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An exploratory look at career criminality, psychopathy, and offending persistence: convergence of criminological and psychological constructs?

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**An exploratory look at career criminality, psychopathy, and offending persistence:
Convergence of criminological and psychological constructs?**

by

Christine Marie Graeve

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Sociology

Program of Study Committee:
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Ames, Iowa

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ABSTRACT

There exists an abundance of literature on career criminality within criminology and psychopathy within psychology. However, relatively little effort has been made linking the constructs together. This thesis examines the influence of several potential determinants of career criminality, psychopathy, and persistent offending. Some of these potential determinants of these constructs include several psychological and sociological factors. The data (N = 2,486) used in this thesis were originally collected in 1964 and 1965 from young males entering the California Youth Authority (CYA) who were then studied for the next 20 years. Binary logistic regression was used to evaluate the effect of the hypothesized determinants on career criminality, psychopathy, and offending persistence in three separate models. Onset of offending, race, and scores on a subscale of the California Psychological Inventory had significant effects in all three (career criminality, psychopathy, and offending persistence) models.

CHAPTER 1: INTRODUCTION

Career criminality and psychopathy are main foci for the disciplines of criminology and psychology, respectively. Despite the conceptual overlap between the two constructs, few efforts have been made to incorporate both in research. Career criminals are seen as being the worst of the worst criminals, and rightfully so. In a review of Career Criminals in Society, Matt DeLisi (2005) added this:

“More than a century of scientific research has indicated that the lion’s share of crime that occurs in society is committed by less than 10% of the population, the group commonly referred to as career criminals. More dramatic, upwards of 70% to 100% of the most severe forms of criminal behavior—predatory acts such as murder, rape, abduction, armed robbery, armed burglary or home invasion, and aggravated assault—are produced by this same 10%.”

Psychopathy may also be seen as being the worst of the worst mental health conditions and has profoundly destructive effect on others. The connection between psychopathy and career criminality has been supported. According to Porter, Birt, & Boer (2001):

“Results indicated that offenders scoring within the psychopathic range consistently committed more violent and nonviolent crimes than their counterparts for about three decades, spanning their late adolescence to their late 40s.”

So, what validity is there in the notion that the constructs of career criminal and psychopath are one in the same? If both of these constructs represent the worst of the worst in each of their respective fields with much overlap between the two, where do the differences emerge? In the following pages, an extensive review of the literature describing the relationship between the concepts of psychopathy and career criminal will be presented. Moreover, a slight variation on career criminality will be included in this thesis. Offending persistence will be investigated in addition to career criminality and psychopathy to more

precisely evaluate the relationship between psychopathy and criminal offending. Career criminals will be defined as those individuals who have been arrested five or more times. Psychopaths will be identified as those individuals who score 76 or higher on the Psychopathic Deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI). Persistent offenders will be defined as those individuals who have been arrested at least two times and have served jail time with parole at least two times. Some have studied the proportion of criminals that are classified as psychopaths, but no one has conceptualized career criminality and psychopathy and analyzed how much the two concepts overlap. Farrington (2005) has even argued:

“To the extent that psychopathy might be used to explain delinquency, it is important that the definition of psychopathy should not include measures of offending or antisocial behavior. Arguably, there has been too much emphasis on risk assessment in past psychopathy research, and too little emphasis on explanation. In the latest edition of the PCL-R test manual, Hare (2003) argued that a fourth factor measuring antisocial behavior should be included in the definition of psychopathy. This would clearly improve the ability of PCL-R to predict future violent and criminal behavior but it would prevent the study of psychopathy as a possible cause of offending.”

The focus of this statement is the circular argument that results from using previous crime to predict future crime. One example of a circular argument is the Psychopathy Checklist-Revised (PCL-R), one measure of psychopathy. Addressing the issue of career criminals and how it relates to psychopathy should give a better understanding of the extent that these two constructs are one in the same and provide for better predictive power of who will become a career criminal.

