40	11.6
14	126	16.6	82	23.7
15	141	18.6	91	26.3
16	137	18.1	69	19.9
17	101	13.3	46	13.3
18	43	5.7	9	2.6
19	14	1.8	2	0.6
20	2	0.3	1	0.3
Attending School				
Yes	548	93.4	340	98.3
No, Suspended/Expelled	2	0.3	2	1.2
No, Dropped Out	15	2.0	4	1.7
No, Graduated	24	3.2	0	0.0
No, Pregnant	5	0.7	0	0.0
No, Other	11	1.4	0	0.0
Education				
7th Grade	169	22.3	36	10.4
8th Grade	133	17.5	72	20.8
9th Grade	139	18.3	91	26.3
10th Grade	133	17.5	81	23.4
11th Grade	144	19.0	56	16.2
12th Grade	23	3.0	4	1.2
School Year Employment				
Employed	320	42.2	170	49.1
Unemployed	434	57.2	174	50.3
Summer Employment				
Employed	415	54.7	213	61.6
Unemployed	336	44.3	127	36.7

Note: Variable frequency percentages may not total to 100.0% due to rounding error or missing data.

Analysis 4: Binary logistic regression comparing active and passive pure conformists. It is likely that pure conformists are not a homogenous group. It is necessary, therefore, to examine the potential existence of active versus passive pure conformists. With regard to active and passive pure conformists, there is a single research question:

(2) How do active and passive pure conformists differ with regard to attributes such as self-control, peer delinquency, etc.?

Active pure conformists are likely to be high achievers, though possibly somewhat socially disconnected, while passive pure conformists may be comparable to Demuth's (2004) loners. For the purposes of the current study, active pure conformists are those individuals who report never having violated the law and have a grade point average of 3.0 or higher on a scale of 4.0. This results in the identification of 394 active pure conformists (n = 394). Conversely, passive pure conformists are those respondents who have not engaged in delinquency and have a grade point average below 3.0 on a 4.0 scale, which results in the identification of 204 individuals meeting these requirements (n = 204).

Table 6 presents the descriptive statistics for active and passive pure conformists. Females dominate the active pure conformist group, while passive pure conformists are divided approximately equally between the sexes. The racial/ethnic comparison is similar in both groups of respondents. With regard to age, passive pure conformists, with a mean age of 16.05 years, are slightly older than active pure conformists, whose mean age is 15.64 years. In the passive pure conformist group, age is approximately normally distributed with the peak age of the respondents being 16 years old. Conversely, the

distribution of active pure conformists is positively skewed with the peak age of the respondents being 14 years old. The vast majority of the active pure conformists are white, while passive pure conformists are approximately equally split between whites and racial/ethnic minorities. Both active and passive pure conformists report overwhelmingly coming from a nuclear family background that does not receive public assistance.

Not surprisingly, the distribution of the active and passive pure conformist groups' education is similar to that of age, with the most respondents coming from grades 8 and 10 respectively. Further, the vast majority of respondents in both groups report attending school. Of those not attending school, the active pure conformist group has lower rates of suspension/expulsion, dropout, and pregnancy but higher rates of graduation and "other" reasons for school absence, as compared to the passive pure conformist group. With regard to employment—both during the school year and the summer—approximately identical patterns are observed in the two groups. A majority of both active and passive pure conformists are unemployed during the school year, but work during the summer.

Table 6. Descriptive Statistics for Control Variables Comparing Active and Passive Pure Conformists

Variables	Active Pure Conformists (n = 394)		Passive Pure Conformists (n = 204)	
	n	%	n	%
Gender				
Male	139	35.3	105	51.5
Female	255	64.7	99	48.5
Race/Ethnicity				
White	265	67.3	105	48.5
Minority	129	32.7	99	51.5
Age in Years				
12	2	0.5	0	0.0
13	32	8.1	8	3.9
14	91	23.1	33	16.2
15	68	17.3	35	17.2
16	69	17.5	52	25.5
17	68	17.3	37	18.1
18	49	12.4	23	11.3
19	14	3.6	12	5.9
20	1	0.3	4	2.0
Attending School				
Yes	394	100.0	204	100.0
No, Suspended/Expelled	0	0.0	2	1.0
No, Dropped Out	0	0.0	15	7.4
No, Graduated	20	5.1	4	2.0
No, Pregnant	0	0.0	5	2.5
No, Other	9	2.3	2	1.0
Education				
7^{th} Grade	1	0.3	1	0.5
8^{th} Grade	107	27.2	36	17.6
9^{th} Grade	67	17.0	37	18.1
10^{th} Grade	73	18.5	50	24.5
11^{th} Grade	62	15.7	40	19.6
12^{th} Grade	78	19.8	37	18.1
Beyond High School	6	1.5	3	1.5
School Year Employment				
Employed	169	42.9	84	41.2
Unemployed	225	57.1	119	58.3
Summer Employment				
Employed	222	56.3	112	54.9
Unemployed	171	43.4	92	45.1

Note: Variable frequency percentages may not total to 100.0% due to rounding error or missing data.

Analysis 5: Multinomial logistic regression examining all outliers/deviants. Analysis 5 seeks to examine how high-rate offenders and pure conformists compare to one another as well as to normal youthful offenders. To reach this objective, a trichotomous dependent variable was constructed. Based upon the previous definitions, normal youthful offenders were coded as 0, high-rate offenders were coded as 1, and pure conformists were coded as 2, making multinomial logistic regression appropriate for the analysis. The sample size for Analysis 3 was 4,707 (n = 4,707).

The construction of a trichotomous dependent variable works to assess the following research question:

(6) How do the distinguishing factors of high-rate offenders, statistically normal youths, and pure conformists compare with each another?

Additionally, it was hypothesized that the outliers of youthful behavior—high-rate offenders and pure conformists—would have distinguishing characteristics that are more similar to one another, at least on some variables, than they are to statistically normal young people.

Independent variables. A wide variety of independent variables are included in the models that specifically relate to a number of criminological theories. The construction of each of these variables is based upon previously conducted research utilizing Add Health data. A major strength of panel data is that they help to avoid issues of time order. In order to capitalize on this, matching variables from Waves I and II were combined into additive scales for use as each independent variable.

Social control theory. A number of measures related to social control theory were included in the models. McDermott and Nagin (2001) point out that "social control

theorists emphasize social bonds as the key determinant of delinquency [as the] social bonds, in the form of attachment, commitment, involvement, and belief in conventional values, restrain the pursuit of self-interested gratification" (p. 289). Therefore, the inclusion of social control variables is paramount.

Based upon the work of Haynie and Osgood (2005), which utilized Add Health data, a variable measuring *peer attachment* was constructed from the question, "How much do you believe that your friends care about you?" Responses range from 0 (not much at all) to 5 (they care very much about me). As the researchers point out, "it would be more consistent with previous measures of attachment if the question inquired about the respondents' sentiments toward their friends" (Haynie & Osgood, 2005, p. 1117); however, this is unavailable in the dataset. In line with Haynie and Osgood (2005), the reliance instead will be on the general inclination for respondents to assume that their friends have similar opinions to their own.

With regard to parental controls, two measures are included, again based upon the work of Haynie and Osgood (2005). A proposed additive scale measuring respondents' attachment to parents was constructed using the following questions: (1) "How close do you feel to your [mother/father]? and (2) "How much do you think your [mother/father] cares about you?" However, the attachment to parents scale had a Cronbach's alpha of .474. While the Cronbach's alpha is low, there is a precedent for using the scale. Yet, due to the poor internal consistency between the questions included in the scale, as indicated by the low Cronbach's alpha, the predictive ability of the variable is probably greatly decreased.[2]

[2] A factor analysis revealed two separate factors. To address this, the questions were first split into two separate scales by parent (i.e., Wave I and II mother questions and Wave I and II father questions);

A second parental control variable included measures *parental supervision*, based upon respondents' answers to six questions regarding their "mother's and father's physical presence in the home at various times of day" (Haynie & Osgood, 2005, p. 1118) including when the juvenile (1) leaves for school, (2) returns from school, and (3) goes to bed. Responses ranged from 1 (never present) to 5 (always present). The parental supervision variable has a Cronbach's alpha of .600.

Additionally, there are social controls related to school included in the models. In order to assess commitment to conventional goals, respondents' self-reported *grade point average*, based upon grades earned in the previous year, are included (Haynie & Osgood, 2005). Another school-related variable based upon the work of Haynie and Osgood (2005) assesses respondents' *attachment to school* through the use of an additive scale combining the following questions: (1) "Do you feel close to people at your school?" (2) "Do you feel like you are a part of your school?" and (3) "Are you happy to be at your school?" The attachment to school variable has a Cronbach's alpha of .787.

The final social control variable relates to religiosity. Respondents' were asked to report how important religion is to them (Haynie & Osgood, 2005). Responses on the *importance of religion* variable include: very important, fairly important, fairly unimportant, and not important at all. A single measure of a concept is likely to have low reliability (Shadish, Cook, & Campbell, 2002); therefore, it is not expected to have much predictive value. Yet, single measures have been used to measure religiosity in previous research using Add Health data (see generally, Haynie & Osgood, 2005); therefore, inclusion here is defensible.

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however, the Cronbach's alphas remained low. Then, the questions were divided into two separate scales by wave. Wave I had a Cronbach's alpha of .662, but Wave II was low (.474).

Strain theory. According to Agnew (1992), strain increases the likelihood of negative emotions, which in turn creates pressure to take action to correct the strain. One possibly adaptive behavior in response to strain is criminality. Therefore, it is important to include measures of strain in the analyses. General strain theory focuses on three categories of strain: (1) the loss of positive stimuli, (2) the presentation of negative stimuli, and (3) new categories of goal blockage (Agnew, 2001, p. 319), two of which were addressed in the models.

Two measures of serious strain were incorporated based upon the work of Kaufman (2009). To capture the loss of someone/something positive, an additive scale measuring *family/friend suicide* was constructed. The family/friend suicide variable has a Cronbach's alpha of .581. To assess the presentation of negative stimuli, an additive scale regarding *violent victimization* was created. Respondents were asked if in the last year they had (1) a knife or gun pulled on them; (2) been shot; (3) been stabbed; and (4) been jumped. The violent victimization variable has a Cronbach's alpha of .730.

Social learning and differential association theories. Both social learning and differential association theories propose that it is an individual's exposure to delinquent peers that increases his or her probability of offending (McDermott & Nagin, 2001, p. 289; see also, Burgess & Akers, 1966; Sutherland, 1947). Others assert instead that offenders seek out delinquent peers (Gottfredson & Hirschi, 1990). Thornberry (2006) contends that there exists bidirectional causality between an adolescent's association with delinquent peers and his or her own delinquent involvement. Despite the disagreement, all agree that delinquent peers are important to consider.

A measure of *peer delinquency* was constructed based upon measures used by Beaver, Gibson, Turner, DeLisi, Vaughn, and Holand (2009). Three items regarding respondents' affiliation with delinquent peers are available in both waves of the data. In each wave, "respondents were asked to indicate how many of their three closest friends smoked at least one cigarette each day, smoked marijuana at least once each month, and got drunk at least once each month" (Beaver et. al, 2009, p. 914). These items have been found to have face validity as well as strong predictive validity (Beaver et. al, 2009; Beaver & Wright, 2005, Bellair, Roscigno, & McNulty, 2003). The peer delinquency variable has a Cronbach's alpha of .825.

Self-control. Six dimensions of self-control are described by Gottfredson and Hirschi (1990), including impulsivity, a preference for simple tasks, self-centeredness, risk-seeking, physicality, and a quick temper. A five-item scale was created to measure *self-control* based upon Perrone, Sullivan, Pratt, and Maragaryan's (2004) research using Add Health. Respondents were asked whether they have (1) had problems keeping their mind on what they were doing; (2) had trouble getting their homework done; (3) had difficulty paying attention in school; and (4) had trouble getting along with their teachers. An additional question asked respondents whether they feel they are "doing everything just about right" (Perrone et. al, 2004). This scale addresses five of the six dimensions of self-control described by Gottfredson and Hirschi (1990) (i.e., simple tasks, physical activities, impulsivity, quick temperedness, and self-centeredness). The self control variable has a Cronbach's alpha of .660.

It is possible that what differentiates outliers is that they simultaneously experience high levels of a number of variables. The effect may be additive or

interactive. To address this, an exploratory analysis of interactions among clusters of variables is examined.

Control variables. Demographic variables are included in the models to serve as controls and were adapted from Wave I data. A dummy variable for biological sex of the respondent was constructed such that males received a 1 and females a 0. This is an important control variable as research has shown a clear distinction with regard to statistically normal youthful offending as males have consistently been found to be more delinquent and criminal at all ages (see generally, Saspi et. al, 1994; De Brito et al., 2009; Farrington, 1983; Felson & Haynie, 2002; Loeber et. al, 1998; Loeber et. al, 2012; Moffitt, 1993; Moffit & Caspi, 2001; Moffitt et. al, 2002; Nagin et al, 2005; Odgers et. al, 2008; Reppucci, 1999; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Van Mastrigt, & Farrington, 2009; Wolfgang et. al, 1987). Furthermore, differences in male and female offending patterns, termed the gender gap in crime, have found continual support in the literature (see generally Fergusson & Horwood, 2002; Schwartz & Steffensmeier & Allan, 1996).

Another important control variable is age. In the analyses, age is coded as a continuous variable. Considering the spike in criminal offending that occurs in middle- to late-adolescence, often referred to as the "age-crime curve" (Dean, Brame, & Piquero, 1996; Farrington, 1986; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013), it is important to control for age when investigating the extremes of youthful behavior with regard to crime and delinquency. Also, research has found that age impacts the length of one's criminal offending, such that the earlier the age of onset of criminality, the more likely law-violating behavior is to become more serious and continue across the life

course (DeLisi, Neppl, Lohman, Vaughn, & Shook, 2013). Additionally, because age is known to have non-linear effects on crime (see for example, Shelley, 1981), age squared is included as a control variable as well.

Race/ethnicity was included as a control variable in the analysis after being recoded into a dummy variable with white being assigned a 1, and other races/ethnicities—black, Hispanic, Asian, and other races/ethnicities (including Native American as well as those identifying as bi- and multiracial) receiving a 0. Family structure has been found to be an important predictor of delinquency (see generally Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Matsueda & Heimer, 1987). Accordingly, a dummy variable measuring family structure was created. Respondents reporting to live in a nuclear household (two married parents) received a 1, while other family structures were coded as 0. Furthermore, researchers commonly agree that it is important to control for socioeconomic status (see for example, Haynie & Osgood, 2005). To address this concern, a dummy variable was created to assess the receipt of public assistance by a respondent's family. Those respondents reporting to have received public assistance in the past year were assigned a 1, while those who had not received assistance were coded as 0. However, it is noteworthy to point out that Tittle (1977; 1978) asserts that socioeconomic status will not have any effect.

Research has consistently found that for most forms of criminal offending, the higher an individual's level of education, the less the criminality (Lochner & Moretti, 2001). Therefore, a dummy variable for whether the respondent was attending school during Wave I was included, with school absence during this time period serving as the

reference category. Additionally, level of education was included in the model using a continuous measure for the grade level of the respondent during Wave I.

Two variables included in the models measure respondents' stake in conformity, as it is expected that those with more to lose are more likely to refrain from law violations. The summer-employment variable was dummy-coded with those respondents reporting being employed during the summer coded as 1, while those not having summer jobs received a 0. A separate variable was constructed for employment during the school year, as there has been found to be a difference between summer and school-year employment among adolescents (Apel, Paternoster, & Bushway, 2006). The school-year job variable was dummy-coded with those respondents who reported being employed during the school year being coded as 1 while those not employed during that time from received a 0.

A final important variable included in the models controls for whether or not the respondent reported having friends. As Demuth (2004) points out, loners are not synonymous with lone offenders, who are likely to be high-rate offenders. Individuals may engage in solo offending because they have no friends; however, it is possible that they have friends, but choose not to commit break the law with them. Additionally, pure conformists may refrain from law-violating behavior because they have no peers with whom to offend. Thus, it is important that the presence of friends is controlled. In the analyses, a dummy variable for the presence of friends was created such that respondents with friends received a 1, and those reporting to not have friends received a 0.

An unfortunate and serious limitation of the data is that they do not provide a direct measure for group offending. While there have been studies that have created

proxy measures for group offending using Add Health data (see for example, Haynie & Osgood, 2005; Perrone et. al, 2004), the reliability and validity of these measures have been questioned. Therefore, no proxy measure of group offending is included in the current analyses.

Analytical Plan: Qualitative Analysis

Dabbs (1982) asserted that "qualitative and quantitative are not distinct" (as cited in Berg & Lune, 2011, p. 2). These two approaches should be used in conjunction with one another in order to obtain a greater depth of understanding from research. Without a doubt, qualitative research has made lasting conceptual and theoretical contributions to the social sciences, including criminology. This is absolutely the case in research where there are qualitatively distinct groups being studied. The current research is one such case as the potential, qualitative differences between normal adolescents, high-rate offenders, and pure conformists stand out in stark contrast to one another.

Conjunctive analysis of case configurations. Conjunctive analysis of case configurations, derived from both qualitative and quantitative research, is a straightforward technique for the multivariate analysis of categorical data able to be applied to both exploratory and confirmatory studies (Miethe, Hart, & Regoeczi, 2008, p. 239). For this technique, both dependent and independent variables must be categorical. Conjunctive analysis "offers a middle-ground between (1) the focus on specificity and multiple causality that underlies most qualitative research and (2) the variable-oriented search for general patterns across contexts in most quantitative research" (Miethe, et. al, 2008, p. 239).

Miethe and colleagues' (2008) approach to conjunctive analysis involves visual representation of case configurations that communicate important information about their "nature, diversity, and distribution for subsequent analysis" (p. 229). As an exploratory method for studying qualitatively distinct groups of adolescents, conjunctive analysis begins with an examination of the patterns of variability and clustering among the case configurations of youth attributes (Miethe et. al, 2008, p. 232) resulting in an "aggregated compilation of all possible combinations of attributes considered simultaneously" (p. 229). The number of possible case configurations is dependent upon the number of independent variables as well as the categories within them. For the current research, there are five dichotomous independent variables (i.e., male, white, whether the respondent has friends, receipt of public assistance, and nuclear family). Therefore, there are 32 qualitatively distinct[3] case configurations ($2^5 = 32$) for the first two analyses.

This set of independent variables are used in four separate conjunctive analyses focused on high-rate offenders (as compared to statistically normal juveniles), pure conformists (as compared to statistically normal juveniles), high-rate offenders as compared to pure conformists, and active pure conformists (as compared to passive pure conformists), respectively. After the identification of the possible case configurations, conjunctive analysis places each observation into its respective case configuration (Miethe et. al, 2008, p. 239). This allows for the investigation of the relative distribution of particular categories of the outcome variable across the configurations. The conjunctive matrix "displays the relative proportions of cases in only the focal category

[3] There is no limit to the number of case configurations that may be included in conjunctive analysis; however, generally, conjunctive methods are limited to less than 100 distinct case configurations due to small cell sizes and practical problems of greater interpretive complexity (Miethe et. al, 2008, p. 229).

of the dependent variable" (Miethe et. al, 2008, p. 230). Then matrices created for each category of the dependent variable may be compared.

The simple analysis of a conjunctive matrix of case configurations provides a concise way to explore diversity among categorically different groups within data, as well as allows for the identification of complex patterns (Miethe et. al, 2008). The information gleaned from the exploratory conjunctive analyses will inform the quantitative analyses as to possible important interactions between independent variables that should be investigated in the logistic regression models. Thus, the conjunctive method offers an efficient and comprehensive approach to exploratory data analysis.