Because the literature suggests an overlap between psychopathy and career criminality, the main objective of this paper is to examine the impact of violent and non-violent delinquency, age of onset for offending, lifetime polysubstance abuse, and impact of

incarceration while controlling for family and educational background characteristics on psychopathy, career criminality, and offending persistence. Differences will then be examined between six groups: career criminals, non-career criminals, psychopathic individuals, non-psychopathic individuals, persistent offenders, and non-persistent offenders. This study will add additional theoretical and empirical insight to both the psychological and criminological literature providing potential resources to predict the overlap between psychopaths and chronic offenders. A better theoretical understanding of how these two concepts, which have been examined separately, are now more completely understood together. Implications from this study will thus be discussed in reference to both criminological theory and psychological perspective.

To assess the convergent validity between psychopaths and career criminals, three sub-themes are focused on in data analysis. The first: what is the proportion of overlap between career criminals, psychopaths, and persistent offenders?; the second: what are the hypothesized links between these constructs?; the third: what symptoms, traits cognitions, or behaviors commonly predict each construct? Though I am hypothesizing predictors of these three groups (psychopaths, career criminals, and persistent offenders) will somewhat overlap, to conclude that they are still different entities, some differences between these groups based on these three sub-themes must exist. If no differences are found, then I would fail to reject the idea that psychopaths, career criminals, and persistent offenders are equivalent.

Examining the proportion of career criminals also classified as psychopaths has not been thoroughly researched. However, much research has been conducted studying the proportion of criminals classified as psychopaths. According to Porter et al., (2001) 15-25% of those in the federal offender population are considered psychopathic. Psychopathy is also

an important risk factor for recidivism and violence. Those who are psychopathic criminals are also viewed as those who prey on others across their lifespan (Hare, 1996, 1998; Simourd & Hoge, 2000).

One link in the literature between career criminals, who often travel a crime-stricken path, and psychopathy may focus on the increased callousness of the individual, which allows him or her to continue committing crimes well beyond the average age of desistance (Porter, et al., 2001). Many other personality features appear static over the lifespan including those factors associated with affective and interpersonal features. These personality characteristics support the link between career criminals and psychopathy. While, most criminals desist after they reach middle age, career criminals continue committing crimes. It has been suggested that the capacity to commit violent crimes is a relatively static characteristic much like psychopathy. Specifically, features of psychopathy related to affective and interpersonal features of personality seem to remain stable and start at a young age (Frick, 1998). Unchanging characteristics regarding psychopathy and career criminality link the two theoretically. This link should be the focus of future research in this area.

Another possible link between psychopathy and career criminals involves the propensity theory. The underlying theme of propensity theory is the focus on the concepts of static, general, and propensity (DeLisi, 2005). Static refers to something that is fixed, stationary, or unchanging. General is defined as something that is widely applicable and not specific. Propensity refers to an innate inclination or tendency to commit a crime. In his own words (DeLisi, 2005):

“Taken together, these rubrics typify criminological explanations that view recurrent problem behavior as manifestations of some individual-level pathology that remains stable within an individual across social settings and circumstances. More pointedly,

this theoretical perspective asserts that career criminals have been flawed since childhood and that their multifaceted acts of wayward behavior are, quite simply, demonstrative of their inherent “badness”.

Supporters of propensity theory believe there is negative disposition and high propensity to commit crime that starts at a very young age and continues for a vast majority of the criminal’s life.

There is empirically research dating back to 1930 on this topic. Glueck and Glueck (1930) found that 7.3% of persons in a delinquent sample versus 0.4% in a control sample were psychopathic offenders. Others claim that psychopaths are significantly more likely to be among the worst of the worst concerning career criminal offending. Porter, Woodworth, Earle, Drugge, & Boer (2003) found psychopaths engage in violence that is significantly more sadistic and gratuitous than non-psychopaths. Raine (1993), and Walters, White, & Denney (1991) all center their personal theories on psychopathological factors, and in fact claim these factors are the most important causes of career criminality.

Thesis Organization

The following thesis contains five chapters. Chapter One introduces the topics of career criminality, psychopathy, and offending persistence and a brief description of the purpose of the thesis. Chapter Two is divided into two large sections with several subsections falling within each of the sections.

The first main section of Chapter Two addresses psychopathy. The central purpose of the chapter is to define psychopathy and its measures. The first subsection of psychopathy focuses on the boundaries of psychopathy. Here the goal is differentiating between psychopathy, antisocial personality disorder, and conduct disorder. Another subsection in the psychopathy section is the controversies and methodological approaches. Within this

subsection, longitudinal design studies of criminality previously conducted are discussed which provides a foundation for the longitudinal design incorporated in the data examined for the thesis. Finally, previous research that has addressed the relationship between psychopathy and criminal behavior is discussed.