Analytical Plan: Quantitative Analysis

Binary logistic regression. When a dependent variable is nominal and has been dummy coded, there are two popular approaches to analysis. When one uses ordinary least squares regression (OLS) to explain a dummy outcome variable, this is called a linear probability model. Linear probability models have serious limitations, including: (1) the possibility of obtaining probabilities outside of the zero to one range; (2) a lack of uniformity in the spread of the error (heteroscadasticity) due to clustering, which violates the constant error assumption; and (3) the size of the residuals is negative all the time allowing for prediction of the errors, therefore making them highly correlated (Kutner, Nachtsheim, & Neter, 2004, p. 513). Because of these shortcomings, binary logistic regression, involving the logit transformation of the dependent variable, is often a better choice and will be used for Analyses 1 through 4.

Logistic regression models are widely used when the dependent variable is qualitative with two possible outcomes (Menard, 2002). In the case of the first four

analyses, the response variable of interest has only two possible qualitative outcomes, therefore allowing it to be represented by a binary indicator variable taking on values of 0 and 1 (Kutner et al., 2004, p. 555; see also Menard, 2002). In Analysis 1, the dependent variable is whether or not the respondent is classified as a high-rate offender. In Analyses 2 and 3 the outcome variable is concerned with whether or not the respondent is a pure conformist. In Analysis 4, the outcome variables is focused on whether the respondent is an active (versus a passive) pure conformist.

While binary logistic regression is the most appropriate analytical technique to apply to the comparisons among high-rate offenders, pure conformists, and statistically normal youth, it is not without some drawbacks. Kutner and colleagues (2004) point out that special problems arise when the dependent variable is dichotomous. The first centers on the existence of non-normal error terms. For a dichotomous dependent variable, each error term can take on only two values. The assumption that errors are normally distributed, which is made by the normal error regression model, is therefore inappropriate (Kutner et al., 2004). Additionally, there is the problem of non-constant error variance. The error terms do not have equal variances when the response variable is dichotomous; thus, the error variances will differ at different levels of the independent variables, making OLS no longer optimal (Kutner et al., 2004). Finally, the third and most serious limitation deals with the constraints on the response function. Because the response function represents probabilities when the dependent variable is dichotomous, the mean responses are constrained. Many response functions, however, do not automatically possess this constraint, which often rules out a linear response function (Kutner et al., 2004, p. 559). The use of maximum likelihood to estimate the parameters

of the logistic response function is well-suited to deal with the third, and most serious, problem of using a dichotomous outcome variable (Kutner et al., 2004).

The basic goal of maximum likelihood estimation is to select the population value that is most likely to exist given the sample data. In regression, when the error terms in the population and the sample are not identical, OLS is not preferred (Eliason, 1993). When OLS fails, as is often the case with a dichotomous dependent variable, maximum likelihood estimation can be used. The maximum likelihood estimates in a binary logistic regression model are those values that maximize the log-likelihood function (Kutner et al., 2004). Maximum likelihood estimators have some desirable properties. First, all estimators are at least consistent such that as sample size increases, the bias decreases (Eliason, 1993). Furthermore, all estimators have normally shaped sampling distributions (Eliason, 1993). Last and most important, all estimators will be asymptotically efficient (Eliason, 1993).

This does not mean, however, that maximum likelihood estimation is incapable of failure, at it is more fragile a process than OLS. Maximum likelihood estimation can fail through either false convergence (the estimates do not converge due to the existence of a local maximum, a minimum, or a saddle point) or non-convergence (when there are is too little iteration, high levels of collinearity, start values that are far away from the maximum, the scales of the variables change the solution, the model is too complex, a previous result is used for future computation, or the data do not obey the assumptions of the technique) (Eliason, 1993).

Despite the limitations of maximum likelihood, it is useful for binary logistic regression because, as Long (1997) points out, “for maximum likelihood estimation, the

desirable properties of consistency, normality, and efficiency are asymptotic" (p. 53), which means that the properties hold as the sample size approaches infinity. This bolsters the use of binary logistic regression utilizing maximum likelihood estimation for Analysis 1 though 4.

There are three times when logistic regression breaks down. First, logistic regression can fail when an independent variable is categorical and some of the categories have no observations (Kutner et al., 2004). This is referred to as a zero-cell problem. Additionally, logistic regression can fail when the dependent variable can be perfectly predicted, meaning that the root mean squared error and the standard errors are zero (Kutner et al., 2004). This occurs when the dependent variable is perfectly predicted, and is referred to as complete case separation. Finally, logistic regression can fail when the model explains nearly all of the variation in the dependent variable (referred to as quasi-complete separation) (Kutner et al., 2004). Because of the possible breakdown of logistic regression, it is necessary to check whether other discrete models are more appropriate.[4]

Multinomial logistic regression. The binary logistic regression model can be extended so that it is applicable to situations in which the response variable is a qualitative variable having more than one possible outcome, termed multinomial logistic regression (Kutner et al., 2004). Analysis 5 uses multinomial logistic regression to examine high-rate offenders, pure conformists, and normal youthful offenders in a single model. Multinomial logistic regression has more considerations and is therefore more complicated than the binary logistic model used in the first four analyses.

[4] For the first four analyses, both logistic and probit regression models were investigated. The models however, fit equally well to the data. Therefore, logistic regression—the simpler method—is preferred in each analysis.

There are five differences between binary and multinomial logistic regression (Long, 1997). The first difference deals with the nature of the dependent variable. Multinomial logistic regression is appropriate when there are more than two nominal categories in the dependent variable. In Analysis 5, the dependent variable includes three categories: statistically normal youthful offender, high-rate offender, and pure conformist.

Another difference between binary and multinomial logistic regression lies in the manner in which the dependent variable is transformed in the regression model (Long, 1997). In binary logistic regression, observations compared to the group are excluded from the analysis. In multinomial logistic regression however, the probability of being in one group is compared to that of being in another group (Long, 1997). This changes what the coefficient measures in the multinomial logistic model, thereby requiring the comparison group to be taken into account for the interpretation of any findings.

A third difference between binary and multinomial logistic regression is the number of equations that are going to be estimated (Long, 1997). In multinomial logistic regression, if there are *k* categories in the dependent variable, then *k-1* equations are to be estimated (Long, 1997). Therefore, "all of the logits are estimated simultaneously, which enforces the logical relationship among the parameters and uses the data more efficiently" (Long, 1997, p. 151). In the case of Analysis 5, there are three categories included in the dependent variable. This means that two individual equations are to be estimated.

Moreover, there is a question as to whether all the slopes in the multinomial logistic model are necessary. In multinomial logistic regression, there exists the

possibility that a model may be significant overall, yet individual equations contained within do not reach the accepted level of statistical significance (Long, 1997). This added concern further complicates multinomial logistic regression, as compared to binary logistic models.

Finally, there is the assumption that in theory, one could estimate a series of binary logistic regression equations instead of a multinomial logistic model, assuming that the errors are independent. If this assumption is violated however, the error terms would be correlated. This makes the independence of irrelative alternatives (IIA) assumption, which stems from transportation research conducted by McFadden (1973), key in multinomial logistic regression models. Independence of irrelative alternatives (IIA) assumes that the odds do not change or the categories can be a perfect substitute for each other (Long, 1997). This means that the alternative cannot change the original odds, and dropping a category should not change the odds; therefore, if the odds do not change upon dropping a category from the dependent variable, the IIA assumption is met (Long, 1997). This is necessary for multinomial logistic regression and can be tested in Stata using the Housman test (Long & Freese, 2006). These five differences between binary and multinomial logistic regression make the latter more applicable to answering the question posed in Analysis 5 due largely to its use of a trichotomous dependent variable.

Non-linearity. Perhaps the distinguishing factor of outliers is that they consistently have very high levels of particular causal variables. This possibility is likely to be missed if one only specifies linear estimates. For example, if variable X is significant for the two groups of outliers—high-rate offenders and pure conformists—but is not significant for the majority of the population (i.e., statistically normal youth), linear

models would find variable X to have no effect, when this is not the case. Thus, it is necessary to consider non-linearity.

Predictions. While no formal hypotheses are being stated, some predictions with regard to variable importance are necessary. Table 7 presents the predictions of variables' importance comparing outliers—high-rate offenders and both active and passive pure conformists—to statistically normal youths, based upon their caricatures.

Table 7. Variable Predictions for Outliers as Compared to Statistically Normal Youths

Theory	Variables	High-Rate Offenders	Active Pure Conformists	Passive Pure Conformists
Control Variables	Male	+	–	–
	Age	+	+	–
	White	–	+	–
	Nuclear Family	–	+	–
	Public Assistance	No Difference	No Difference	No Difference
	Grade Level	–	+	–
	School Year	+	–	–
	Employment			
	Summer Employment	No Difference	No Difference	No Difference
	Friends	No Difference	–	–
Social Control	Peer Attachment	–	–	–
	Parental Attachment	–	+	–
	Parental Supervision	–	+	+
	Grade Point Average	–	+	–
	Attachment to School	–	+	–
	Importance of Religion	–	+	–
Strain	Family/Friend Suicide	+	–	–
	Violent Victimization	+	–	–
Social Learning / Differential Association	Peer Delinquency	No Difference	No Difference	No Difference
Self-Control	Self-Control	–	+	+

Note: Predictions are made as compared to normal youths (for example, variable X happens more to high-rate offenders than it does on statistically normal youths). The signs indicate the increased (+) and decreased (–) presence of a particular variable as compared to statistically normal juveniles.

High-rate offenders. Some literature has focused, at least in part, on high-rate offenders (see for example, Moffit, 1993, 2003, 2006; Moffitt & Caspi, 2001; Moffitt et al., 2002; Warr, 1996, 2002); therefore, predictions about variables' presence or absence for high-rate offenders as compared to statistically normal youths are able to be made with some degree of confidence.

With regard to control variables, high-rate offenders, as compared to statistically normal youths, may be older males from racial/ethnic minority groups. When studying life-course persistent (and likely high-rate) offenders, Moffitt (1993, 1997, 2003) found

that they are most often males. Also, males overwhelmingly have been found to be more delinquent than females (see generally, Saspi et. al, 1994; De Brito et al., 2009; Farrington, 1983; Felson & Haynie, 2002; Loeber et. al, 1998; Loeber et. al, 2012; Moffitt, 1993; Moffit & Caspi, 2001; Moffitt et. al, 2002; Nagin et al, 2005; Odgers et. al, 2008; Reppucci, 1999; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Van Mastrigt, & Farrington, 2009; Wolfgang et. al, 1987). Race, while unrelated to prevalence of offending, is correlated with the incidence of delinquency (Empey et. al, 1999), as Elliott and Ageton (1980), using data from the National Youth Survey, found that blacks reported having committed almost twice as many law violations as whites.

Moreover, high-rate offenders are probably less likely than statistically normal youths to come from a nuclear family (Matsueda & Heimer, 1987); however, it is doubtful that there is any difference between their socioeconomic status and that of the majority of adolescents (Tittle, 1977, 1978). Compared to statistically normal youths, high-rate offenders may be less likely to attend school (Elliot, 1966). They may also be behind in their studies, causing them to come from lower grade levels (i.e., high-rate of school failure) (Phillips & Kelly, 1979). Because many adolescents work during the summer (Apel et. al, 2006), there is probably no difference between high-rate offenders and statistically normal youths in this regard; yet, high-rate offenders may be more likely to hold jobs during the school year as previous research has found that employment increases delinquency because of the greater exposure to peers (Apel et. al, 2006). Still, both high-rate offenders and statistically normal youths probably report having friends, as high-rate offenders are not likely to be loners (Demuth, 2004).

Regarding the theoretically-based independent variables, a number of predictions can be made for high-rate offenders. Six variables are included in the models as measures of social control—peer attachment, parental attachment, parental supervision, grade point average, attachment to school, and importance of religion. High-rate offenders should have weaker social bonds than statistically normal youths. Accordingly, high-rate offenders are predicted to have lower levels of each of the social control variables than statistically normal youths. While they probably have friends, high-rate offenders are likely to be less attached to them than statistically normal youths. A possible example of this is Giordano, Cernkovich, and Pugh's (1986) finding that relationships between gang members—who are likely to be high-rate offenders—are often not close, though the authors do contend that Hirschi's (1969) "cold and brittle" (p. 141) contention is likely oversimplified.

High-rate offenders may also be less attached to their parents than statistically normal youths. This may be a product of living in a non-traditional (i.e., non-nuclear) family structure, as some have found high-rates of delinquency among youths in single-parent households (Thomas, Farrell, & Barnes, 1996). There also is likely to be less parental supervision for high-rate offenders (Silberberg & Silberberg, 1971; Wilson, 1980), as compared to normal youths, possibly as a result of increased instances of living in a non-traditional household. High-rate offenders, as compared to normal youths, probably have lower grade point averages (Maguin & Loeber, 1996) and attachment to school, as they should have less stake in conformity than statistically normal juveniles (Hawkins & Weis, 1985). Finally, it is predicted that religion is less important to high-rate offenders than statistically normal youths as an absence of strong beliefs has been

found to be correlated with criminal offending (Johnson, De Li, & Larson, 2000; Johnson, De Li, Larson, & McCullough, 2000).

In reference to strain theories, two variables are included in the models: (1) a family member or friend having committed suicide and (2) having been the victim of violence. High-rate offenders are likely to have increased levels of strain, and adapt to those pressures through criminality (Agnew, 1992). Therefore, it is predicted that high-rate offenders, as compared to statistically normal youths, will have had more experience with loss due to suicide and violent victimization.

The final two theoretically-based independent variables center on social learning/differential association theories and self-control theory. Peer delinquency is central to both social learning and differential association theories; thus, a measure of peer delinquency has been included in the model. It is predicted that high-rate offenders and statistically normal youths will both have friends involved in delinquency as this is statistically normal for adolescents (Farrington, 1983). Therefore, if adolescents have friends, regardless of whether the youth is a high-rate offender or a statistically normal juvenile, those friends will probably be engaging in some amount of law-violating behavior. High-rate offenders and statistically normal youths however, are predicted to differ in self-control, with high-rate offenders being likely to have lower levels, as research has found that low self-control results in increased delinquency (Perrone et. al, 2004).

Active pure conformists. Active pure conformists are statistically deviant; yet, the extent and ways in which they are normatively deviant has rarely been the focus of research. This hampers the ability to make predictions about how they deviate from

statistically normal youth. However, this task is aided by the construction of a caricature such that an active pure conformist is a person who is a stereotypical model child, who excels at a wide variety of activities, though he or she may be somewhat socially awkward. Based on this caricature, a number of predictions can be made, though the confidence in these is lessened due to the lack of research on pure conformists more generally.

With regard to control variables, active pure conformists, as compared to statistically normal youths, may be older, white females, as some of these characteristics have been found to be negatively correlated with delinquency (see generally, Dean et. al, 1996; Elliott & Ageton, 1980; Empey et. al, 1999; Farrington, 1986; Hirschi & Gottfredson, 1983; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013), and this fits the general stereotype of a responsible young adult. Furthermore, it is predicted that active pure conformists will come from a nuclear family more often than statistically normal youths; yet it is unlikely that there is any difference between the socioeconomic statuses of active pure conformists and that of statistically normal youths because, as Tittle (1977, 1978) asserts, socioeconomic status should not have an effect on the probability of delinquency.

Active pure conformists' grade level may be higher as compared to the grade levels of statistically normal youths. It is, however, doubtful that active pure conformists and statistically normal youths will differ with regard to summer employment due to the high numbers of adolescents that work during that time frame (Apel et. al, 2006). Still, active pure conformists may be less likely to hold jobs during the school year. As previous research has found that employment increases delinquency because of the

greater exposure to peers (Apel et. al, 2006), it follows that an absence of law-violations could be characteristic of an unemployed youth. Last, there is likely to be a substantial difference between active pure conformists and statistically normal youths with regard to friends. Pure conformity in general is rare, and because of this, these adolescents may have an exceedingly difficult time connecting with peers. This hurdle is unlikely to be faced by high-rate offenders because both they and statistically normal youths violate the law, and thus, can relate to one another. This may not be the case for active pure conformists.

When examining the theoretically-based independent variables, a number of predictions can be made about how active pure conformists and statistically normal youth will differ. It is likely that active pure conformists have higher levels of the majority of the variables included in the models as measures of social control—parental attachment, parental supervision, grade point average, attachment to school, and importance of religion—than statistically normal juveniles. The final variable of social control—peer attachment—is predicted to be lower for active pure conformists than statistically normal youths. Even when controlling for the presence of peers, active pure conformists are likely to have low attachment to their peers because they have difficulty connecting to them. Furthermore, it is predicted that active pure conformists will have less experience with family member or friend suicide as well as violent victimization (measures of strain) than statistically normal juveniles, though they may have higher levels of self-control, which would contribute to their ability to excel.

The last theoretically-grounded variable included in the models is based on social learning/differential association theories. Peer delinquency is included in the model

because it is essential to both social learning and differential association theories. It is predicted that when controlling for the presence of friends, active pure conformists and statistically normal youths will both have friends involved in delinquency as it is normal behavior for adolescents (Farrington, 1983). This is because regardless of whether a youth is an active pure conformist or a normal juvenile, if he or she has friends, those friends are likely to be engaging in some amount of law-violating behavior as doing so is statistically normal. In other words, it is unlikely the active pure conformists are only building relationships with other pure conformists due to their rarity in the general population; thus, if an active pure conformist has friends, those friends are likely to be statistically normal youths (i.e., adolescence-limited delinquents).

Passive pure conformists. Like active pure conformists, passive pure conformists are also statistically deviant, with research investigating their normative deviance having seldom been conducted. This hinders the ability to make predictions about the ways in which they deviate from statistically normal youth. Through the construction of a caricature of passive pure conformists, however, this task is aided. The caricature of a passive pure conformist, for the purpose of prediction in the current work, is a person who is not necessarily a model child, but rather a peculiar individual who is inconspicuous as he or she does not excel at anything and is socially awkward. Based on this profile, a number of predictions can be made, though the confidence in these is lessened due to the lack of research on pure conformists more generally.

With regard to control variables, passive pure conformists, as compared to statistically normal youths, may be younger females, as these characteristics have been found to be negatively correlated with delinquency (see generally, Dean et. al, 1996;

Farrington, 1986; Hirschi & Gottfredson, 1983; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013). The prediction for race/ethnicity, however, while less clear-cut, is that passive pure conformists will be made up of more minority juveniles as compared to statistically normal youths. Passive pure conformists also less often come from a nuclear family more often than statistically normal youths, though it is unlikely that there is any difference between the socioeconomic statuses of each group (see Tittle 1977, 1978).

Furthermore, passive pure conformists should report lower grade levels as compared to statistically normal youths. With regard to employment, it is doubtful that passive pure conformists and statistically normal youths will differ concerning summer employment as employment during this these months for adolescents is very common (Apel et. al, 2006). Still, passive pure conformists, like their active counterparts, may be less likely to hold jobs during the school year as explained by previous research findings outlining the impact of the greater exposure to peers in this setting which increases delinquency (Apel et. al, 2006). It follows then, that an absence of delinquency could be characteristic of a an unemployed youth. Lastly, there is likely to be a substantial difference between passive pure conformists and statistically normal youths with regard to friends. It is highly possible that Demuth's (2004) loners and passive pure conformists are one in the same. Pure conformity, due to its rarity in the general population, may make it exceedingly difficult for these youths to connect with their peers.

When examining the theoretically-based independent variables, making predictions as to how passive pure conformists and statistically normal youth will differ seems straightforward with the help of the caricature laid out. Passive pure conformists,

as compared to statistically normal juveniles, are likely have lower levels of social control, as measured by six independent variables: peer attachment, parental attachment, parental supervision, grade point average, attachment to school, and importance of religion. Even when controlling for the presence of peers, pure conformists are likely to have low attachment to their peers because they have difficulty connecting to them. This may, in turn, impact their attachment to school, as they are likely to feel ostracized from the educational environment due to their social awkwardness. Additionally, it is predicted that pure conformists will have lower grade point averages than normal youths, as they are unlikely to excel and often are unremarkable.

It is a bit more difficult to make predictions for passive pure conformists on the variables related to strain and self-control, as it is unknown whether they have more or less strain than statistically normal juveniles. It is clear, however, that they refuse to adapt to pressure through delinquency. Therefore, passive pure conformists are likely to have higher levels of self-control than statistically normal juveniles. Additionally, it is predicted that passive pure conformists will have more experience with loss due to family member or friend suicide as well as violent victimization than statistically normal juveniles.

The last theoretically-grounded variable included in the models, peer delinquency, is based on social learning/differential association theories. With regard to this independent variable, it is predicted that when controlling for the presence of friends, passive pure conformists and statistically normal youths will both have friends who engage in law-violating behavior as doing so is statistically normal for adolescents (Farrington, 1983). Therefore, regardless of whether the youth is a passive pure

conformists or a normal juvenile, if they have friends, those individuals will probably be engaging in some amount of delinquency. It is improbable that passive pure conformists are building relationships only with other pure conformists as they are exceedingly rare in the population; thus, if a passive pure conformist has friends, those friends are likely to be statistically normal youths (i.e., adolescence-limited delinquents).

Methodological Considerations

Qualitative analysis. There are a number of methodological considerations and criticisms of conjunctive analysis that should be discussed. Likely the most common criticism of this technique is that it is more descriptive than predictive (Ragin, 1987, 2000). Yet, Miethe and colleagues (2008) contend that this criticism is unwarranted, asserting that

> The descriptive value of the conjunctive method is indispensable for augmenting variable-oriented research because the conjunctive matrix provides a succinct and clear picture of (1) the proper functional form among variables and (2) the magnitude of case clustering, diversity, and low-cell frequencies that affect statistical estimates in discrete multivariate analyses. (p. 239)

Clearly, there is immeasurable value in the descriptive component of conjunctive analysis of case configurations, especially when parceling out differences among qualitatively diverse groups is the focus of the research.

It has often been argued that the conjunctive method is less theoretically informed than quantitative techniques; however, this criticism may be unwarranted (see Ragin, 1987, 2000). The conjunctive method uses theory to identify the central variables influencing a particular dependent variable as well as "specifies a model of multiple

causality and joint effects that is also derived from substantive theories" (Miethe et. al, 2008, p. 239). This theoretically-driven approach is made even more attractive by its focus on the description of data patterns.

Quantitative analysis. There are a number of methodological considerations for the proposed analytical plan. The first centers on the use of secondary data. Utilizing secondary data has three main advantages. One of the major attractions to individual researchers is that the use of secondary data is economical (Boslaugh, 2007). This not only saves money on the sampling, collection, coding, and cleaning of data, but also on the person hours such an undertaking requires. Additionally, secondary data allow for much larger datasets to be compiled and analyzed than is typically possible for individual researchers (Boslaugh, 2007). This is particularly true of longitudinal secondary data, as the difficulty of collecting multiple waves with very large samples is often insurmountable for individual researchers. Furthermore, the use of secondary data allows for "expertise and professionalism that may not be available to smaller research projects" (Boslaugh, 2007, p. 4), which is true of Add Health.

Yet while there are strong advantages to analyzing secondary data, the technique is not without drawbacks. One major disadvantage is that the data were not collected for the purpose of answering a researcher's specific research question; thus, variables of interest may be measured in ways that are less than ideal for the research at hand, or may be absent (Boslaugh, 2007). Moreover, because the individual researcher was not involved in the planning or execution of data collection, he or she is unlikely to understand exactly how these tasks were fulfilled (Boslaugh, 2007, p. 5). This means that the individual researcher does not know how well data collection was handled, which

reduces his or her ability to assess "how seriously the data are affected by problems such as low response rate or respondent confusion" (Boslaugh, 2007, p. 5).

As is consistent with analyzing longitudinal survey data, there is an issue with respondent attrition resulting in missing data. Approximately 73.45% (n = 4,775) from Wave I of the publicly accessible Add Health dataset were able to be matched by respondent identification numbers to Wave II. While there is a substantial amount of attrition present across the two waves (n = 1,729), the decision was made not to manipulate the data to address missing values as there appears to be no systematic differences in the attrition group with regard to the construction of the variables of interest. Within the sample group, there exist some missing values on indicators for certain respondents. In order to address this issue, listwise deletion is used to drop cases with missing data; however, doing so diminishes the generalizability of the results as the technique reduces sample size.

Another methodological concern stems from the dataset itself. King and Zeng (2001) point out that "commonly used data collection strategies are grossly inefficient for rare events data" (p. 137). The nature of the current research is to investigate the existence of outliers of youthful behavior—high-rate offenders and pure conformists—which are infrequent in the general adolescent population. Therefore, in order to have large enough numbers of the event or respondent type in a dataset, an inordinate amount of data must be collected. Add Health however, was not collected for the purpose of studying the outliers of youthful behavior. As a result, the number of respondents meeting the criteria to be categorized as outliers—especially with regard to high-rate offenders—is low.

An arguably more serious methodological consideration has to do with the use of maximum likelihood estimation in logistic and multinomial logistic regression to study rare events, as few respondent types of interest are present in the dataset. When using either a dichotomous dependent variable as is done in the first two analyses, or a trichotomous dependent variable as in Analysis 3, there are large numbers of zeros, thereby skewing the data. In these kinds of instances, logistic regression can underestimate the probability of rare events (Allison, 2012; King & Zeng, 2001). This must be taken into consideration when results are interpreted.

Finally, attention must be paid to the appropriate number of events per variable in logistic regression analyses, both binary and multinomial. It is often suggested that a ten-to-one ratio be implemented (see generally Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996). This means that for every ten cases of interest, one independent variable is included in the logistic regression model. When this ratio is reduced, regression coefficients (1) can be biased in both positive and negative directions; (2) large sample variance estimates from the logistic model both over- and underestimate the same variance of the regression coefficients; (3) the 90% confidence interval about the estimated values do not have proper coverage; (4) the Wald statistic is conservative under the null hypothesis; and (5) there are increased paradoxical associations (i.e., significance in the incorrect direction) (Peduzzi et al., 1996, p. 1373). As a result, violating the ten-to-one ratio decreases validity, while obeying the rule avoids the major issues stemming from the number of independent variables included in an analysis. However, there has recently been a calling to relax this ratio to five to one, as research has shown that doing

so has little effect on validity (Allison, 2012). This more relaxed rule was observed in the quantitative analyses.

IV. RESULTS

Qualitative Analysis

When utilized as an exploratory method, conjunctive analysis of case configurations is a straightforward method for the multivariate analysis of categorical data beginning with the investigation of patterns of clustering as well as variation in the case configurations produced (Miethe et al., 2008). This process begins with a full matrix of all possible combinations of case attributes (i.e., case configurations) and then utilizes "various procedures to minimize this complexity in order to find more parsimonious representations of the underlying structure" (Miethe et al., 2008, p. 229). In each of three separate models, five specific independent variables will be examined: sex (1 = male; 0 = female), race/ethnicity (1 = white; 0 = minority), whether the respondent has friends (1 = has friends; 0 = does not have friends), socioeconomic status (1 = receives public assistance; 0 = does not receive public assistance), and nuclear family (1 = lives in a nuclear family structure; 0 = does not live in a nuclear family structure).

Analysis 1: Conjunctive analysis of case configurations for high-rate offenders versus statistically normal juveniles. As an exploratory method for studying high-rate offenders, the first conjunctive analysis examines the patterns of clustering and variability among the case configurations of five distinct respondent characteristics. In the sample containing only high-rate offenders and statistically normal juveniles (i.e., pure conformists removed), approximately 9.3% of the respondents are high-rate offenders. Table 8 presents the case configurations for this sample. In order to more

easily observe the results, case configurations in the conjunctive matrix are rank-ordered by their relative frequencies.

Table 8. Case Configurations for High-Rate Offenders (1) and Statistically Normal Juveniles (0) Ranked by Their Cell Frequencies

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	High-Rate Offender
1	0	1	1	0	1	656	.06
2	1	1	1	0	1	624	.11
3	0	0	1	0	1	283	.06
4	1	0	1	0	1	243	.09
5	0	1	0	0	1	80	.05
6	0	0	1	1	0	53	.08
7	1	0	1	1	0	53	.21
8	0	0	0	0	1	50	.10
9	0	1	1	1	0	33	.06
10	1	1	0	0	1	32	.06
11	1	0	0	0	1	30	.17
12	0	0	1	1	1	24	.01
13	0	1	1	1	1	23	.09
14	1	1	1	1	1	20	.15
15	0	0	0	1	0	19	.11
16	1	0	1	1	1	19	.11
17	1	1	1	1	0	17	.24
18	1	0	1	0	0	13	.08
19	0	0	1	0	0	11	.18
20	0	1	0	1	0	10	.10
21	1	1	1	0	0	10	.30
22	0	1	0	1	1	9	.11
23	0	1	1	0	0	8	.01
24	1	0	0	1	0	8	.25
25	0	0	0	1	1	7	.01
26	1	1	0	1	0	7	.14
27	1	1	0	1	1	7	.14
28	0	0	0	0	0	5	.20
29	0	1	0	0	0	5	.01
30	1	0	0	1	1	4	.01
31	1	0	0	0	0	2	.01
32	1	1	0	0	0	1	.01

While 32 possible case configurations are empirically observed in this analysis, Table 8 reveals there is substantial variation in their relative cell sizes. Specifically, there are four dominant case configurations among the respondents (n= 656 for Configuration #1, n = 624 for Configuration #2, n = 283 for Configuration #3, and n = 243 for

Configuration #4). These four case configurations account for 76.3% of all observations in this sample.

The straightforward observations about the concentration of case configurations and variability in their relative frequencies provide findings that have direct implication for the future quantitative analysis of high-rate offenders as compared to statistically normal juveniles. Interestingly, in all four of the dominant case configurations, the respondents, made up of both high-rate offenders and statistically normal juveniles, are youths from nuclear families that do not receive public assistance and report having friends. A systematic investigation of the variability in the profiles of high-rate offenders across case configurations is necessary and can be assessed relative to the overall risk of being a high-rate offender (9.3%) as well as by making specific paired-comparisons across sets of case configurations (Miethe et al., 2008). Each of these approaches is easily undertaken in conjunctive analysis of case configurations in order to determine the potential impact of different independent variables as well as the existence of important interactions.

Miethe and colleagues (2008) point out that "one basic way to use conjunctive analysis to assess the main and interaction effects of particular variables involves the examination of the particular characteristics" of respondents that are associated with highest and lowest risks of being a high-rate offender (p. 234). This two-step process begins with ranking the case configurations according to the relative risk of being a high-rate offender before comparing the relative prevalence of particular categories of each variable among the highest and lowest ranked groups of case configurations (Miethe et al., 2008). Table 9 presents the ranking of relative risks of being a high-rate offender as

compared to a statistically normal juvenile among case configurations with a minimum cell frequency of 10 observations within them.

Table 9. Case Configurations for High-Rate Offenders (1) and Statistically Normal Juveniles (0) Ranked by Their Relative Risks of High-Rate Offending

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	High-Rate Offender
1	1	1	1	0	0	10	.30
2	1	1	1	1	0	17	.24
3	1	0	1	1	0	53	.21
4	0	0	1	0	0	11	.18
5	1	0	0	0	1	30	.17
6	1	1	1	1	1	20	.15
7	1	1	1	0	1	624	.11
8	0	0	0	1	0	19	.11
9	1	0	1	1	1	19	.11
10	0	0	0	0	1	50	.10
11	0	1	0	1	0	10	.10
12	1	0	1	0	1	243	.09
13	0	1	1	1	1	23	.09
14	1	0	1	0	0	13	.08
15	0	0	1	1	0	53	.08
16	1	1	0	0	1	32	.06
17	0	1	1	1	0	33	.06
18	0	0	1	0	1	238	.06
19	0	1	1	0	1	656	.06
20	0	1	0	0	1	80	.05
21	0	0	1	1	1	24	.01

The ranking of case configurations' relative risks of being a high-rate offender as compared to a statistically normal juvenile shows the wide variability of these risks across circumstances while also indicating the nature of the case profiles above the overall mean risk of being a high-rate offender (e.g., those with a risk of high-rate offending above 9.3%), those configurations substantially below the mean (e.g., 6% and lower), and the configurations between each of these. Because there is wide variability in high-rate offending risks across the case configurations—from a low of <.1% to a high of 30%—it is apparent that these independent variables have some ability to aid prediction as to whether an individual is a high-rate offender. Yet, a closer investigation is required

in order to determine which variables are the most important and what, if any, interactions may predict high-rate offenders.

To provide substantive conclusions about the relative importance of particular independent variables, it is necessary to compare the nature of the case configurations above and below the mean (Miethe et al., 2008), which brings to light a number of interesting findings. Males are found in the three highest risk profiles, while the five lowest risk profiles are made up of females. Furthermore, the four highest risk profiles involve respondents who do not come from a nuclear family; yet respondents in the four lowest risk profiles do have a nuclear family background either. There appears to be fewer differences between the highest and lowest risk groups with regard to race/ethnicity, socioeconomic status, and the presence of friends; however, it is noteworthy that the four highest risk profiles include respondents who report having friends.

According to Miethe and colleagues (2008), "an alternative method for assessing the nature of causal complexity involves variable-based comparisons across each set of case configurations that share the same profile except the variable in question" (p. 235). If large differences of equal magnitude exist in the risks of being a high-rate offender as compared to a statistically normal juvenile between levels of a category variable across each set of configurations, it would indicate a significant main-effect for that variable (Miethe et al., 2008). Yet, if the magnitude varies widely, this indicates the existence of a context-specific interaction effect—the order of which "is determined by the particular pattern of differences across configurations" (Miethe et al., 2008, p. 235). Therefore, if sex has a strong main effect, males and females should have substantially different risks

of being a high-rate offender *and* the direction as well as the magnitude of these differences should be approximately identical across contexts (in other words, pairs of case configurations should differ only in terms of the respondent's sex). Table 10 presents the paired-comparison method to further explore the sex differences in the risk of being a high-rate offender as compared to a statistically normal juvenile, with pairs grouped together. Case configurations without pairs (due to elimination by the application of minimum cell frequency rules), are included at the bottom of the table.

Table 10. Structure of Conjunctive Matrix for Main Effects and Interaction Effects of Sex for High-Rate Offenders (1) Compared to Statistically Normal Juveniles (0)

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	High-Rate Offender
1	1	1	1	1	0	17	.24
2	0	1	1	1	0	33	.06
3	1	0	1	0	0	13	.08
4	0	0	1	0	0	11	.18
5	1	0	0	0	1	30	.17
6	0	0	0	0	1	50	.10
7	1	1	1	1	1	20	.15
8	0	1	1	1	1	23	.09
9	1	1	1	0	1	624	.11
10	0	1	1	0	1	656	.06
11	1	0	1	1	1	19	.11
12	0	0	1	1	1	24	.01
13	1	0	1	0	1	243	.09
14	0	0	1	0	1	238	.06
15	1	1	0	0	1	32	.06
16	0	1	0	0	1	80	.05
17	1	1	1	0	0	10	.30
18	1	0	1	1	0	53	.21
19	0	0	0	1	0	19	.11
20	0	1	0	1	0	10	.10
21	0	0	1	1	0	53	.08

As opposed to a main-effects specification, it appears that sex differences are primarily context-specific. A three-way interaction between the respondent's sex, race, and family structure is revealed. There exist large sex differences in white respondents *without* a nuclear family background such that this profile for males results in high levels of high-rate offenders and low levels of high-rate offenders among females (see configurations #1 and #2). Additionally, there exists a substantial increase in the risk of being a high-rate offender for white males when compared across family structure (compare configurations #1 and #7), though this occurs in the opposite direction for white females across family structure (compare configurations #2 and #8). Furthermore, while there are still large differences between the sexes for minority respondents without a

nuclear family, they are in the opposite direction. This profile for males results in lower than average levels of high-rate offenders, but in higher than average levels of high-rate offenders for females (see configurations #3 and #4). Therefore, the indication of a three-way interaction between sex, race, and family structure should be included in the quantitative analysis investigating high-rate offenders versus statistically normal juveniles.

Analysis 2: Conjunctive analysis of case configurations for pure conformists versus statistically normal juveniles. In the sample containing only pure conformists and statistically normal juveniles (i.e., high-rate offenders removed), approximately 13.5% of the respondents are pure conformists. Table 11 presents the case configurations for this sample. In order to more easily observe the results, case configurations in the conjunctive matrix are rank-ordered by their relative frequencies.

Table 11. Case Configurations for Pure Conformists (1) Compared to Statistically Normal Juveniles (0) Ranked by Their Cell Frequencies

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Pure Conformist
1	0	1	1	0	1	736	.15
2	1	1	1	0	1	654	.12
3	0	0	1	0	1	315	.15
4	1	0	1	0	1	264	.12
5	0	1	0	0	1	91	.16
6	0	0	1	1	0	56	.09
7	0	0	0	0	1	51	.10
8	1	0	1	1	0	50	.06
9	0	1	1	1	0	38	.16
10	1	1	0	0	1	38	.21
11	0	1	1	1	1	28	.25
12	0	0	1	1	1	26	.08
13	1	0	0	0	1	26	.01
14	1	1	1	1	1	21	.19
15	0	0	0	1	0	20	.10
16	1	0	1	1	1	19	.11
17	1	1	1	1	0	17	.18
18	1	0	1	0	0	13	.08
19	0	0	1	0	0	11	.09
20	0	1	0	1	0	11	.09
21	0	1	1	0	0	10	.20
22	0	0	0	1	1	9	.11
23	0	1	0	1	1	9	.01
24	0	1	0	0	0	8	.38
25	1	0	0	1	0	8	.25
26	1	1	1	0	0	7	.01
27	1	1	0	1	0	7	.14
28	1	1	0	1	1	7	.14
29	0	0	0	0	0	4	.01
30	1	0	0	1	1	4	.01
31	1	0	0	0	0	3	.33
32	1	1	0	0	0	1	.01

As in the first analysis, there are 32 possible case configurations empirically observable in Analysis 2. Table 11 reveals there is again substantial variation in their relative cell sizes. In particular, there are four dominant case configurations among the respondents (n = 736 for Configuration #1, n= 654 for Configuration #2, n = 315 for Configuration #3, and n= 264 for Configuration #4). These four case configurations account for approximately 76.9% of all observations in this sample. As was the case in

the first analysis, in Analysis 2, all four of the dominant case configurations, the respondents, including both pure conformists and statistically normal juveniles, are youths from nuclear families that do not receive public assistance and report having friends. Therefore, a systematic investigation of the variability in the profiles of pure conformists across case configurations is necessary, which can be assessed relative to the overall risk of being a pure conformist (13.5%) as compared to a statistically normal juvenile and by making specific paired-comparisons across sets of case configurations (Miethe et al., 2008). Table 12 presents the ranking of relative risks of being a pure conformist as compared to a statistically normal juvenile among case configurations with a minimum cell frequency of 10 observations within them.[5]

[5] The application of minimum cell frequency rules includes the tenet of deleting all configurations with less than 10 observations (Miethe et al., 2008).

Table 12. Case Configurations for Pure Conformists (1) Compared to Statistically Normal Juveniles (0) Ranked by Their Relative Risks of Pure Conformity

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Pure Conformist
1	0	1	1	1	1	28	.25
2	1	1	0	0	1	38	.21
3	0	1	1	0	0	10	.20
4	1	1	1	1	1	21	.19
5	1	1	1	1	0	17	.18
6	0	1	0	0	1	91	.16
7	0	1	1	1	0	38	.16
8	0	1	1	0	1	736	.15
9	0	0	1	0	1	315	.15
10	1	1	1	0	1	654	.12
11	1	0	1	0	1	264	.12
12	1	0	1	1	1	19	.11
13	0	0	0	1	0	20	.10
14	0	0	0	0	1	51	.10
15	0	0	1	0	0	11	.09
16	0	1	0	1	0	11	.09
17	0	0	1	1	0	56	.09
18	0	0	1	1	1	26	.08
19	1	0	1	0	0	13	.08
20	1	0	1	1	0	50	.06
21	1	0	0	0	1	26	.01

The ranking of case configurations' relative risks of being a pure conformist as compared to a statistically normal juvenile shows the wide variability of these risks across contexts while also indicating the nature of the case profiles above the overall mean risk of being a pure conformist (e.g., those with a risk pure conformity above 13.5%), those configurations substantially below the mean (e.g., 10% and lower), and the configurations between each of these. Because there is wide variability in pure conformity risks across the case configurations—from a low of <.1% to a high of 25%—it is clear that these independent variables have some ability to aid prediction as to whether an individual is a pure conformist. Still, further examination is required in order to determine which variables are the most important and what, if any, interactions may predict pure conformity. Upon closer inspection, whites make up all but one profile

above the mean risk, while all but one of the lowest risk profiles are made up of minorities; however, there appears to be fewer differences between the highest and lowest risk groups with regard to the other independent variables in the model.