The second major section in Chapter Two discusses the career criminal. The purpose is to define and describe career criminality. The first subsection in the career criminal section describes the characteristics and empirical support for the construct of career criminality. The second subsection describes the profound impact the career criminal has on the criminal justice system. The final subsection describes the relationship between psychopathy and career criminals addressed in criminological research.

Chapter Three describes the data used for this thesis and presents the methodological approach of the current study. The coding schemes are included in this chapter with a brief description of binary logistic regression analysis which predicts classification in the psychopathy group, the career criminal group, or the persistent offender group.

Chapter Four discusses the findings of both a descriptive analysis and binary logistic regression. This chapter addresses the impact of several key variables with demographics on inclusion in the psychopathy, career criminal, or offending persistent group. In addition, multicollinearity is discussed.

Chapter Five summarizes the findings and conclusions of the study. The chapter concludes with a discussion of the importance of several variables on each of the dependent variables. Chapter Five addresses the limitations of the present study.

CHAPTER 2: LITERATURE REVIEW AND HYPOTHESES

Psychopathy

Much of the study of crime and criminal behavior within psychology focuses on personality characteristics of the individual committing the crime. According to Eysenck, (1977; as cited in Donnellan et al., 2002), criminality centers around three different personality characteristics: extraversion, neuroticism, and psychotocism. In addition, criminals tend to be thrill seekers unaware of the consequences rendered for their actions. Several studies support the connection between personality disorders and criminality (Caspi et al., 1994; Krueger, Schmutte, Caspi, Moffitt, Campbell, & Silva, 1994). Most authors who focus on this link note the repeated lack of impulse control and high levels of hostility or aggression in criminals.

The personality traits aforementioned combined with hostility and aggression are components of the definition of psychopathy. Thus, by definition, psychopathy is a condition characterized by lack of empathy and poor impulse control. Hare (1995) describes psychopaths as

“intraspecies predators who use charm, manipulation, intimidation, and violence to control others and to satisfy their own selfish needs. Lacking in conscience and in feelings for others, they take what they want and do as they please, violating social norms and expectations without guilt or remorse.”

Currently, there is not a disorder equivalent to psychopathy in the DSM-IV-TR; however, psychopathy is moderately correlated with antisocial personality disorder (Hare, 1996).

Psychopathy can have a profound impact on someone’s life. Psychopaths lack feelings for others and have no sense of social obligation which can lead to the development of only superficial and shallow relationships.

Research conducted on career criminals and psychopathy has direct policy implications. “The behavioral and criminal consequences of psychopathy may be the most remarkable and ostensibly harmful to society,” (Fung, Raine, Lynam, Venables, Loeber, Steinhauer, Stouthamer-Loeber, 2005). This statement lends support for the increasing need to understand psychopathy in both adolescents and adults. Research has been conducted to find a link between juvenile and adult psychopathy (Fung et al., 2005; Loeber, 1990; Quinton, Rutter, & Gulliver, 1990, as cited in McCabe, Hough, Wood, & Yeh, 2001). Finding direct precursors of adult psychopathy particularly those that appear before a criminal or deviant act occurs can help the criminal justice system intervene before harm is done to the individual or someone else.

There are many definitions of psychopathy. However, nearly all definitions agree psychopathy is a destructive personality disorder associated with several factors including impulsivity, remorselessness, manipulation, and arrogance (Hare & Hare, 1997; Farrington, 2005; Cooke & Michie, 2001). One major theoretical distinction needs to be made to differentiate psychopathy from antisocial behavior. Some have questioned the ability to qualitatively distinguish between the two constructs. According to Vaughn, Howard, and DeLisi, in press),

“Psychopathy is *not* thought to be equivalent to the psychiatric diagnosis of Antisocial Personality Disorder, but rather is a part of the family tree of descriptors characterizing a variety of antisocial subtypes or orientations.”