Table 13 presents the paired-comparison method to further explore the racial/ethnic differences in the risk of being a pure conformist as compared to a statistically normal juvenile, with pairs grouped together. Case configurations without pairs (due to elimination by the application of minimum cell frequency rules), are included at the bottom of the table.

Table 13. Structure of Conjunctive Matrix for Main Effects and Interaction Effects of Race for Pure Conformists (1) Compared to Statistically Normal Juveniles (0)

Config. #	White	Male	Friends	Public Assistance	Nuclear Family	N_Cases	Pure Conformists
1	1	0	1	1	1	28	.25
2	0	0	1	1	1	26	.08
3	1	1	0	0	1	38	.21
4	0	1	0	0	1	26	.01
5	1	0	1	0	0	10	.20
6	0	0	1	0	0	11	.09
7	1	1	1	1	1	21	.19
8	0	1	1	1	1	19	.11
9	1	1	1	1	0	17	.18
10	0	1	1	1	0	50	.06
11	1	0	0	0	1	91	.16
12	0	0	0	0	1	51	.10
13	1	0	1	1	0	38	.16
14	0	0	1	1	0	56	.09
15	1	0	1	0	1	736	.15
16	0	0	1	0	1	315	.15
17	1	1	1	0	1	654	.12
18	0	1	1	0	1	264	.12
19	1	0	0	1	0	11	.09
20	0	0	0	1	0	20	.10
21	0	1	1	0	0	13	.08

For the highest risk group, race/ethnicity appears to be main-effects specific, as there are stark contrasts between the races/ethnicities with respect to the risk of being a pure conformist as compared to a statistically normal juvenile when all other variables

are held constant. Therefore, while one would expect to see race/ethnicity have a significant effect on pure conformity in the quantitative models, the conjunctive analysis does not point to the need to investigate interaction-effects.

Analysis 3: Conjunctive analysis of case configurations for pure conformists versus high-rate offenders. In the sample containing only pure conformists and high-rate offenders, (i.e., statistically normal juveniles removed), approximately 63.3% of the respondents are pure conformists. Table 14 presents the case configurations among the sample. In order to more easily observe the results, case configurations in the conjunctive matrix are rank-ordered by their relative frequencies.

Table 14. Case Configurations for Pure Conformists (1) and High-Rate Offenders (0) Ranked by Their Cell Frequencies

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Pure Conformists
1	1	1	1	0	1	150	.59
2	0	1	1	0	1	148	.76
3	1	0	1	0	1	64	.67
4	0	0	1	0	1	62	.74
5	1	0	1	1	0	19	.42
6	0	1	0	0	1	15	.73
7	0	0	0	0	1	11	.55
8	0	0	1	1	0	9	.67
9	0	1	1	1	0	9	.78
10	0	1	1	1	1	9	.78
11	1	1	0	0	1	8	.75
12	1	1	1	1	0	7	.57
13	1	1	1	1	1	5	.60
14	0	0	1	0	0	4	.50
15	1	0	0	0	1	4	.25
16	1	0	1	1	1	4	.50
17	0	0	0	1	0	3	.67
18	1	0	0	1	0	3	.67
19	0	0	1	1	1	2	1.00
20	0	1	0	0	0	2	1.00
21	0	1	1	0	0	2	1.00
22	0	1	0	1	0	2	.50
23	0	1	0	1	1	2	.50
24	1	0	1	0	0	2	.50
25	1	1	1	0	0	2	.01
26	1	1	0	1	0	2	.50
27	1	1	0	1	1	2	.50
28	0	0	0	1	1	1	1.00
29	1	0	0	0	0	1	1.00

While there are 32 possible case configurations in Analysis 3, only 29 distinct case configurations are empirically observable. Table 14 reveals there is again substantial variation in their relative cell sizes. In particular, there are four dominant case configurations among the respondents (n = 150 for Configuration #1, n = 158 for Configuration #2, n = 64 for Configuration #3, and n = 62 for Configuration #4). These four case configurations account for approximately 76.5% of all observations in this

sample. As was the case in the first two analyses, in Analysis 3, all four of the dominant case configurations of respondents, including both pure conformists and high-rate offenders, are youths from nuclear families that do not receive public assistance and report having friends. Therefore, a systematic investigation of the variability in the profiles of pure conformists across case configurations is necessary, which can be assessed relative to the overall risk of being a pure conformist (63.3%) compared to a high-rate offender and by making specific paired-comparisons across sets of case configurations (Miethe et al., 2008). Table 15 presents the ranking of relative risks of being a pure conformist compared to a high-rate offender among case configurations with a minimum cell frequency of 10 observations within them.[6]

Table 15. Case Configurations for Pure Conformists (1) Compared to Statistically High-Rate Offenders (0) Ranked by Their Relative Risks of Pure Conformity

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Pure Conformist
1	0	1	1	0	1	148	.76
2	0	0	1	0	1	62	.74
3	0	1	0	0	1	15	.73
4	1	0	1	0	1	64	.67
5	1	1	1	0	1	150	.59
6	0	0	0	0	1	11	.55
7	1	0	1	1	0	9	.42

The ranking of case configurations' relative risks of being a pure conformist compared to being a high-rate offender shows the wide variability of these risks across contexts while also indicating the nature of the case profiles above the overall mean risk of being a pure conformist (e.g., those with a risk of pure conformity above 63.3%), those configurations substantially below the mean (e.g., 10% and lower), and the configurations between each of these. Because there is a wide variability in pure

[6] The application of minimum cell frequency rules includes the tenet of deleting all configurations with less than 10 observations (Miethe et al., 2008).

conformity risks across the case configurations—from a low of 42% to a high of 76%—it is clear that these independent variables have some ability to aid prediction as to whether an individual is a pure conformist. Still, further examination is required in order to determine which variables are the most important and what, if any, interactions may predict pure conformists. Upon closer inspection, females make up all but one profile above the mean risk, while all but one of the lowest risk profiles are made up of males. This pattern is visible with regard to the presence of friends as well. There appears, however, to be fewer differences between the highest and lowest risk groups with regard to the other independent variables in the model. Still, it is noteworthy that all but the lowest risk profile include respondents who report not receiving public assistance and living in a nuclear family.

Table 16 presents the paired-comparison method to further explore the sex and peer group differences in the risk of being a pure conformist as compared to a high-rate offender, with pairs grouped together. Case configurations without pairs (due to elimination by the application of minimum cell frequency rules), are included at the bottom of the table.

Table 16. Structure of Conjunctive Matrix for Main Effects and Interaction Effects of Race for Pure Conformists (1) Compared to Statistically Normal Juveniles (0)

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Pure Conformists
1	0	1	1	0	1	148	.76
2	1	1	1	0	1	150	.59
3	0	0	1	0	1	62	.74
4	1	0	1	0	1	64	.67
5	0	0	0	0	1	11	.55
6	1	0	1	1	0	11	.55
7	0	1	0	0	1	15	.73

For the highest risk group, sex appears to be main-effects specific, as there are stark contrasts between the sexes with respect to the risk of being a pure conformist as compared to a high-rate offender when all other variables are held constant. Therefore, while one would expect sex to have a significant effect on pure conformity as compared to high-rate offending in the quantitative models, the conjunctive analysis does not point to the need to investigate interaction-effects.

Analysis 4: Conjunctive analysis of case configurations for active pure conformists versus passive pure conformists. In the sample containing only active and passive pure conformists (i.e., high-rate offenders and statistically normal juveniles removed), approximately 67.2% of the respondents are active pure conformists. Table 17 presents the case configurations among for this sample. In order to more easily observe the results, case configurations in the conjunctive matrix are rank-ordered by their relative frequencies.

Table 17. Case Configurations for Active (1) Compared to Passive (0) Pure Conformists Ranked by Their Cell Frequencies.

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Active Pure Conformist
1	0	1	1	0	1	109	.83
2	1	1	1	0	1	74	.73
3	0	0	1	0	1	45	.62
4	0	1	0	0	1	45	.78
5	0	1	1	0	0	38	.79
6	1	0	1	0	1	32	.59
7	0	0	0	0	1	30	.60
8	1	1	0	0	1	30	.50
9	0	0	1	0	0	25	.68
10	1	0	0	0	1	18	.56
11	1	1	1	0	0	18	.56
12	1	0	1	0	0	16	.63
13	1	0	0	0	0	13	.38
14	0	1	0	0	0	12	.50
15	0	0	0	0	0	10	.70
16	0	1	1	1	1	7	.71
17	0	0	0	1	0	6	.67
18	0	1	1	1	0	6	.67
19	1	0	0	1	0	5	.01
20	0	0	1	1	0	4	.50
21	0	1	0	1	1	4	.50
22	1	1	0	0	0	4	.00
23	1	0	1	1	0	3	.33
24	1	0	0	1	1	3	.67
25	1	1	0	1	0	3	.67
26	1	1	1	1	0	3	.33
27	1	1	1	1	1	3	.67
28	0	0	0	1	1	2	.01
29	0	0	1	1	1	2	.50
30	0	1	0	1	0	2	.50
31	1	0	1	1	1	2	.50
32	1	1	0	1	1	2	1.00

As in the first two analyses, there are 32 possible case configurations empirically observable in Analysis 4. Table 17 again reveals there is substantial variation in their relative cell sizes. In the case of Analysis 4, while there are two dominant case configurations among the respondents (n = 109 for Configuration #1, n = 74 for Configuration #2), they are not as great as the dominant cases in the previous three

analyses. These two case configurations account for only approximately 31.4% of all observations in this sample. As was the case in the first two analyses, in Analysis 3, both of the dominant case configurations of respondents, including both active and passive pure conformists, are youths from nuclear families that do not receive public assistance and report having friends. Therefore, a systematic investigation of the variability in the profiles of active pure conformists across case configurations is necessary, which can be assessed relative to the overall risk of being an active pure conformist (67.2%) and by making specific paired-comparisons across sets of case configurations (Miethe et al., 2008). Table 18 presents the ranking of relative risks of being an active pure conformist among case configurations with a minimum cell frequency of 10 observations within them.[7]

[7] The application of minimum cell frequency rules includes the tenet of deleting all configurations with less than 10 observations (Miethe et al., 2008).

Table 18. Case Configurations for Active (1) Compared to Passive (0) Pure Conformists Ranked by Their Relative Risks of Active Pure Conformity

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Active Pure Conformist
1	0	1	1	0	1	109	.83
2	0	1	1	0	0	38	.79
3	0	1	0	0	1	45	.78
4	1	1	1	0	1	74	.73
5	0	0	0	0	0	10	.70
6	0	0	1	0	0	25	.68
7	1	0	1	0	0	16	.63
8	0	0	1	0	1	45	.62
9	0	0	0	0	1	30	.60
10	1	0	1	0	1	32	.59
11	1	0	0	0	1	18	.56
12	1	1	1	0	0	18	.56
13	1	1	0	0	1	30	.50
14	0	1	0	0	0	12	.50
15	1	0	0	0	0	13	.38

The ranking of case configurations' relative risks of being an active pure conformist shows the wide variability of these risks across circumstances while also demonstrating the nature of the case profiles above the overall mean risk of being an active pure conformist (e.g., those with a risk of active pure conformity above 67.5%), those configurations substantially below the mean (e.g., 63% and lower), and the configurations between each of these. Because there is wide variability in active pure conformity risks across the case configurations—from a low of < 38% to a high of 83%—it is clear that these independent variables have some ability to aid prediction as to whether an individual is an active pure conformist. However, further examination is required in order to determine which variables are the most important and what, if any, interactions may predict active pure conformists. Upon closer inspection, females make up all but one profile above the mean risk, while the majority of the lowest risk profiles are made up of males. Furthermore, there appears to be a difference between the highest

and lowest risk groups with regard to the presence of friends in that three of the four highest risk profiles for the active pure conformity group report having friends while three of the four lowest risk profiles for this group report not having friends.

Table 19 presents the paired-comparison method to further explore the sex differences in the risk of being an active pure conformist, with pairs grouped together. Case configurations without pairs (due to elimination by the application of minimum cell frequency rules), are included at the bottom of the table.

Table 19. Structure of Conjunctive Matrix for Main Effects and Interaction Effects of Sex for Active (1) Compared to Passive (0) Pure Conformists

Config. #	Male	White	Friends	Public Assistance	Nuclear Family	N_Cases	Active Pure Conformist
1	1	1	1	0	1	74	.73
2	0	1	1	0	1	109	.83
3	1	0	1	0	0	16	.63
4	0	0	1	0	0	25	.68
5	1	0	1	0	1	32	.59
6	0	0	1	0	1	45	.62
7	1	0	0	0	1	18	.56
8	0	0	0	0	1	30	.60
9	1	1	1	0	0	18	.56
10	0	1	1	0	0	38	.79
11	1	1	0	0	1	30	.50
12	0	1	0	0	1	45	.78
13	1	0	0	0	0	13	.38
14	0	0	0	0	0	10	.70
15	0	1	0	0	0	12	.50

As opposed to a main-effects specification, it appears that sex differences are primarily context-specific. Though perhaps not as strong as the finding in the first analysis, in Analysis 3, a three-way interaction between the respondent's sex, race/ethnicity, and family structure is revealed. There exist large differences in the risk of active pure conformity between white male respondents *with* a nuclear family background (see configuration #1), minority male respondents *with* a nuclear family

background (see configuration #7), white male respondents *without* a nuclear family background (see configuration #9), and minority male respondents *without* a nuclear family background (see configuration #13). This pattern also holds with regard to race/ehtnicity and family structure for female respondents (see configurations #2, #6, #10, and #4, respectively). Based on these findings, a three-way interaction between sex, race/ethnicity, and family structure should be included in the quantitative analysis investigating active and passive pure conformists versus.

Quantitative Analysis

Results of the binary logistic regression models (Analyses 1 and 2) are presented in log odds, as well as are transformed to odds ratios and percent changes in odds. These transformations are the most widely used and simplest of those available. To complete this transformation, one raises the base by the logit coefficient(e^{b_i}). After the transformation, one is looking at factor changes or simple odds, which are a more meaningful metric; thus, the transformed values will be the focus of the interpretation of the results.

Additionally, for each model, the model chi-square value (model χ^2) and the pseudo R^2 values are reported. The model chi-square in logistic regression can be considered to be the analog to the F-test for the linear model. The null hypothesis is that all slopes in the equation are equal to zero in the population, meaning that the empty, intercept-only model provides the best fit to the data. The alternative hypothesis is that at least one of the independent variables' slopes is not equal to zero in the population, and thus, the full model provides a better fit to the data. One should keep in mind that it is possible to get a statistically significant model chi-square without one of the slopes being

statistically significant, however, which can occur when the slopes of the independent variables fall just short of being statistically significant. Yet, model-chi squares that lie far into the critical region are not likely to suffer from this limitation.

Logistic regression does not have an analog to the R^2 value that is found in Ordinary Least Squares regression ("Stata annotated," n,d.). Stata does report a pseudo R^2 value in logistic regression; however, this value should be interpreted with caution ("Stata annotated," n,d.). Furthermore, as Veall and Zimmermann (1996) point out, the size of the R^2 value that is acceptable is dependent on a number of factors, including data type. One would expect, for example, for survey data to produce lower R^2 values (Veall & Zimmermann, 1996).

Two approaches to discrete statistical modeling—logistic and probit regression—were estimated to determine which provides a better fit to the data. Results from the probit regression model will largely agree with the results produced by a logistic regression model; however, probit regression models do have some advantages over logistic regression in some situations (Long, 1997). When one includes the latent variable in probit regression, it is normally distributed and measured in z-scores (Long, 1997). The raw regression coefficients then reflect this difference.

In terms of fitting the data, probit regression fits a cumulative normal curve (i.e., a sigmoid curve as in logistic regression), which can be found by cutting the probability distribution in half and inverting it (Long & Freese, 2006). Thus, the area at a given point under the curve provides the cumulative percent making the coefficient provide a change in the standard deviation or z-score of the standard distribution (Long & Freese, 2006). Probit regression deals with heteroscadasticity and restricts probabilities to lie

between zero and one. When compared to logistic regression, probit models will be most different at the extremes (Long, 1997). In the case of extreme outliers, logistic regression is more helpful and is also more popular because of its ability to transform log odds to odds ratios as the interpretation is simpler. For the first four analyses, both logistic and probit regression models were investigated. The models, however, fit equally well to the data. Therefore, logistic regression—the simpler method—is preferred in each analysis.

Analysis 1: Binary logistic regression comparing high-rate offenders to statistically normal juveniles. Table 20 presents the binary logistic regression results comparing high-rate offenders to statistically normal juveniles (Model 1a). The model chi-square is 488.27, which lies in the critical region; therefore, one would reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Thus, the full model provides a better fit to the data than the empty, intercept-only model, and should therefore be investigated and interpreted. Further, the Likelihood Ratio Test (LRT) examines nested models. A model is said to be nested if it is a special case of the original model. The LRT concerns the difference between the log likelihoods of each model: $LRT = (-2 \times restrictedLL) - (2 \times unrestrictedLL)$, where $x^2{}_{df} = \text{the number of restrictions.}$ Negative two multiplied by the log likelihood $(-2 \times LL)$ is called the deviance, which is the difference between the null and saturated likelihoods. Therefore, the LRT assesses the difference in deviance such that $LRT = (deviance_{empty}) - (deviance_{full})$. The null hypothesis for the LRT is that the empty model fits equally well as the full model, while the alternative hypothesis is that it does not fit as well. The LRT for Model 1a is 359.219 with 20 degrees of freedom. This

value lies in the critical region; thus, one would reject the null hypothesis and conclude that the full model provides a significantly better fit to the data than the empty model.

Table 20. Model 1a: Binary Logistic Regression with Transformations Comparing High-Rate Offenders (1) to Statistically Normal Juveniles (0)

Theory	Variable	Coefficient	Standard Error	z-score	Probability	Odds Ratio	Percent Change in Odds
Control Variables	Male	.363*	.172	2.11	.035	1.438*	43.8*
	Age	2.569*	1.109	2.32	.021	13.046*	---*
	Age^2	-.094**	.035	-2.72	.007	.910**	9.0**
	White	-.179	.175	-1.02	.308	.836	16.4
	Nuclear Family	.117	.260	.045	.651	1.124	12.4
	Public Assistance	-.590	.311	-1.90	.057	.554	44.6
	Grade Level	.287***	.080	3.58	.001	1.333***	33.3***
	School Year Employment	-.239	.188	-1.27	.205	.788	21.2
	Summer Employment	-.028	.197	-0.14	.889	.973	2.7
	Friends	.218	.193	1.13	.257	1.244	24.4
Social Control	Peer Attachment	-.001	.162	-.0.01	.998	.100	90.0
	Parental Attachment	-.023	.033	-0.70	.484	.977	2.3
	Parental Supervision	-.001	.010	-0.03	.976	.100	90.0
	Grade Point Average	.214*	.099	2.15	.031	1.239*	23.9*
	Attachment to School	-.008	.018	-0.46	.646	.992	0.8
	Importance of Religion	-.050	.032	-1.55	.121	.950	5.0
Strain	Family/Friend Suicide	.029	.219	0.13	.896	1.029	2.9
	Violent Victimization	.385***	.043	8.91	.001	1.470***	47.0***
Social Learning / Differential Association	Peer Delinquency	.124***	.018	6.99	.001	1.132***	13.2***
Self-Control	Self-Control	-.126***	.016	-7.74	.001	.882***	11.8***
	Constant	-17.670*	8.904	-1.98	.047	---	---
N = 3,447		Model χ^2 = 488.27			Pseudo R^2 = 0.2532		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

The odds of being a high-rate offender, as compared to a statistically normal juvenile, when all of the independent variables in the model are equal to zero are -17.670, which is statistically significant. All significant effects are presented on average and while controlling for the other independent variables in the model. There are some control variables that were found to be significant in Model 1a. Being male increases the odds of being a high-rate offender, as compared to a statistically normal juvenile, by a factor of 1.438. In other words, males have 43.8% higher odds of being a high-rate offender than females. As males have consistently been found to be more delinquent than females (see generally, Saspi, Moffitt, Silva, Stouthamer-Loever, Krueger, & Schmutte, 1994; De Brito et al., 2009; Farrington, 1983; Felson & Haynie, 2002; Loeber, Farrington, Stouthamer-Loeber, Moffitt, & Caspi, 1998; Loeber, Hoeve, Slot, & van der Laan, 2012; Moffitt, 1993; Moffit & Caspi, 2001; Moffitt, Caspi, Harrington, & Milne, 2002; Nagin et al, 2005; Odgers, Moffitt, Broadbent, Dickson, Hancox, Harrington, Poulton, Sears, Thompson & Caspi, 2008; Reppucci, 1999; Schwartz & Steffensmeier, 2007; Steffensmeier & Allan, 1996; Van Mastrigt, & Farrington, 2009; Wolfgang et. al, 1987), this finding is predictable.

Each one year increase in age lowers the odds of being a high-rate offender, as compared to a statistically normal juvenile, by a factor of 13.046. Odds ratios greater than two are not transformed into percent change in odds, but instead are interpreted as a multiplicative increase in the odds of an event. This independent variable however is problematic, as it assumes that the effect of age is linear with respect to crime—an assumption that has been shown to be incorrect in research (see generally, Sampson & Laub, 2003; Walker & Madden, 2012; Weisburd & Britt, 2013). Therefore, age squared

was included in the model in order to take into account this non-linear or non-monotonic function. The finding that the age squared variable is negative and significant indicates that the effect of age decreases as people get older. This is unsurprising as people tend to age out of crime (see generally, Dean, Brame, & Piquero, 1996; Farrington, 1986; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013). Further, for every one year increase in grade level, the odds of being a high-rate offender increase by a factor of 1.333 (or a 33.3% change in odds).

With regard to the theoretically-based independent variables included in the model, there are a number of interesting findings. For every one unit increase in grade point average, the odds of being a high-rate offender, as compared to a statistically normal juvenile, increase by a factor of 1.239 (or a 23.9% change in odds), a finding which is undoubtedly puzzling. Every incident of violent victimization experienced increases the odds of being a high-rate offender, as compared to a statistically normal juvenile, by a factor of 1.470 (or a 47.0% change in odds), which is bolstered by previous research that has found a link between violent victimization experience and delinquency (see for example, Hay & Evans, 2006). For every one unit increase in peer delinquency, the odds of being a high-rate offender, as compared to a statistically normal juvenile, are increased by a factor of 1.132 (or a 13.2% change in odds). This finding is expected given the extensive research highlighting a clear and consistent positive correlation between association with deviant peers and rates of crime at all ages (see for example, Fergusson et al., 2002; Kramer & Vaquera, 2011). Finally, a one unit increase in self-control decreases the odds of being a high-rate offender, as compared to a statistically normal juvenile, by a factor of .882 (or a 11.8% change in odds). Hirschi

(1969) asserts that criminality and delinquency are appealing to those individuals with low self-control as the characteristic results in a number of distinctive personality traits including impulsivity, adventure-seeking behavior, self-centeredness, little tolerance for frustration, a lack of diligence, and an inability to defer gratification.

Table 21 presents the binary logistic regression results comparing high-rate offenders to statistically normal juveniles while incorporating a three-way interaction between sex, race, and family structure as suggested by the conjunctive analysis for case configurations (Model 1b) ; however, this term fails to reach a level of statistical significance. Additionally, the possible impacts of three separate two-way interactions were investigated: (1) sex and race, (2) sex and family structure, and (3) race and family structure. As was the case with the three-way interaction however, none of the two-way interaction terms reached a level of statistical significance. Furthermore, the independent variables found to be significant in Model 1a remained significant in Model 1b

Table 21. Model 1b: Binary Logistic Regression Comparing High-Rate Offenders (1) to Statistically Normal Juveniles (0), with Interactions

Theory	Variable	Coefficient	Standard Error	z-score	Probability	Odds Ratio	Percent Change in Odds
Interactions	Male x White	.260	.556	0.47	.640	1.297	29.7
	Male x Nuclear Family	-.613	.508	-1.21	.227	.542	45.8
	White x Nuclear Family	-.269	.515	-0.52	.602	.794	20.6
	Male x White x Nuclear Family	.396	.692	0.57	.567	1.486	48.6
Control Variables	Male	.442	.394	1.12	.262	1.556	55.6
	Age	2.519*	1.109	2.27	.023	12.411*	---*
	Age^2	-.092**	.035	-2.68	.007	.912**	8.8**
	White	-.294	.425	-0.69	.489	.745	25.5
	Nuclear Family	.493	.416	1.18	.236	1.637	63.7
	Public Assistance	-.603	.133	-1.94	.053	.547	45.3
	Grade Level	.287***	.080	3.57	.001	1.332***	33.2***
	School Year Employment	-.237	.188	-1.26	.209	.789	21.1
	Summer Employment	-.029	.197	-0.15	.883	.972	2.8
	Friends	.224	.193	1.16	.246	1.251	25.1
Social Control	Peer Attachment	.003	.062	0.04	.967	1.003	0.3
	Parental Attachment	-.023	.033	-0.70	.482	.977	2.3
	Parental Supervision	-.001	.010	-0.07	.944	.999	0.1
	Grade Point Average	.215*	.099	2.16	.030	1.240*	24.0*
	Attachment to School	-.008	.018	-0.47	.640	.992	0.8
	Importance of Religion	-.052	.032	-1.60	.110	.949	5.1
Strain	Family/Friend Suicide	.014	.220	0.06	.948	1.014	1.4
	Violent Victimization	.388***	.043	8.92	.001	1.474***	47.4***
Social Learning / Differential Association	Peer Delinquency	.125***	.018	7.03	.001	1.133***	13.3***
Self-Control	Self-Control	-.126***	.016	--7.73	.001	.882***	11.8***
	Constant	-17.326	8.902	-1.95	.052	---	---
N = 3,447		Model χ^2 = 362.92			Pseudo R^2 = 0.2360		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

Analysis 2: Binary logistic regression comparing pure conformists to statistically normal juveniles. Table 22 presents the binary logistic regression results comparing pure conformists to statistically normal juveniles (Model 2). The model chi-square is 567.41, which lies in the critical region, suggesting that one would reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring investigation and interpretation. Moreover, the LRT for Model 2 is -41.615 with 20 degrees of freedom. This value lies in the critical region; thus, one would reject the null hypothesis and conclude that the full model provides a significantly better fit to the data than the empty model.

Table 22. Model 2: Binary Logistic Regression and Transformation to Odds Ratios Comparing Pure Conformists (1) to Statistically Normal Juveniles (0)

Theory	Variable	Coefficient	Standard Error	z-score	Probability	Odds Ratio	Percent Change in Odds
Control Variables	Male	-.006	.115	-0.05	.958	.994	0.6
	Age	-.659	.604	-1.09	.275	.517	48.3
	Age^2	.033	.019	1.80	.072	1.034	3.4
	White	-.003	.012	-0.22	.823	.997	0.3
	Nuclear Family	-.792***	.191	-4.14	.001	.453***	54.7
	Public Assistance	.004	.006	0.63	.528	1.004	0.4
	Grade Level	-.376***	.057	-6.65	.001	.687	31.3
	School Year Employment	-.030	.021	-1.39	.165	.971	2.9
	Summer Employment	-.025	.019	-1.32	.185	.975	2.5
	Friends	-.001	.003	0.38	.706	.999	0.1
Social Control	Peer Attachment	.007	.042	0.18	.860	1.007	0.7
	Parental Attachment	-.034	.019	-1.80	.072	.966	3.4
	Parental Supervision	.025***	.007	3.61	.001	1.026***	2.6
	Grade Point Average	.051	.078	0.65	.515	1.052	5.2
	Attachment to School	-.026	.013	-1.92	.055	.974	2.6
	Importance of Religion	-.019	.024	-0.77	.444	.982	1.8
Strain	Family/Friend Suicide	-.099	.244	-0.41	.685	.906	9.4
	Violent Victimization	-.817***	.153	-5.35	.001	.442***	55.8
Social Learning / Differential Association	Peer Delinquency	-.157***	.019	-8.32	.001	.855***	14.5
Self-Control	Self-Control	.108***	.012	8.88	.001	1.114***	11.4
	Constant	-1.496	4.886	-0.31	.759	---	---
N = 3,699		Model $\chi^2 = 567.41$			Pseudo $R^2 = 0.1787$		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

The odds of being a pure conformist, as compared to a statistically normal juvenile, when all of the independent variables in the model are equal to zero are -1.496, though this intercept is not significant. All significant effects are presented on average and while controlling for the other independent variables in the model. There are some control variables that were found to be significant in Model 2. Being the product of a nuclear family structure decreases the odds of an individual being a pure conformist, as compared to a statistically normal juvenile, by a .453 (or a 54.7% change in odds). While this finding is contrary to previous research that indicates juveniles from single-parent households have higher rates of delinquency (see for example, Thomas et al., 1996), it may be related to the differing roles of adolescents in non-traditional families. Juveniles from backgrounds other than the traditional nuclear family may have more responsibilities which may cause them to mature more quickly and possibly speed up their moral development (Mathern & Thomas, 2001). Also, for every one year increase in grade level, the odds of being a pure conformist, as compared to a statistically normal juvenile, decrease by a factor of .687 (or a 31.3% change in odds). Given the finding with regard to high-rate offending in Analysis 1 (Model 1a), this is expected.

There are a number of interesting findings concerning the theoretically-based independent variables included in the model. For every one unit increase in parental supervision, the odds of being a pure conformist, as compared to a statistically normal juvenile, increases by a factor of 1.026 (or a 2.6% change in odds). This finding makes intuitive sense as better supervised juveniles should have fewer opportunities to commit delinquency (Wilson, 1980). For every one unit increase in violent victimization, the odds of being a pure conformist, as compared to a statistically normal juvenile, are

lowered by a factor of .442 (or a 55.8% change in odds). Agnew (2001) has argued that criminal victimization may be among the most substantial strains experienced by juveniles, and therefore may be an important cause of delinquency. This assertion was later substantiated empirically by Hay and Evans (2006). For every one unit increase in peer delinquency, the odds of being a pure conformist, as compared to a statistically normal juvenile, are decreased by a factor of .855 (or a 14.5% change in odds). Given the extensive research highlighting a consistent positive correlation between association with deviant peers and rates of crime at all ages (see for example, Fergusson et al., 2002; Kramer & Vaquera, 2011), it is unsurprising that individuals who have more delinquent friends are less apt to be pure conformists. Finally, a one unit increase in self-control increases the odds of being a pure conformist, as compared to a statistically normal juvenile, by a factor of .855 (or a 17.2% change in odds). The finding that pure conformists have higher levels of self-control fits well with their caricature—at least with that imagined for active pure conformists (see Analysis 4 for a comparison of active and passive pure conformists). As no interaction was suggested by the conjunctive analysis of case configurations for pure conformists, no further models are included in Analysis 2.

Analysis 3: Binary logistic regression comparing pure conformists to high-rate offenders. For the purpose of symmetry, it is necessary to compare outliers directly to one another—pure conformists compared to high-rate offenders. Table 23 presents the binary logistic regression results comparing pure conformists to statistically normal juveniles (Model 3). The model chi-square is 681.22, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides

a better fit to the data than the empty, intercept-only model, requiring investigation and interpretation. Moreover, the LRT for Model 2a is 697.5706 with 20 degrees of freedom. This value lies in the critical region; thus, one would reject the null hypothesis and conclude that the full model provides a significantly better fit to the data than the empty model.

Table 23. Model 3: Binary Logistic Regression and Transformation to Odds Ratios Comparing Pure Conformists (1) to High-Rate Offenders (0)

Theory	Variable	Coefficient	Standard Error	z-score	Probability	Odds Ratio	Percent Change in Odds
Control Variables	Male	-.256	.208	-1.23	.218	.774	22.6
	Age	-4.321***	1.275	-3.39	.001	.013***	98.7
	Age^2	.143***	.040	3.59	.001	1.154***	15.4
	White	.026	.028	0.95	.341	1.027	2.7
	Nuclear Family	-.603	.448	-1.35	.178	.547	45.3
	Public Assistance	-.001	.004	-0.26	.798	.999	0.1
	Grade Level	-.024***	.006	-3.67	.001	.977***	2.3
	School Year Employment	-.015	.019	-0.80	.423	.985	1.5
	Summer Employment	.014	.007	1.92	.055	1.014	1.4
	Friends	-.007**	.003	-2.66	.008	.993**	0.7
Social Control	Peer Attachment	-.077	.071	-1.08	.281	.926	7.4
	Parental Attachment	-.078	.053	-1.47	.141	.925	7.5
	Parental Supervision	.007	.008	0.82	.412	1.007	0.7
	Grade Point Average	.139	.140	0.99	.321	1.149	14.9
	Attachment to School	.074***	.022	3.38	.001	1.077***	7.7
	Importance of Religion	.004	.027	0.16	.872	1.004	0.4
Strain	Family/Friend Suicide[8]	---	---	---	---	---	---
	Violent Victimization	-.834***	.097	-8.55	.001	.434***	56.6
Social Learning / Differential Association	Peer Delinquency	-.303***	.025	-12.17	.001	.739***	26.1
Self-Control	Self-Control	.008	.006	1.33	.182	1.008	0.8
	Constant	33.828***	10.766	3.30	.001	---	---
N = 944		Model χ^2 = 681.22			Pseudo R^2 = 0.5019		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

[8] The independent variable family/friend suicide was omitted because it predicts the dependent variable perfectly.

The odds of being a pure conformist, as compared to a high-rate offender, are 33.828, which is statistically significant. A one year increase in age decreases the odds of being a pure conformist by a factor of .013 (or a 98.7% change in odds). Again, age squared was included in the model in order to take into account a non-linear or non-monotonic function. In other words, with increasing age, pure conformity becomes less common; however, the positive effect for age squared indicates that beyond some age threshold pure conformity begins to increase again. So, younger juveniles are more often pure conformists, but it seems that if people make it past those crime-prone adolescent years without breaking the law, the likelihood that they remain a pure conformist increases as they age. This fits very well with what is known about adolescent law breaking, which peaks in middle- to late-adolescence before dropping sharply and remaining low throughout adulthood (see for example, Dean et al., 1996; Farrington, 1986; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013). Further, for every one year increase in grade level, the odds of being a pure conformist, as compared to a high-rate offender, are decreased by a factor of .977 (or a 2.3% change in odds).

The last significant control variable measures the presence of friends. A one unit increase in the presence of friends decreases the odds of being a pure conformist by a factor of .993 (or a 0.7% change in odds). This finding is particularly interesting as the link between peers and delinquency has long been established (see for example, Burgess & Akers, 1966; Gottfredson & Hirschi, 1990; McDermott & Nagin, 2001, p. 289; Sutherland, 1947; Thornberry, 2006). One would expect then, for pure conformists to have fewer friends and therefore, less opportunities for crime. The finding regarding the presence of friends in Model 3 supports this idea.

With regard to the theoretical variables included in Model 3, there are a number of interesting findings. For every one unit increase in attachment to school, the odds of being pure conformist, as compared to a high-rate offender, are increased by a factor of 1.077 (or a 7.7% change in odds). This finding makes intuitive sense given previous research indicating that low school attachment is correlated with delinquency (see for example, Hawkins & Weis, 1985; Maguin & Loeber, 1996).

As was the case in the previous analyses, violent victimization and peer delinquency are both found to be significant in Model 3. For every one unit increase in violent victimization, the odds of being a pure conformist, as compared to a high-rate offender, are decreased by a factor of .434 (or a 56.6% change in odds). Because research has found that experience with violent victimization increases the likelihood of law-violating behavior (Agnew, 1992; Hay & Evans, 2006), it follows that a lack of violent victimization experience is related to pure conformity. Further, a one unit increase in peer delinquency decreases the odds of being a pure conformist, as compared to a high-rate offender, by a factor of .739 (a 26.1% change in odds), which is predictable given the well-established relationship between peer delinquency and delinquency. Interestingly, self-control was not statistically significant in Model 3.

Analysis 4: Binary logistic regression comparing active to passive pure conformists. It is important, as previously outlined, to consider the possibility that there exist two types of pure conformists, termed active and passive. Active pure conformists are those juveniles who purposely avoid law-violating behavior, striving instead to be perfect citizens and all around model children. Passive pure conformists, on the other hand, are those juveniles who do not break the law because they either have not been

provided the opportunity (for example, having no friends to offend with), or are unmotivated to commit delinquency. Passive pure conformists may be the equivalent of Demuth's (2004) loners. Because of the stark differences that are likely to be present between the two caricatures of pure conformity, it is necessary to investigate how these two groups compare to one another. In order to facilitate this, active and passive pure conformists must be identified. For the purposes of the current study, active pure conformists are those individuals who report never having violated the law and have a grade point average of 3.0 or higher on a scale of 4.0. This results in the identification of 394 active pure conformists (n = 394). Conversely, passive pure conformists are those respondents who have not engaged in delinquency and have a grade point average below 3.0 on a 4.0 scale, which results in the identification of 204 individuals meeting these requirements (n = 204).

Due to the substantial differences between the active and passive pure conformists observed in the descriptive statistics presented in Table 6, as well as the plausible normative distinctions previously outlined, it is important to examine these two groups further. Table 24 presents the binary logistic regression results comparing active to passive pure conformists (Model 4a). The independent variable measuring grade point average was excluded from the model as it was used to distinguish active and passive pure conformists from one another. The model chi-square is 69.7, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring examination and interpretation. Additionally, the LRT for Model 4a is 69.7304 with 20

degrees of freedom. This value lies in the critical region; thus, one would reject the null hypothesis and conclude that the full model provides a significantly better fit to the data than the empty model.

Table 24. Model 4a: Binary Logistic Regression and Transformation to Odds Ratios Comparing Active Pure (1) to Passive Pure Conformists (0)

Theory	Variable	Coefficient	Standard Error	z-score	Probability	Odds Ratio	Percent Change in Odds
Control Variables	Male	-.521*	.245	-2.13	.033	.594*	40.6*
	Age	-1.321	1.408	-0.94	.348	.267	73.3
	Age^2	.032	.043	0.75	.454	1.033	3.3
	White	.933***	.260	3.58	.001	2.542***	---***
	Nuclear Family	.540	.416	1.30	.194	1.716	71.6
	Public Assistance	.018	.014	1.29	.196	1.019	1.9
	Grade Level	.167	.210	0.79	.428	1.182	18.2
	School Year Employment	.060	.117	0.51	.608	1.062	6.2
	Summer Employment	-.060	.226	-0.26	.791	.942	5.8
	Friends	.006	.007	0.87	.386	1.006	0.6
Social Control	Peer Attachment	.051	.083	0.61	.539	1.053	5.3
	Parental Attachment	.066	.044	1.49	.136	1.068	6.8
	Parental Supervision	-.005	.015	-0.34	.731	.995	0.5
	Attachment to School	-.012	.029	-0.42	.672	.988	1.2
	Importance of Religion	.039	.050	0.76	.444	1.040	4.0
Strain	Family/Friend Suicide	.106	.561	0.19	.850	1.112	11.2
	Violent Victimization	.169	.301	0.56	.576	1.184	18.4
Social Learning / Differential Association	Peer Delinquency	-.092*	.037	-2.47	.014	.912*	8.8*
Self-Control	Self-Control	.100***	.024	4.15	.001	1.106***	10.6***
	Constant	8.064	11.408	0.71	.480	---	---
N = 598		Model $\chi^2 = 69.7$			Pseudo $R^2 = 0.1359$		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

The odds of being an active pure conformist (as compared to a passive pure conformist) when all of the independent variables in the model are equal to zero are 8.064, though this is not statistically significant. All significant effects are presented on average and while controlling for the other independent variables in the model. Being male decreases the odds of being an active pure conformist by .594. In other words, males have 40.6% lower odds than females of being active pure conformists, as compared to passive pure conformists. This finding is in line with the caricature of an active pure conformist previously forwarded and the prediction made in Table 6. Additionally, being white increases the odds of being an active pure conformist by 2.542. Odds ratios greater than two are not transformed into percent change in odds, but instead are interpreted as a multiplicative increase in the odds of an event. Therefore, the odds of being an active pure conformist are approximately two and a half times that of the passive pure conformists when respondents are white.