Based on this conclusion and due to the need to differentiate between the two constructs, it is necessary to not include measures of antisocial behavior as part of the definition of psychopathy. Farrington (2005) takes the argument even further claiming that too much emphasis is placed on risk assessment of psychopathy and not enough explanation of how

psychopathy actually works and what factors comprise psychopathy. While adding an antisocial component to a psychopathic measure would increase its predictive power, it would also increase the circular reasoning used to predict psychopathy.

There is evidence that psychopathy has lasting effects and that it exhibits significant stability (Lynam, 1997; as cited in Fung et al., 2005). Several studies have shown “juvenile psychopathy provides predictive utility above and beyond other relevant constructs including previous offending, aggression, conduct problems, impulsivity, IQ and attention problems” (Lynam, 1997; Ridenour, Marchant, & Dean, 2001; as cited in Lynam et al., 2005). With these results, there is increased pressure to understand the link between juvenile psychopathy and adult delinquency. Some distinctions and clarifications will follow to better define the psychopathy construct.

Several controversies surround research on psychopathy. The first of these controversies focuses on the boundaries of psychopathy. In describing this controversy, several key pieces of information will be described. First, the elements of psychopathy will be examined, a distinction will be made between psychopathy and several other psychological disorders, and key decisions of how psychopathy will be addressed in the present study will be made. A second controversy surrounding psychopathy focuses on methodological approaches. Here, several issues will be addressed, including: which if any psychological disorders can or should be controlled for when measuring psychopathy, the advantages and disadvantages of various psychopathy measures and suitability of examining psychopathy as a discrete taxon or as a continuous dimension. Third, a review of the literature currently incorporating career criminality into psychopathy research will be

presented. Last, a discussion of how key decisions will be made for the present study based on the literature review.

Boundaries of Psychopathy

A major issue or controversy in formulating the construct of psychopathy is determining the boundaries of the construct. Some have attempted a “control approach” in which the construct of psychopathy is created by controlling for several other disorders or factors that may influence the true psychopathy construct. In addition to developing boundaries of psychopathy, it is important to address the elements of psychopathy. Several key elements constitute the psychopathy construct which will be discussed. Finally, it is important to note that several of these issues within the debate on the boundaries of psychopathy will help guide key decisions on how psychopathy is conceptualized in the current study.

Psychopathy Comorbidity

Some disagreement exists when trying to define and measure the psychopathy construct. One problem that occurs when measuring psychopathy is comorbidity. This is a problem because it becomes hard to determine whether the actions of someone can be attributed to psychopathy or not. Usually the comorbidity problem is addressed by controlling for factors that may mediate the relationship between psychopathy and someone’s actions. Some of these factors include Attention Deficit Hyperactive Disorder (ADHD), child abuse, psychosocial adversity, or head injury (Raine, Moffitt, Caspi, Loeber, Stouthamer-Loeber, & Lynam, 2005). However, according to Raine et al. (2005), those individuals who continued a lifetime of criminality were more impaired both neurocognitively and psychosocially than controls when controlling for ADHD, child abuse, psychosocial

adversity, or head injury. Furthermore, some (Lilienfeld & Waldman, 1990; as cited in Lahey et al., 2005) have expanded on the effect ADHD may have when measuring the effect psychopathy has on an individual and they go on to claim that although “ADHD may be a predictor of adult antisocial behavior...most longitudinal studies have not confirmed this finding.” Lynam et al. (2005) found ADHD was not a predictor of Antisocial Personality Disorder (APD) even when combined with childhood Conduct Disorder (CD) factors. This is one example of how past researchers have attempted to control for disorders that may overlap with psychopathy. Thus, the true effect mental disorders have on psychopathy is still being debated.

Similar to studies attempting to control for ADHD, some attempts have been made to control for other disorders, such as Conduct Disorder which may share similar characteristics with Psychopathy. Lynam (1996; as cited in Lynam et al., 2005) hypothesizes that adults with psychopathy are more likely to have childhood histories of both ADHD and CD rather than histories of just one or the other. He goes on to argue this hypothesis can also be applied to those who are diagnosed as antisocial adults. Support for this claim is found in Moffitt, Caspi, Harrington, & Milne (2002; as cited in Lahey et al., 2005) where results indicate those individuals who continue delinquency throughout their lives and were characterized as having both childhood conduct problems and hyperactivity were more likely to be involved in both serious and violent behavior and show signs of psychopathy at age 26 than those who were not characterized as having both childhood conduct problems and hyperactivity. Results from Lynam et al. (2005) indicate regardless of how Conduct Disorder (CD) is best measured, childhood CD behaviors are significant predicts of future adult APD. Such that, it is important whenever possible to intervene when childhood CD is diagnosed to attempt to

prevent the possible development of adult APD or psychopathy. Conduct Disorder provides another example of the difficulty in attempting to differentiate between psychopathy and other similar disorders.