There are two interesting findings concerning the theoretically-based independent variables included in the model. For every one unit increase in peer delinquency, the odds of being an active pure conformist, as compared to a passive pure conformist, are decreased by a factor of .912 (or an 8.8% change in odds). Again, this fits well with the caricatures presented. Active pure conformists are proposed to purposefully avoid law-violating behavior. It would be expected then that they are likely to avoid delinquent peers in an effort to refrain from delinquent behavior. A one unit increase in self-control increases the odds of being an active pure conformist, as compared to a passive pure conformist, by a factor of 1.106 (or a 10.6% change in odds). Again, as active pure

conformists are imagined to intentionally avoid delinquency, they are likely to have higher levels of self-control than passive pure conformists.

Table 25 presents the binary logistic regression results comparing active and passive pure conformists while incorporating the interactions of interest as suggested by the conjunctive analysis for case configurations (Model 4b); however, this term fails to reach a level of statistical significance. Additionally, the possible impacts of three separate two-way interactions were investigated: (1) sex and race, (2) sex and family structure, and (3) race and family structure. As was the case with the three-way interaction, none of these two-way interaction terms reached a level of statistical significance. Furthermore, the independent variables found to be significant in Model 4a remained significant in Model 4b, though gender was no longer found to be statistically significant.

Table 25. Model 4b: Binary Logistic Regression Comparing Active (1) to Passive (0) Pure Conformists, with Interactions

Theory	Variable	Coefficient	Standard Error	z-score	Probability	Odds Ratio	Percent Change in Odds
Interactions	Male x White	-547	.837	-0.65	.514	.579	42.1
	Male x Nuclear Family	.943	.766	1.23	.218	2.568	---
	White x Nuclear Family	.301	.679	0.44	.657	1.351	35.1
	Male x White x Nuclear Family	-.709	1.049	-0.68	.499	.492	50.8
Control Variables	Male	-.528	.582	-0.91	.364	.590	41.0
	Age	-1.344	1.426	-0.94	.346	.261	73.9
	Age^2	.033	.043	0.76	.449	1.033	3.3
	White	1.173*	.553	2.12	.034	3.232*	---*
	Nuclear Family	.122	.599	0.20	.839	1.130	13.0
	Public Assistance	.018	.014	1.24	.216	1.018	1.8
	Grade Level	.176	.215	0.82	.412	1.193	19.3
	School Year Employment	.064	0108	0.59	.556	1.066	6.6
	Summer Employment	-.050	.194	-0.26	.799	.952	4.8
	Friends	.006	.007	0.92	.359	1.006	0.6
Social Control	Peer Attachment	.046	.086	0.53	.595	1.047	4.7
	Parental Attachment	.062	.045	1.38	.168	1.064	6.4
	Parental Supervision	-.004	.015	-0.24	.809	.996	0.4
	Attachment to School	-.015	.029	-0.50	.614	.985	1.5
	Importance of Religion	.040	.051	0.79	.430	1.041	4.1
Strain	Family/Friend Suicide	.067	.566	0.12	.905	1.070	7.0
	Violent Victimization	.189	.310	0.61	.542	1.209	20.9
Social Learning / Differential Association	Peer Delinquency	-.103**	.038	-2.72	.007	.902**	9.8**
Self-Control	Self-Control	.098***	.025	4.00	.001	1.103***	10.3***
	Constant	8.382	11.580	0.72	.469	---	---
N = 598		Model $\chi^2 = 74.98$			Pseudo $R^2 = 0.1462$		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

Analysis 5: Multinomial logistic regression examining all outliers/deviants.

Because the parameter estimates in multinomial logistic regression are relative to the reference group, the standard interpretation of the results is a unit change in the predictor variable. The results here are not transformed to odds ratios, but rather are presented as changes in log odds. Table 26 presents the multinomial logistic regression results comparing statistically normal juveniles (0), high-rate offenders (1), and pure conformists (2) (Model 5a). The model chi-square is 2,806.54, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring examination and interpretation.

Table 26. Model 5a: Multinomial Logistic Regression Comparing High-Rate Offenders (1) and Pure Conformists (2) to Statistically Normal Juveniles (0)

		High-Rate Offenders (N = 346)			Pure Conformists (N = 598)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Control Variables	Male	.195	.159	.221	-.076	.109	.484
	Age	3.510***	.990	.001	-.937	.574	.102
	Age^2	-.114***	.031	.001	.034	.018	.056
	White	.008	.024	.730	.026	.023	.265
	Nuclear Family	1.228***	.272	.001	.532*	.210	.011
	Public Assistance	-.029***	.003	.001	-.031***	.003	.001
	Grade Level	-.086***	.014	.001	-.104***	.014	.001
	School Year Employment	.018	.013	.179	-.006	.014	.693
	Summer Employment	-.041***	.010	.001	-.024*	010	.017
	Friends	-.018***	.002	.001	-.028***	.002	.001
Social Control	Peer Attachment	.044	.052	.391	.042	.041	.303
	Parental Attachment	-.476***	.055	.001	-.525***	.047	.001
	Parental Supervision	-.051***	.007	.001	-.037***	.005	.001
	GPA	-.001	.015	.968	.440***	.070	.001
	Attachment to School	.332***	.089	.001	.044***	.012	.001
	Importance of Religion	-.110***	.023	.001	-.080***	.019	.001
Strain	Family/Friend Suicide	-.918**	.319	.004	-16.098	724.651	.982
	Violent Victimization	.399***	.042	.001	-.389***	.082	.001
Social Learning / Differential Association	Peer Delinquency	.140***	.016	.001	-.172***	.017	.001
Self-Control	Self-Control	-.006	.005	.167	-.001	.003	.640
	Constant	-29.613***	7.925	.001	4.501	4.543	.322
N = 4,045		Model χ^2 = 2,806.54			Pseudo R^2 = 0.4281		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

While there are findings that mirror related, earlier binary logistic models (Models 1a and 2a), there are some variables that either became significant in Model 5a that were not significant in the earlier models or changed direction in Model 5a from the findings in the earlier models. All significant effects are presented on average while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. There were a number of significant findings with regard to the control variables in the model, many of which mirrored earlier significant effects in the binary logistic models, including the effects of age and age squared. A one year increase in age increases the log odds of being a high-rate offender by 3.510. Additionally, the age squared variable is significant and in the opposite direction for the high-rate offenders, which indicates that this effect of age decreases as people get older. Neither age, nor age squared, was significant for the pure conformists.

Still, there were many findings in multinomial logistic model presented here (Model 5a) that are absent or contrary to the findings presented previously in the binary logistic models (Models 1a and 2a). Living in a nuclear family increases both the log odds of being a high-rate offender by 1.228 and of being a pure conformist by .532. There was no relationship between nuclear family and high-rate offending found in Model 1a, and the relationship in Model 2a between nuclear family and pure conformity was in the opposite direction. Additionally, a one-year increase in grade level decreases both the log odds of being a high-rate offender by .086 and a pure conformist by .104 in Model 5a. While the finding regarding pure conformity is consistent with the earlier binary logistic model focusing on pure conformists compared to statistically normal juveniles (Model 2a), the findings concerning high-rate offending in Model 5a are in the

opposite direction the findings for the binary logistic model comparing high-rate offenders and statistically normal juveniles (Model 1a).

Further, the reception of public assistance decreases both the log odds of being a high-rate offender by .029 and of being a pure conformist by .031 in Model 5a; yet, neither Model 1a nor Model 2a reveals a relationship between public assistance reception and high-rate offending or pure conformity. A similar pattern emerges with regard to summer employment and the presence of friends. Summer employment decreases both the log odds of being a high-rate offender by .041 and a pure conformist by .024; however, no relationship was found between summer employment and either high-rate offending or pure conformity in the previous binary logistic models (Models 1a and 2a, respectively). Having friends decreases both the log odds of being a high-rate offender by .018 and a pure conformist by .028. It is possible then that both high-rate offenders and pure conformists may be loners.

Regarding the theoretically derived variables, there were numerous significant findings in Model 5a. As was the case with the control variables, some of the significant findings regarding the theoretical variables mirrored the significant effects in the previous binary logistic models (Models 1a and 2a); some became significant in Model 5a when no relationship was previously found in the earlier binary logistic models; and there were some changes in direction. The findings in Model 5a that mirror significant effects in the earlier binary logistic models (Models 1a and 2a) involve violent victimization and peer delinquency. A one unit increase in violent victimization increases the log odds of being a high-rate offender by .399, however, decreases the log odds of being a pure conformist by .389. Additionally, a one unit increase in peer delinquency increases the log odds of

being a high-rate offender by .140, but decreases the log odds of being a pure conformist by .172.

The theoretical variables found to have a significant effect in Model 5a that were not significant in the previous binary logistic models include parental attachment, GPA, school attachment, and religiosity. A one unit increase in parental attachment decreases both the log odds of being a high-rate offender by .476 and of being a pure conformist by .525, relationships that were absent from the previous binary logistic models (Models 1a and 2a). In the same manner, a one unit increase in attachment to school increases both the log odds of being a high-rate offender by .332 and the log odds of being a pure conformist by .044, which again, was not found in the earlier binary logistic models (Models 1a and 2a). Further, a one unit increase in religiosity decreases the log odds of being a high-rate offender by .110 and the log odds of being a pure conformist by .080 in Model 5a, but religiosity had no effect in the earlier binary logistic models (Models 1a and 2a). While not significant for the high-rate offenders, a one unit increase in GPA increases the log odds of being a pure conformist by .440. This finding is particularly interesting as GPA was found to be significant in the earlier binary logistic model comparing high-rate offenders to statistically normal juveniles (Model 1a), while no relationship was found in the earlier binary logistic model comparing pure conformity to statistically normal juveniles (Model 2a).

Finally, there were a few variables that, though significant in both the earlier binary logistic models and Model 5a, the effects' directions changed in the multinomial logistic model. These include parental supervision and family member or friend suicide. A one unit increase in parental supervision decreases both the log odds of being a high-

rate offender by .051 and the log odds of being a pure conformist by .037. Though parental supervision was not found to have an effect on high-rate offending in the earlier binary logistic model (Model 1a), a significant effect was previously found with regard to pure conformity; however, Model 2a shows the effect of parental supervision to be in the opposite direction. While not significant for pure conformists, a one unit increase in family member or friend suicide decreases the log odds of being a high-rate offender by .918 in Model 5a, though no effect of family member or friend suicide was previously uncovered in the earlier binary logistic models (Models 1a and 2a).

The findings from Model 5a (Table 26) may indicate that high-rate offenders and pure conformists may have more in common than one would assume at first glance. Generally, it is assumed that high-rate offending and pure conformity are opposite ends of a spectrum of juvenile delinquent behavior. The findings from the multinomial logistic regression model comparing both general types of outliers (high-rate offenders and pure conformists) to statistically normal juveniles (Model 5a), however, appear to indicate that these groups of outliers may be more similar to one another than they are to the majority (i.e., statistically normal juveniles).

Table 27 presents the multinomial logistic regression results comparing statistically normal juveniles, high-rate offenders, and pure conformists while incorporating the interactions of interest as suggested by the conjunctive analysis for case configurations (Model 4b); however, these terms fail to reach a level of statistical significance. All significant effects are presented on average and while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile.

Table 27. Model 5b: Multinomial Logistic Regression Comparing High-Rate Offenders (1) and Pure Conformists (2) to Statistically Normal Juveniles (0), with Interactions

		High-Rate Offenders (N = 346)			Pure Conformists (N = 598)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Interactions	Male x White	.145	.568	.799	-.928	.489	.058
	Male x Nuclear Family	-.126	.455	.767	-.365	.371	.326
	White x Nuclear Family	.360	.456	.430	-.582	.385	.131
	Male x White x Nuclear Family	-.138	.572	.810	.828	.523	.114
Control Variables	Male	.273	.388	.480	.364	.330	.294
	Age	3.505***	.992	.001	-.892	.575	.122
	Age^2	-.114***	.031	.001	.033	.018	.067
	White	-.353	.455	.437	.725*	.350	.038
	Nuclear Family	1.193**	.385	.002	.769*	.310	.013
	Public Assistance	-.030***	.003	.001	-.031***	.003	.001
	Grade Level	-.084***	.014	.001	-.101***	.014	.001
	School Year Employment	.019	.014	.159	-.006	.014	.659
	Summer Employment	-.041***	.010	.001	-.024*	.010	.017
	Friends	-.018***	.002	.001	-.028***	.002	.001
Social Control	Peer Attachment	.048	.052	.364	.038	.042	.367
	Parental Attachment	-.465***	.055	.001	-.531***	.048	.001
	Parental Supervision	-.051***	.007	.001	-.036***	.005	.001
	GPA	.339***	.090	.001	.427***	.070	.001
	Attachment to School	-.001	.015	.959	.044***	.012	.001
	Importance of Religion	-.109***	.023	.001	-.080***	.019	.001
Strain	Family/Friend Suicide	-.926**	.321	.004	-16.350	819.242	.984
	Violent Victimization	.396***	.042	.001	-.379***	.012	.001
Social Learning / Differential Association	Peer Delinquency	.144***	.016	.001	-.177***	.017	.001
Self-Control	Self-Control	-.006	.005	.176	-.001	.003	.652
	Constant	-29.563***	7.950	.001	3.888	4.570	.395
N = 4,045		Model χ^2 = 2,815.34			Pseudo R^2 = 0.4294		

*p < 0.05 **p < 0.01 ***p < 0.001

While the majority of the independent variables found to be significant in Model 5a remained significant in Model 5b, there were a few differences between the models. Regarding high-rate offenders, in Model 5b, a one unit increase in GPA increases the log odds of being a high-rate offender by .339, which is in the opposite direction of the effect found in Model 5a. Furthermore, attachment to school is no longer significant for high-rate offenders in Model 5b. For pure conformists, the only change between Models 5a and 5b concerns race/ethnicity. In the multinomial model that incorporates the interaction terms (Model 5b), being white increases the log odds of being a pure conformist by .725.

One potential explanation for the differences seen between the earlier, binary logistic models comparing high-rate offenders and pure conformists to statistically normal juveniles individually (Models 1a and 2a respectively), and the related multinomial logistic models (Models 5a and 5b) is related to the differences between the distinct types of pure conformists. Models 5a and 5b fail to recognize the existence of active and passive pure conformists, thereby ignoring their distinctions which were outlined in Analysis 4. Treating pure conformists as if they are a single homogeneous group when they have been shown to be heterogeneous is likely to impact Models 5a and 5b. Therefore, due to the evidence that there exist at least two distinct types of pure conformity, it is necessary to compare these groups to statistically normal juveniles.

Table 28 presents the multinomial logistic regression results comparing active pure conformists, passive pure conformists, and statistically normal juveniles. The model chi-square is 877.29, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero

in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring examination and interpretation.

Table 28. Model 5c: Multinomial Logistic Regression Comparing Active Pure Conformists (1) and Passive Pure Conformists (2) to Statistically Normal Juveniles (0)

		Active Pure Conformists (N = 394)			Passive Pure Conformists (N = 204)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Control Variables	Male	-.169	.126	.180	.118	.156	.448
	Age	-1.601*	.657	.013	-.989	.801	.217
	Age^2	.055**	.021	.008	.027	.025	.273
	White	.072	.128	.575	.030	.071	.673
	Nuclear Family	-.531*	.216	.014	-.971***	.251	.001
	Public Assistance	.011	.011	.294	.008	.008	.287
	Grade Level	-.021	.095	.829	.341***	.072	.001
	School Year Employment	.003	.032	.937	-.058	.045	.193
	Summer Employment	-.023	.015	.137	.055	.058	.341
	Friends	.001	.004	.938	-.004	.003	.242
Social Control	Peer Attachment	.007	.049	.880	-051	.053	.338
	Parental Attachment	.006	.021	.779	-.027	.025	.278
	Parental Supervision	.020**	.008	.008	.039***	.009	.001
	Attachment to School	.028	.015	.053	.055**	.018	.003
	Importance of Religion	.017	.027	.537	-.011	.033	.746
Strain	Family/Friend Suicide	-.022	.252	.931	-.280	..344	.416
	Violent Victimization	-.634***	.164	.001	-.531***	.134	.001
Social Learning / Differential Association	Peer Delinquency	-.216***	.024	.001	-.162***	.023	.001
Self-Control	Self-Control	.001	.003	.986	-.006	.004	.195
	Constant	4.139	5.208	.427	5.924	6.443	.358
N = 3,699		Model χ^2 = 877.29			Pseudo $5R^2$ = 0.2071		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

All significant effects for Model 5c are presented on average while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. There were three significant findings for the active pure conformists with regard to the control variables in the model. A one year increase in age decreases the log odds of being an active pure conformist by 1.601. Additionally, the age squared variable is significant and in the opposite direction for active pure conformists. In other words, with increasing age, active pure conformity becomes less common; however, the positive effect for age squared indicates that beyond some age threshold active pure conformity begins to increase again. So, younger juveniles are more often active pure conformists, but it seems that if people make it past the crime-prone adolescent years without breaking the law, the likelihood that they remain active pure conformists, thereby consciously choosing not to engage in law-violating behavior, increases as they age. This fits very well with what is known about adolescent law breaking which peaks in middle- to late-adolescence before dropping sharply and remaining low throughout adulthood (see for example, Dean et al., 1996; Farrington, 1986; Stolzenberg & D'Alessio, 2008; Sweeten et. al, 2013). Neither age nor age squared was significant for the passive pure conformists. Additionally, being in a nuclear family decreases the log odds of active pure conformity by .531.

Being in a nuclear family was also found to have a significant effect on passive pure conformity. Being in a nuclear family decreases the log odds of passive pure conformity by .971. One other control variable was found to have a significant effect on passive pure conformity. A one year increase in grade level increased the log odds of

being a passive pure conformist by .341; however, grade level was not found to have a significant effect on active pure conformity.

For the theoretically derived variables, there were three significant findings in Model 5c with regard to active pure conformity. A one unit increase in parental supervision increases the log odds of active pure conformity by .020, which is consistent with the caricature presented earlier of an active pure conformist as an adolescent purposefully avoiding law-violating behavior, as individuals who are more closely supervised by their parents should have fewer opportunities to engage in delinquency. Every one unit increase in violent victimization decreases the log odds of active pure conformity by .634, which again, is in line with the caricature of an active pure conformist outlined previously as well as previous research (see for example, Agnew, 1992; Hay & Evans, 2006). These findings regarding active pure conformity are consistent with their accompanying predictions made in Table 7.

Finally, every one unit increase in peer delinquency decreases the likelihood of active pure conformity by .216. Not only is this in line with the previously presented caricature of active pure conformists, but this is also consistent with research clearly highlighting a relationship between peer delinquency and delinquency (see for example, Fergusson et al., 2002; Kramer & Vaquera, 2011). If there is a positive correlation between peer delinquency and delinquency such that as peer delinquency increases, so does delinquency, then it follows that an increase in peer delinquency would decrease the likelihood of active pure conformity. Therefore, individuals who associate with delinquent peers should less often be active pure conformists.

For the theoretically derived variables, there were four significant findings in Model 5c with regard to passive pure conformity, three of which are in common with findings for active pure conformists. Every one unit increase in parental supervision increases the log odds of passive pure conformity by .039. This is consistent with the prediction made in Table 7 with regard to parental supervision and makes intuitive sense as individuals who are more closely supervised by their parents should have fewer opportunities to engage in delinquency. Every one unit increase in violent victimization decreases the log odds of passive pure conformity by .531. This finding is in line with previous research indicating a positive relationship between violent victimization and delinquency (Agnew, 1992; Hay & Evans, 2006). Every one unit increase in peer delinquency decreases the log odds of passive pure conformity by .162. As pointed out with regard to active pure conformists, this finding is in line with previous studies indicating a positive relationship between peer delinquency and delinquency (see generally, Fergusson et al., 2002; Kramer & Vaquera, 2011). One additional variable was significant for passive pure conformists, which did not have an effect for active pure conformity. Every one unit increase in attachment to school increases the log odds of passive pure conformity by .055. The findings from Model 5c (Table 28) seem to add weight to the argument that there are at least two distinct types of pure conformists—active and passive pure conformists.

Table 29 presents the multinomial logistic regression results comparing statistically active and passive pure conformists to statistically normal juveniles while incorporating the interactions of interest as suggested by the conjunctive analysis for case configurations; however, these terms fail to reach a level of statistical significance. All

significant effects are presented on average and while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. While the majority of the independent variables found to be significant in Model 5c remained significant in Model 5d, there was one difference between the models. While nuclear family was significant for both active and passive pure conformists in Model 5c, this variable failed to reach statistical significance for either group in Model 5d.

Table 29. Model 5d: Multinomial Logistic Regression Comparing Active Pure Conformists (1) and Passive Pure Conformists (2) to Statistically Normal Juveniles (0), with Interactions

		Active Pure Conformists (N = 394)			Passive Pure Conformists (N = 204)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Interactions	Male x White	-.824	.500	.099	-.787	.513	.125
	Male x Nuclear Family	-.117	.399	.770	-.642	.408	.116
	White x Nuclear Family	-.402	.337	.233	-.620	.374	.097
	Male x White x Nuclear Family	.757	.540	.161	.817	.553	.140
Control Variables	Male	.051	.344	.882	.638	.342	.062
	Age	-1.613*	.657	.014	-.958	.803	.233
	Age^2	.054**	.021	.008	.026	.025	.292
	White	.483	.281	.086	.636	.371	.086
	Nuclear Family	-.390	.306	.203	-.560	.346	.106
	Public Assistance	.011	.011	.286	.008	.008	.296
	Grade Level	-.019	.095	.841	.343***	.072	.001
	School Year Employment	-.001	.032	.985	-.058	.044	.184
	Summer Employment	-.022	.015	.138	.054	.057	.344
	Friends	.001	.004	.911	-.004	.003	.256
Social Control	Peer Attachment	.005	.049	.915	-.059	.053	.269
	Parental Attachment	.008	.021	.707	-.031	.025	.219
	Parental Supervision	.021**	.008	.009	.039***	.009	.001
	Attachment to School	.028	.015	.060	.054**	.018	.003
	Importance of Religion	.018	.027	.496	-.008	.033	.819
Strain	Family/Friend Suicide	-.028	.252	.912	-.298	..344	.386
	Violent Victimization	-.633***	.164	.001	-.538***	.135	.001
Social Learning / Differential Association	Peer Delinquency	-.219***	.024	.001	-.165***	.024	.001
Self-Control	Self-Control	.001	.003	.983	-.005	.004	.219
	Constant	3.875	5.215	.457	5.415	6.455	.402
N = 3,699	Model χ^2 = 884.99				Pseudo R^2 = .2089		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

Table 30 (Model 5e) presents the multinomial logistic regression results active (1) and passive (2) pure conformists to high-rate offenders (0). The model chi-square is 1,476.26, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring examination and interpretation.

Table 30. Model 5e: Multinomial Logistic Regression Comparing Active Pure Conformists (1) and Passive Pure Conformists (2) to High-Rate Offenders (0)

		Active Pure Conformists (N = 394)			Passive Pure Conformists (N = 204)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Control Variables	Male	.567	.354	.109	-.206	.357	.563
	Age	9.413***	2.636	.001	-7.418**	2.667	.005
	Age^2	-.296***	.083	.001	.240**	.083	.004
	White	-.505	.378	.181	.572	.378	.131
	Nuclear Family	1.847**	.705	.009	-2.164**	.702	.002
	Public Assistance	-.037*	.015	.015	.040***	.011	.001
	Grade Level	-.353	.244	.149	.133**	.060	.008
	School Year Employment	.094	.061	.124	-.059	.047	.207
	Summer Employment	.001	.064	.996	.095	.064	.139
	Friends	-.015*	.007	.034	.016*	.007	.029
Social Control	Peer Attachment	.093	.129	.473	-.143	.122	.240
	Parental Attachment	-.467***	.106	.001	.496***	.102	.001
	Parental Supervision	-.033	.018	.068	.078***	.019	.001
	Attachment to School	-.085	..044	.056	.070	.041	.088
	Importance of Religion	-.218***	.063	.001	.127*	.060	.036
Strain	Family/Friend Suicide	-1.593	1.082	.148	2.326**	.842	.006
	Violent Victimization	1.301***	.282	.001	-1.304***	.226	.001
Social Learning / Differential Association	Peer Delinquency	.975***	.049	.001	-.399***	.050	.001
Self-Control	Self-Control	-.014	.010	.164	.011	.010	.258
	Constant	-61.331**	20.903	.003	62.725**	21.299	.003
N = 944		Model χ^2 = 1,476.26			Pseudo R^2 = 0.7351		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

All significant effects for Model 5e are presented on average while controlling for the other independent variables in the model and are compared to being high-rate offender. There were numerous significant findings with regard to the control variables in the model. A one year increase in age increases the log odds of being an active pure conformist by 9.413. The finding that the age squared variable is negative and significant indicates that the effect of age decreases as people get older. An opposite pattern was found with regard to passive pure conformity. A one year increase in age decreases the log odds of being a passive pure conformist by 7.418. Additionally, the age squared variable is significant and in the opposite direction for active pure conformists. In other words, with increasing age, passive pure conformity becomes less common; however, the positive effect for age squared indicates that beyond some age threshold passive pure conformity begins to increase again.

Being in a nuclear family was also found to have a significant effect on both active and passive pure conformity, though in opposite directions. Being in a nuclear family increases the log odds of active pure conformity by 1.847, but decreases the log odds of passive pure conformity by 2.164. The reception of public assistance decreases the log odds of active pure conformity by .037, but increases the log odds of passive pure conformity by .040. The presence of friends decreases the log odds of active pure conformity by .015, but increases the log odds of passive pure conformity by .016. Finally, a one year increase in grade level increases the log odds of passive pure conformity by .133.

For the theoretically derived variables, there were many significant findings in Model 5e, many of which were in opposite directions for active and pure conformists (as

compared to high-rate offenders). A one unit increase in parental attachment decreases the log odds of active pure conformity by .467, but increases the log odds of passive pure conformity by .496. A one unit increase in religiosity decreases the log odds of active pure conformity by .218, but increases the log odds of passive pure conformity by .127. A one unit increase in violent victimization increases the log odds of active pure conformity by 1.301, but decreases the log odds of passive pure conformity by 1.304. Finally, a one unit increase in peer delinquency increases the log odds of active pure conformity by .975, but decreases the log odds of passive pure conformity by .399. Still, there were two additionally significant findings related solely to passive pure conformity. A one unit increase in parental supervision increases the log odds of passive pure conformity by .078. Last, a one unit increase in family member or friend suicide increases the log odds of passive pure conformity by 1.304. The numerous findings in Model 5e (Table 30) portraying significant effects in opposite directions for active and passive pure conformity clearly bolster the argument that pure conformists are not a homogeneous group. Rather, Model 5e indicates that there are (at least) two distinct types of pure conformists—active and passive pure conformists.

Table 31 presents the multinomial logistic regression results comparing active and passive pure conformists to high-rate offenders while incorporating the interactions of interest as suggested by the conjunctive analysis for case configurations. Yet, as was the case in previous models, these terms fail to reach a level of statistical significance. All significant effects are presented on average and while controlling for the other independent variables in the model and are compared to being a high-rate offender. While the majority of the independent variables found to be significant in Model 5e

remained significant in Model 5f, there were a few differences between the models. While nuclear family was significant for both active and passive pure conformists in Model 5e, this variable failed to reach statistical significance for either group in Model 5f. Moreover, race/ethnicity was found to have a significant effect in Model 5f. Being white increases the log odds of active pure conformity by 3.109. Again, the findings in Model 5f further strengthen the argument that rather than being a homogeneous group, pure conformists include (at least) two distinct types.

Table 31. Model 5f: Multinomial Logistic Regression Comparing Active Pure Conformists (1) and Passive Pure Conformists (2) to High Rate Offenders (0), with Interactions

		Active Pure Conformists (N = 394)			Passive Pure Conformists (N = 204)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Interactions	Male x White	-1.280	1.846	.488	-.624	1.733	.719
	Male x Nuclear Family	.827	1.339	.537	-.012	1.243	.992
	White x Nuclear Family	-2.616	1.436	.068	-2.064	1.415	.145
	Male x White x Nuclear Family	.547	2.002	.777	.448	1.890	.813
Control Variables	Male	-.792	1.175	.500	-.127	1.086	.97
	Age	-9.829***	2.648	.001	-7.739**	2.697	.004
	Age^2	.311***	.083	.001	.251**	.084	.003
	White	3.109*	1.346	.021	2.525	1.323	.056
	Nuclear Family	-1.061	1.076	.324	-1.347	1.104	.223
	Public Assistance	.043**	.016	.008	.039***	.011	.001
	Grade Level	.284	.247	.249	.129**	.048	.008
	School Year Employment	-.095	.067	.154	-.062	.047	.186
	Summer Employment	.009	.063	.889	.090	.066	.169
	Friends	.016*	.007	.029	.016*	.007	.023
Social Control	Peer Attachment	-.112	.133	.400	-.165	.127	.196
	Parental Attachment	.475***	.108	.001	.500***	.103	.001
	Parental Supervision	.030	.018	.099	.078***	.019	.001
	GPA	.088	.045	.052	.072	.041	.081
	Attachment to School	.221***	.065	.001	.137*	.061	.024
	Importance of Religion	1.560	1.088	.152	2.307**	.846	.006
Strain	Family/Friend Suicide	-1.286***	.279	.001	-1.312***	.225	.001
	Violent Victimization	-.415***	.052	.001	-.409***	.052	.001
Social Learning / Differential Association	Peer Delinquency	.016	.010	.109	.013	.010	.209
Self-Control	Self-Control	63.620**	20.948	.002	64.641**	21.509	.003
	Constant	-1.280	1.846	.488	-.624	1.733	.719
N = 944		Model χ^2 = 1,484.84			Pseudo R^2 = 0.7394		

*p < 0.05 **p < 0.01 ***p < 0.001

Table 32 presents the multinomial logistic regression results comparing high-rate offenders and active pure conformists to statistically normal juveniles (Model 5g). The model chi-square is 1,863.84, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring examination and interpretation.

Table 32. Model 5g: Multinomial Logistic Regression Comparing High-Rate Offenders (1) and Active Pure Conformists (2) to Statistically Normal Juveniles (0)

		High-Rate Offenders (N = 346)			Active Pure Conformists (N = 394)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Control Variables	Male	.199	.171	.245	-.173	.126	.169
	Age	3.809***	1.081	.001	-1.684*	.658	.010
	Age^2	-.125***	.034	.001	.057*	.021	.006
	White	.006	.028	.833	.088	.131	.503
	Nuclear Family	1.283***	.282	.001	-.483*	.215	.025
	Public Assistance	-.031***	.003	.001	.010	.011	.368
	Grade Level	-.069***	.016	.001	-.032	.063	.615
	School Year Employment	.026	.017	.134	.003	.033	.934
	Summer Employment	-.034**	.013	.009	-.025	.016	.119
	Friends	-.016***	.003	.001	-.001	.004	.976
Social Control	Peer Attachment	.023	.056	.679	.001	.049	.982
	Parental Attachment	-.460***	.062	.001	.001	.021	.946
	Parental Supervision	-.059***	.008	.001	.018*	.008	.021
	GPA	.333***	.096	.001	1.558***	.118	.001
	Attachment to School	.004	.016	.787	.028	.015	.057
	Importance of Religion	-.148***	.026	.001	.018	.017	.488
Strain	Family/Friend Suicide	-.993**	.336	.003	-.014	.253	.955
	Violent Victimization	.415***	.044	.001	-.636***	.164	.001
Social Learning / Differential Association	Peer Delinquency	.144***	.017	.001	-.216***	.024	.001
Self-Control	Self-Control	-.003	.005	.582	.001	.003	.941
	Constant	-31.298***	8.652	.001	4.870	5.188	.348
N = 3,841		Model χ^2 =1,863.84			Pseudo R^2 = 0.3710		

*p ≤0.05**p ≤ 0.01 ***p ≤ 0.001

All significant effects for Model 5g are presented on average while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. There were numerous significant findings with regard to the control variables in the model, though only three were statistically significant for both high-rate offenders and active pure conformists. Age and age squared were significant for both high-rate offenders and active pure conformists. A one year increase in age increases the log odds of being a high-rate offender by 3.809, a finding which is consistent with the prediction made in Table 7. The finding that the age squared variable is negative and significant indicates that the effect of age decreases as people get older. However, an opposite pattern was found with regard to active pure conformity. A one year increase in age decreases the log odds of being an active pure conformist by 1.684. Additionally, the age squared variable is significant and in the opposite direction for active pure conformists. In other words, with increasing age, active pure conformity becomes less common; however, the positive effect for age squared indicates that beyond some age threshold active pure conformity begins to increase again. Additionally, being in a nuclear family increases the log odds of high-rate offending by 1.283, but decreases the log odds of active pure conformity by .483.

There were four control variables that were significant only for high-rate offending—public assistance reception, grade level, summer employment, and the presence of friends. Receiving public assistance decreases the log odds of high-rate offending by .031. A one year increase in grade level decreases the log odds of high-rate offending by .069. Summer employment decreases the log odds of high-rate offending

by .034. Last, a one unit increase in the presence of friends decreases the log odds of high-rate offending by .016.

Four of the theoretically derived variables were significant for both high-rate offending and active pure conformity. With regard to one of the variables (GPA), the significant effects were in the same direction for both high-rate offenders and pure conformists. A one unit increase in GPA increases the log odds of both high-rate offending by .333 and active pure conformity by 1.558, the latter being consistent with the prediction made in Table 7. The other three theoretical variables that had an effect on both high-rate offending and active pure conformity (parental supervision, violent victimization, and peer delinquency) were significant in opposite directions. A one unit increase in parental supervision decreases the log odds of high-rate offending by .059, but increases the log odds of active pure conformity by .018. A one unit increase in violent victimization increases the log odds of high-rate offending by .144, but decreases the log odds of active pure conformity by .636. Both of these findings are in line with the predictions made in Table 7. Finally, a one unit increase in peer delinquency increases the log odds of high-rate offending by .144, but decreases the log odds of active pure conformity by .216.

Moreover, there were three theoretically derived variables that were significant only for high-rate offending—parental attachment, religiosity, and family member or friend suicide. A one unit increase in parental attachment decreases the log odds of high-rate offending by .460. A one unit increase in religiosity decreases the log odds of high-rate offending by .148. Each of these significant findings are consistent with the predictions made in Table 7. Finally, a one unit increase in family member or friend

suicide decreases the log odds of high-rate offending by .993. The findings in Model 5g indicate that high-rate offenders and active pure conformists, though both statistical outliers of delinquent behavior, may be opposite ends of the same spectrum.

Table 33 presents the multinomial logistic regression results comparing high-rate offenders and active pure conformists to statistically normal juveniles while incorporating the interactions of interest as suggested by the conjunctive analysis for case configurations. Yet, these terms fail to reach a level of statistical significance. All significant effects are presented on average and while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. While the majority of the independent variables found to be significant in Model 5g remained significant in Model 5h, there was one difference between the models. While nuclear family was significant for active pure conformists in Model 5g, this variable did not have an effect in Model 5h. Again, the findings in Model 5g strengthen the idea that high-rate offenders and active pure conformists may be opposite ends of the same spectrum of delinquent behavior.

Table 33. Model 5h: Multinomial Logistic Regression Comparing High-Rate Offenders (1) and Active Pure Conformists (2) to Statistically Normal Juveniles (0), with Interactions

		High-Rate Offenders (N = 346)			Active Pure Conformists (N = 394)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Interactions	Male x White	.337	.728	.644	-.862	.500	.085
	Male x Nuclear Family	-.040	.503	.937	-.148	.400	.712
	White x Nuclear Family	.718	.563	.202	-.423	.337	.210
	Male x White x Nuclear Family	-.331	.731	.651	.793	.542	.143
Control Variables	Male	.207	.473	.662	.077	.344	.823
	Age	3.868***	1.081	.001	-1.667*	.659	.011
	Age^2	-.127***	.034	.001	.056**	.021	.007
	White	-.711	.561	.205	.509	.281	.070
	Nuclear Family	1.091**	423	.010	-.324	.305	.288
	Public Assistance	-.031***	.003	.001	.010	.011	.359
	Grade Level	-.068***	.016	.001	-.031	.063	.617
	School Year Employment	.028	.018	.121	-.001	.033	.975
	Summer Employment	-.033**	.013	.009	-.025	.016	.120
	Friends	-.016***	.003	.001	.001	.004	.989
Social Control	Peer Attachment	.020	.056	.718	-.001	.049	.994
	Parental Attachment	-.457***	.061	.001	.003	.021	.861
	Parental Supervision	-.060***	.008	.001	.017*	.008	.024
	GPA	.343***	.097	.001	1.551***	.118	.001
	Attachment to School	.004	.016	.811	.027	.015	.065
	Importance of Religion	-.150***	.026	.001	.020	.027	.453
Strain	Family/Friend Suicide	-.996**	.339	.003	-.019	.253	.939
	Violent Victimization	.412***	.044	.001	-.637***	.164	.001
Social Learning / Differential Association	Peer Delinquency	.146***	.017	.001	-.219***	.024	.001
Self-Control	Self-Control	-.003	.004	.606	.001	.003	.946
	Constant	-31.501***	8.642	.001	4.594	5.197	.377
N = 3,841		Model χ^2 = 1870.77			Pseudo R^2 = 0.3724		

*p < 0.05 **p < 0.01 ***p < 0.001

Table 34 presents the multinomial logistic regression results comparing high-rate offenders and passive pure conformists to statistically normal juveniles (Model 5i). The model chi-square is 1,397.00, which lies in the critical region, suggesting that one reject the null hypothesis and conclude that at least one independent variable's slope is not equal to zero in the population. Therefore, the full model provides a better fit to the data than the empty, intercept-only model, requiring examination and interpretation.