Support for the inclusion of both sociological and psychological predictors of juvenile crime is found by Moldavsky, Stein, Lublinsky, Meged, Barel, Avidan, Elizur, and Weizman, (2002) where they attempted to untangle the complex association between juvenile delinquency and psychopathy by measuring the effect of ADHD, CD and Bipolar Disorder. They (Moldavsky et al., 2002) found support for a different view of the relationship between Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), and Bipolar Disorder (BPD). The investigators examined whether or not those children who are ordered to be in inpatient psychiatric facilities truly resemble those who have both behavior and psychosocial problems and individual and familial psychiatric disturbances. The sample of individuals was divided into three groups: juvenile delinquents (n=44), minors at risk (n=20), and psychiatric control group (n=26). The results indicated that juvenile delinquents have significantly less years of schooling than minors at risk do and the psychiatric control group and higher rates of disruptive personality disorders (ADHD, CD, BPD) and criminality but lower rates of major psychiatric illness than minors at risk or the psychiatric control group. Perhaps there may be a genetic influence on psychological disorders because the first-degree relatives of juvenile delinquents were more likely to show an over-representation of ADHD and conduct disorder. It is important to note, however, that most of those who were labeled as minors at risk did not become delinquents despite their exposure to familial dysfunction, physical or sexual abuse, and separation events. This finding may support the notion that those individuals who actually commit crimes may be genetically distinct from those who do

not. Therefore, it is important to include both sociological and psychological measures to best predict those who will be criminals compared with those who will not.

Differentiating between Psychopathy, Antisocial Personality Disorder, and Conduct Disorder

Some research indicates that psychopathy, antisocial personality disorder, and conduct disorder need to be addressed separately. However, others believe these categories may not be mutually exclusive (Fung et al., 2005). Some claim that antisocial behavior is just one component of psychopathy and has become an integral part in the current measurements of psychopathy (Fung et al., 2005). According to Fung et al. (2005), antisocial personality is embedded within psychopathy and “cannot be considered a confound in the usual sense of the term”. More research is needed to clarify the relationship between the two constructs.

One study has attempted to distinguish between antisocial personality disorder and psychopathy. An important review on the topic was written by Vasey, Kotov, Frick, and Loney (2005). The initial emphasis of this study was defining psychopathy as a disorder that often is seen to encompass behavioral, interpersonal, and affective features. Accordingly, a majority of those who are psychopathic have callous-unemotional (CU) traits and impulsive-conduct problems (ICP) (Frick et al., 1994; Frick, Bodin, & Barry, 2000; as cited in Vasey et al., 2005). According to Frick (1998) and Harpur et al. (2002), APD is often highly correlated with the factor within psychopathy labeled impulsive-conduct problems (ICP), but is less correlated with the portion of psychopathy labeled callous-unemotional (CU). Therefore, a large majority of incarcerated individuals would meet APD criteria and thus rate highly on a scale measuring impulsive-conduct problems. However, it is unlikely those same individuals would also score highly on the callous-unemotional part of psychopathy and would likely not

be diagnosed with psychopathy. Some support for the finding that a large majority of incarcerated individuals would not be diagnosed with psychopathy has been produced.

According to Hart & Hare (1989; as cited in Vasey et al., 2005) adult forensic studies suggest a base rate for psychopathy of approximately .20 to .25 in incarcerated samples. As a result, this is an example of a proponent for the ability to distinguish between antisocial personality and psychopathy.