Table 34. Model 5i: Multinomial Logistic Regression Comparing High-Rate Offenders (1) and Passive Pure Conformists (2) to Statistically Normal Juveniles (0)

		High-Rate Offenders (N = 346)			Passive Pure Conformists (N = 204)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Control Variables	Male	.203	.171	.235	.118	.155	.447
	Age	3.867***	1.087	.001	-.980	.796	.218
	Age^2	-.127***	.034	.001	.027	.025	.270
	White	.006	.028	.838	.031	.075	.678
	Nuclear Family	1.272***	.283	.001	-.979***	.253	.001
	Public Assistance	-.031***	.003	.001	.007	.008	.365
	Grade Level	-.068***	.016	.001	.331***	.072	.001
	School Year Employment	.025	.017	.153	-.041	.025	.100
	Summer Employment	-.032*	.013	.012	.038	.045	.404
	Friends	-.016***	.003	.001	-.004	.003	.252
Social Control	Peer Attachment	.025	.056	.649	-.049	.053	.359
	Parental Attachment	-.463***	.062	.001	-.030	.025	.234
	Parental Supervision	-.059***	.008	.001	.038***	.009	.001
	GPA	.343***	.097	.001	-.818***	.091	.001
	Attachment to School	.002	.016	.891	.056**	.018	.002
	Importance of Religion	-.147***	.026	.001	-.005	.032	.867
Strain	Family/Friend Suicide	-.956**	.339	.004	-.281	.344	.414
	Violent Victimization	.414***	.044	.001	-.538***	.134	.001
Social Learning / Differential Association	Peer Delinquency	.143***	.017	.001	-.164***	.024	.001
Self-Control	Self-Control	-.003	.005	.607	-.006	.004	.163
	Constant	-31.744***	8.692	.001	5.765	6.405	.368
N = 3,651		Model χ^2 = 1,397.00			Pseudo R^2 = 0.3492		

*p ≤0.05 **p ≤ 0.01 ***p ≤ 0.001

All significant effects for Model 5i are presented on average while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. There were numerous significant findings with regard to the control variables in the model, though only two—nuclear family and grade level—were statistically significant for both high-rate offenders and passive pure conformists. Being from a nuclear family increases the log odds of high-rate offending by 1.272, but decreases the log odds of passive pure conformity by .979. Also, a one unit increase in grade level decreases the log odds of high-rate offending by .068, which is consistent with the prediction made in Table 7, but increases the log odds of passive pure conformity by .331.

Additionally, there were five control variables that were significant only for high-rate offending—age, age squared, public assistance reception, summer employment, and the presence of friends. A one year increase in age increases the log odds of being a high-rate offender by 3.867, a finding which is consistent with the prediction made in Table 7. The finding that the age squared variable is negative and significant indicates that the effect of age decreases as people get older. Receiving public assistance decreases the log odds of high-rate offending by .031. Summer employment decreases the log odds of high-rate offending by .032. Finally, a one unit increase in the presence of friends decreases the log odds of high-rate offending by .016.

Four of the theoretically derived variables—parental supervision, GPA, violent victimization, and peer delinquency—were significant with regard to both high-rate offending and passive pure conformity. A one unit increase in parental supervision decreases the log odds of high-rate offending by .059, but increases the log odds of

passive pure conformity by .038, each of which is consistent with the predictions made in Table 7. A one unit increase in GPA increases the log odds of high-rate offending by .343, but decreases the log odds of passive pure conformity by .818, the latter being consistent with the prediction made in Table 7. A one unit increase in violent victimization increases the log odds of high-rate offending by .414, but decreases the log odds of passive pure conformity by .164. Both of these findings are in line with the predictions made in Table 7. Finally, a one unit increase in peer delinquency increases the log odds of high-rate offending by .143, but decreases the log odds of passive pure conformity by .164.

Moreover, there were numerous theoretically driven variables that were significant only for high-rate offending (parental attachment, religiosity, and family member or friend suicide) or passive pure conformity (school attachment). A one unit increase in parental attachment decreases the log odds of high-rate offending by .463. A one unit increase in religiosity decreases the log odds of high-rate offending by .147. Each of these significant findings is consistent with the predictions made in Table 7. Finally, with regard to high-rate offending, a one unit increase in family member or friend suicide decreases the log odds of high-rate offending by .956. Additionally, a one unit increase in attachment to school increases the log odds of passive pure conformity by .056. While it was speculated that high-rate offenders and passive pure conformists may be more alike than they are different, Model 5i does not support this idea.

Table 35 presents the multinomial logistic regression results comparing high-rate offenders and passive pure conformists to statistically normal juveniles while incorporating the interactions of interest as suggested by the conjunctive analysis for case

configurations (Model 5j). However, these terms fail to reach a level of statistical significance. All significant effects are presented on average and while controlling for the other independent variables in the model and are compared to being a statistically normal juvenile. While the majority of the independent variables found to be significant in Model 5i remained significant in Model 5j, there was one difference between the models. While nuclear family was significant for passive pure conformists in Model 5i, this variable did not have an effect in Model 5j. Again, the findings in Model 5j fail to support the idea that high-rate offenders and passive pure conformists may be more similar to one another than they are to statistically normal juveniles.

Table 35. Model 5j: Multinomial Logistic Regression Comparing High-Rate Offenders (1) and Passive Pure Conformists (2) to Statistically Normal Juveniles (0), with Interactions

		High-Rate Offenders (N = 346)			Passive Pure Conformists (N = 204)		
Theory	Variable	Coefficient	Standard Error	Probability	Coefficient	Standard Error	Probability
Interactions	Male x White	.326	.730	.655	-.800	.513	.119
	Male x Nuclear Family	-.051	.503	.919	-.650	.406	.109
	White x Nuclear Family	.720	.564	.202	-.640	.375	.088
	Male x White x Nuclear Family	-.320	.733	.661	.827	.550	.132
Control Variables	Male	.219	.474	.644	.647	.342	.059
	Age	3.925***	1.086	.001	-.950	.797	.234
	Age^2	-.129***	.034	.001	.026	.025	.289
	White	-.714	.563	.205	.656	.371	.078
	Nuclear Family	1.081*	.425	.011	-.563	.347	.105
	Public Assistance	-.032***	.003	.001	.007	.008	.375
	Grade Level	-.069***	.016	.001	.334***	.072	.001
	School Year Employment	.026	.018	.137	-.042	.025	.094
	Summer Employment	-.032*	.013	.012	.037	.044	.401
	Friends	-.016***	.003	.001	-.004	.003	.269
Social Control	Peer Attachment	.023	.056	.0684	-.057	.053	.289
	Parental Attachment	-.460***	.061	.001	-.034	.025	.179
	Parental Supervision	-.059***	.008	.001	.038***	.009	.001
	GPA	.353***	.097	.001	-.822***	.031	.001
	Attachment to School	.002	.016	.914	.055**	.018	.003
	Importance of Religion	-.149***	.026	.001	-.002	.033	.943
Strain	Family/Friend Suicide	-.989**	.341	.004	-.304	.344	.377
	Violent Victimization	.412***	.044	.001	-.545***	.135	.001
Social Learning / Differential Association	Peer Delinquency	.146***	.017	.001	-.167***	.024	.001
Self-Control	Self-Control	-.002	.005	.634	-.006	.004	.192
	Constant	-31.943***	8.680	.001	5.250	6.415	.413
N = 3,651		Model χ^2 = 1,403.64			Pseudo R^2 = 0.3509		

*p < 0.05 **p < 0.01 ***p < 0.001

V. CONCLUSIONS

Delinquency has long been the subject of research in a number of disciplines, including criminology; yet, most of this research has focused on the normalcy of law-violating behavior—adolescent-limited, relatively minor, group-oriented delinquency. The purpose of the current work is to investigate high-rate offenders and pure conformists, which are deviations or outliers from statistically normal behavior. Traditionally, these two groups have been excluded from delinquency studies as noise or error (Cernkovich et. al, 1985; Cullen, 2011; Nye, 1956; Nye & Short, 1957; Short & Nye, 1957, 1959). Yet, there is a growing consensus that extreme circumstances, including statistical outliers of juvenile delinquency, may have much to teach us (Gladwell, 2008; see also Cullen, 2011; Sullivan, 2011). In light of this consensus, attention has been paid to the utility of the deviant case, which has facilitated theoretical development in other social sciences as well as shown great value in some areas of criminological inquiry (Sullivan, 2011, p. 905). This undeniably applies to the study of criminal and delinquent offending as the inspection of the deviant case, or outliers of statistically normal juvenile behavior, offers a potential avenue for enhancing criminological theory.

Recognizing the need for investigation of deviant cases, the present study sought to examine the statistical outliers of juvenile delinquency in order to identify correlates of membership in the extreme groups. To achieve this end, numerous statistical models were investigated using three techniques, employing both qualitative and quantitative methods. In the case of the quantitative analysis, a number of general research questions

were presented. Because the findings of each statistical model were discussed in-depth in the previous chapter, only the most interesting findings will be focused upon here.

Analysis 1 centered on high-rate offenders and sought to answer the question:

(1) What are the distinguishing characteristics of high-rate offenders, as compared to statistically normal juveniles, that may influence their choice to commit delinquency at a greater frequency?

The results of Analysis 1 (Models 1a and 1b) indicate that there are a number of characteristics that distinguish high-rate offenders from statistically normal juveniles. High-rate offenders are more often older, male, have experience with violent victimization, associate with delinquent peers more often, and have lower levels of self-control than statistically normal juveniles. Each of these characteristics is in line with previous research findings with regard to more serious juvenile delinquents. However, two surprising results were found in Analysis 1, indicating that there is a positive relationship between both grade level and grade point average and high-rate offending.

Analysis 2 focused on pure conformists and sought to answer the question:

(1) What are the distinguishing characteristics of pure conformists, as compared to statistically normal juveniles, that may influence their choice to abstain from offending?

As was the case with high-rate offenders, the results of Analysis 2 (Model 2) show that there are numerous characteristics that distinguish pure conformists from statistically normal juveniles. Most of the findings from this analysis fit with earlier research and preconceived notions of pure conformity. Pure conformists have higher levels of parental supervision, less experience with violent victimization, associate with delinquent peers

less often, and have higher levels of self-control than statistically normal juveniles. While most of the findings seem to be consistent with what little literature is available on pure conformity, two are counterintuitive. The findings that pure conformists are less often from nuclear families and are from lower grade levels (even when controlling for age and grade point average) than statistically normal juveniles are somewhat surprising. These unexpected results bolster the idea that there may be two distinct types of pure conformists that are different with respect to the independent variables being investigated here. This distinction was investigated in Analysis 4.

Analysis 3 (Model 3) centered on the comparison of pure conformists to high-rate offenders. In doing so, it sought to answer the question:

(1) How do pure conformists compare to high-rate offenders with regard to attributes such as self-control, peer delinquency, etc.?

There are a number of characteristics that distinguish pure conformists from high-rate offenders. Nearly all of the findings from this analysis fit with well with the results of the previous two analyses. Pure conformists are younger, more attached to school, have less experience with violent victimization, and associate with delinquent peers less often than high-rate offenders. Yet, two unexpected results were found. First, pure conformists are from lower grade levels than high-rate offenders, even when controlling for age and grade point average. Also, while one would expect pure conformists to have higher levels of self-control than high-rate offenders, the self-control variable was not found to be statistically significant. These unanticipated results, especially with respect to self-control, further support the need highlighted in the results of Analysis 2 to investigate the

possibility that there are two distinct types of pure conformity—active and passive pure conformists. Therefore, Analysis 4 examined this possibility.

Analysis 4 (Models 4a and 4b) sought to answer the following question:

(1) How do active and passive pure conformists differ with regard to attributes such as self-control, peer delinquency, etc.?

There are four characteristics that distinguish active from passive pure conformists. All of the findings from this analysis fit with well with the caricatures of active and passive pure conformists presented. Active pure conformists are more often female, more often white, associate with delinquent peers less often, and have higher levels of self-control than passive pure conformists. These findings indicate, as was suspected, that there indeed are at least two distinct types of pure conformity.

Analysis 5 (Models 5a through 5j) sought to answer the following question:

(1) How do the distinguishing factors of high-rate offenders, statistically normal youths, and pure conformists compare with each another?

This final set of models uncovered a number of distinguishing differences between the groups of juveniles. The most noteworthy contributions of Analysis 5 however, are that it clearly supports the idea that pure conformity is heterogeneous (see Models 5c through 5j) and indicates that juvenile delinquency is not necessarily a spectrum, which has been the consensus in a variety of disciplines. While it is true that there appears to be a continuum of behavior ranging from active pure conformity to high-rate offending, with statistically normal juveniles occupying the middle of the range (see Models 5g and 5h), passive pure conformists cannot be placed on this spectrum. Passive pure conformists have commonalities with active pure conformists, as neither group violates the law.

While it was speculated that passive pure conformists may have more in common with high-rate offenders than they do with active pure conformists, support was not found for this contention (see Models 5i and 5j). Yet, it is still clear that passive pure conformists are qualitatively different than active pure conformists, statistically normal juveniles, and high-rate offenders. Therefore, they are not able to be placed on the linear spectrum of juvenile delinquency behavior that has been assumed to exist.

Opportunity may separate passive pure conformists from the other three groups. Numerous models presented here show that passive pure conformists more often have higher levels of parental supervision than the other three groups of juveniles. It seems to follow that the more parental supervision one has, the less opportunity there is to violate the law.

Furthermore, passive pure conformists report having fewer friends than active pure conformists. It is likely the case that they have fewer friends than high-rate offenders as well. As criminology has long recognized, delinquency is often group behavior (see generally, Erickson, 1971, 1971; Erickson & Jensen, 1977; Hindelang, 1976; Reiss, 1986, 1988; Shannon, 1991; Shaw & McKay, 1931; Warr, 2002), it is logical that a lack of friends may result in pure conformity. Because active pure conformists report having friends but still do not violate the law, the finding that they more often have higher levels of self-control than both statistically normal juveniles and high-rate offenders accounts for their lack of law-violating behavior. However, self-control does not appear to play as large a role for passive pure conformists; thus, it may be a lack of opportunity, due to a shortage of friends with whom to offend, that accounts for their pure conformity.

If some amount of adolescence-limited, minor, group-oriented delinquency is the norm, not having friends should cause a deviation. Allport (1934) asserted that conformity—a similarity of behavior or appearance—follows a regular pattern (an inverted J-curve) as most people conform to social rules or norms with the vast majority of individuals regularly conforming to societal norms with few people over- or under-conforming. Sherif (1936) built on this idea, noting that due to the group experience, conformity is increased and group norms are established. This is achieved through interpersonal interactions, which results in the leveling-off of extreme opinions. The outcome is a consensus that has a tendency to be a compromise – even if the agreed-upon behavior violates the law. Asch (1956) found that conformity tends to increase as the size of the group increases, though there is little change in this phenomenon once the group size has become optimal (four or five members). As Sutton and colleagues point out, "People are … profoundly sensitive to the expectations of others" (as cited in Hirschi, 1969, p. 5). Yet, these are moot points if an individual does not have friends with whom to conform, as in the case of passive pure conformity. Accordingly, future research should investigate how peer influence through social comparison and social conformity may operate differently for passive pure conformists.

Cullen (2011) has called for a "new criminology" (p. 309) that goes beyond adolescence-limited delinquency, which is statistically normal youthful behavior. He further asserts that the paradigm of adolescence-limited criminology, "although producing enormous good, is now bankrupt" (Cullen, 2011, p. 289), as it leaves out too much, is unlikely to produce any more knowledge of value, will not allow the discipline to do any good for society, and entertains opportunity costs that are far too high. What it

appears that Cullen is calling for is the generation of a new theoretical paradigm to explain the behavior of outliers. The current work not only lends support to that idea, but takes important first steps to achieving that end by showing that the outliers of juvenile delinquency behavior are not only statistically different than the majority, but are also qualitatively distinct.

While pure conformists are occasionally removed from sample data, most traditional studies of delinquency fail to acknowledge their existence as a group of individuals that are qualitatively different from statistically normal youths. As the findings of the current work plainly show that pure conformists are qualitatively distinct from statistically normal juveniles, the findings of more traditional studies of delinquency that fail to acknowledge this distinction are called into question. This is especially true with regard to passive pure conformists who clearly do not fit on the generally assumed spectrum of delinquent behavior. Surely the correlations found in those traditional studies that do not recognize the existence of pure conformity as distinct are weakened. Control theories specifically, which predict conformity rather than delinquency, should be modified to take into account different types of conformity, including both active and passive pure conformists. As it stands, control theories consider conformity to be homogenous, typically in line only with active pure conformity.

Limitations

Though the current work is novel and generates new knowledge about juvenile delinquency outliers, in particular pure conformists, it is not without limitations. The data consisting of only two waves over a two-year time span are the greatest limitation. When pure conformists are identified with only two years of data, pure conformity itself

is likely to be limited. Some respondents identified as pure conformists in the current study, especially those who are younger, may commit delinquent acts in the future as they move further into adolescence. Data collected over a longer period of time should be better at identifying "true" pure conformists; however, more precise categorization of pure conformists should elicit even stronger results than those presented here.

Further, there are likely better techniques to distinguish active and passive pure conformists from one another. The current study used grade point average to differentiate between the two groups, and while this seems to be a solid first step, other approaches should be investigated. This is likely to become clearer as research focusing on the existence of these two types of pure conformists elucidates how they differ from one another.

Finally, the independent variables perhaps could be measured more precisely. Though there exists precedent as to how the independent variables in the current work were constructed, they are not without limitations. The religiosity variable is a good example, as it was measured by only a single question included in both waves of data collection based upon the work of Haynie and Osgood (2005). A single measure of a concept is likely to have low reliability (Shadish et al., 2002) and thus has less predictive value. Future research should turn to more standardized techniques of measuring theoretical concepts, including religiosity.

Implications for Future Research

The current work has many implications for future research. One of the first steps that should be undertaken is to replicate this study using the full, restricted access National Longitudinal Study of Adolescent Health (Add Health) dataset, which has a

much larger sample size from which to identify the different groups of juveniles. The larger sample size should result in increased Cronbach's alphas for the independent variables as well as stronger findings than are presented here. This is especially true for the multinomial logistic regression models as that technique is even more sensitive to sample size than binary logistic regression is (Long, 1997).

While the current work takes solid first steps in describing who active and passive pure conformists are with respect to a wide array of characteristics, future research should work to more clearly delineate how these individuals differ from the other two groups of juveniles. Future studies should also aim to clearly outline how active and passive pure conformists are different from one another as better descriptions of these individuals will eliminate the need for a caricature, which the current work uses as a starting point.

The most novel findings of the current work is that there exists at least two distinct types of pure conformists that are qualitatively different from one another and that passive pure conformists do not fit on the generally accepted linear spectrum of juvenile delinquency. As such, the existence of passive pure conformists, in particular, needs to be further investigated. It is possible, for example, that passive pure conformists not only differ with respect to delinquency, but that they are also non-conformists in other ways, such as employment and marriage. Future studies should investigate the life histories of passive pure conformists to further explain how they are qualitatively different from high-rate offenders and statistically normal juveniles, much as Shaw (1930)—and later Snodgrass (1982)—did with the jack-roller Stanley.

Quite possibly it is not only high rate offenders that are problematic, but that passive pure conformists are troublesome as well. It may be that some passive pure

conformists have issues later in life due to their social awkwardness, lack of appropriate peers, and tendency to not measure up to societal standards. If this is the case, these individuals may be particularly susceptible to responding to life's failures in unhealthy and likely deviant ways, including extreme acts of violence, drug abuse, withdrawal from society, or suicide. It is fruitful then, to identify these individuals in order to provide them with services and programming before they have a final activating failure that pushes them into some extreme behavior. Early identification creates the opportunity for providing preventative services, especially those that target social skills.

Shaw's (1930) work, considered foundational in the field of criminology, outlined how Stanley, who likely fits in the high-rate offending group, is qualitatively different from statistically normal juveniles. Snodgrass' (1982) follow-up with Stanley showed that the jack-roller was not only different with regard to delinquency, but that he also had a lifetime of under- and unemployment, failed marriages, substance abuse, and struggles with mental illness. Yet, Shaw's (1930) work, as well as Snodgrass' (1982) focuses only on one outlier of juvenile delinquent behavior. It is time that the other types of outliers receive the same attention that has historically been reserved for high-rate offenders. Further, it may be that though high-rate offenders and passive pure conformists differ regarding their involvement in delinquency, they are similar with respect to other types of non-conformity. What would such a finding mean for the future of criminological theory? Whatever the case, it is clear that it is time to turn our attention to the outliers of juvenile delinquency behavior, as the results of our endeavors are sure to be worthwhile.

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