Several other studies have examined the antisocial component of violent offenders and many agree that these individuals share some neuropsychological impairment (Henry & Moffitt, 1997; Ishikawa & Raine, 2002; Moffitt, 1990b; Morgan & Lilienfeld, 2000; Raine, 1993; as cited in Raine et al.; 2005). Raine et al. (2005) looked to fill-in the empirical gaps in the literature based on the childhood-limited group. Not much information has been collected about this group. In addition, an attempt was made to expand upon the role comorbidity may play in neurocognitive impairments. Three sources of information were used including self-report, parental report, and teacher report. Raine et al. (2005) differentiated four different comparison groups: control group (control), childhood-limited (CL), adolescent-limited (AL), and life-course persistent (LCP). Childhood-limited (CL) are those individuals who commence and desist offending during childhood, adolescent-limited (AL) are those who commence and desist offending during adolescence, and life-course persisters (LCP) are those who begin offending in childhood and continue offending beyond adolescence. Participants were assigned to the different categories based on several antisocial behavior measures. These categories are based on the Life Course Persistent (LCP) theory which claims that those who offend starting at a young age and continue throughout adulthood have early neurocognitive and psychosocial impairments which contribute to persistent antisocial

behavior; however, most offenders do not follow such an extreme path and thus do not exhibit such impairments (Moffitt, 1993; Moffitt, Caspi, Rutter, & Silva, 2001 as cited in Raine et al., 2005). Much like the distinctions made here, the present study incorporates a measure of offending persistence that may relate to career criminality and psychopathy. Groups (control, CL, AL, LCP) differed significantly based on delinquency scores and overall neurocognitive functioning at all ages. Raine et al. (2005) concluded that neurocognitive impairments found in antisocial groups were etiologically significant and not an artifact of some other comorbid condition. Another interesting finding from this study is that the CL antisocial group showed significant impairment (compared with the control group) on more neurocognitive tests than the LCP group. Interestingly, the CL group had fewer head injuries than the LCP group. Many of these same factors (i.e. head injury, neurocognitive measures) included are the building blocks of the present study.

Psychopathy, as a construct is still being formulated as measures are validated and research continues. Another major controversy centered on psychopathy is whether psychopathy should be treated as a discrete taxon or a continuous dimension. It should be noted that this issue is part of a much larger debate within psychology centered around classification of mental health disorders in general as a move is made towards a DSM-V. Vasey et al. (2005) examined the taxometric structure of psychopathy and found psychopathy may be a broader construct than once thought. As a result, Vasey and others call for a need to identify characteristics that are strongly related to psychopathy but less strongly related to the broader class of conduct problems such as Antisocial Personality Disorder (APD) and Conduct Disorder (CD). Because it still is unclear where the boundaries of psychopathy are drawn in relation to other psychological constructs, the present study includes several

personality measures in addition to psychopathy. Some of these measures include several scales from the California Psychological Inventory (CPI). One such measure is the Sociability (Sy) scale which has essentially been tested as a valid measure of both social participation and outgoingness. Some characteristics used to describe those who are high on the Sy scale include clever, confident, logical, mature, outgoing, and self-confident (Megargee, 1972). In contrast, those scoring low on the Sy measure can be described as awkward, bitter, hard-hearted, shallow, and unkind. In general, psychopathy will be treated as an extreme on a continuum which may incorporate several other psychological constructs. Another scale from the CPI used in the present study is Responsibility (Re). Some of the most consistent findings with the Re have come from delinquent or antisocial groups. According to Reckless, Dinitz, & Kay, 1957; Dinitz, Kay & Reckless, 1957; Dinitz, Reckless, & Kay, 1958; as cited in Megargee, 1972), “Re could discriminate differences significantly within a fairly homogeneous sample.” This lends support for the use of the Re score in the present study which includes a quite homogeneous sample with nearly over three fourths of individuals classified as career criminals.

Controversies and Methodological Approaches

Another major controversy surrounding the measurement of psychopathy is determining a true measure of psychopathy. Some think it is possible to produce a true measure of psychopathy. However, not all agree constructs such as ADHD or antisocial behavior can or should be controlled for when looking at psychopathy. According to Fung et al., (2005) narcissism and psychopathy overlap because they share similar features including grandiosity, blunted empathy, aggression, and impulsivity. Support for these features being central to the psychopathy construct has been found (Kernberg, 1989; Kelsey et al., 2001, as

cited in Fung et al., 2005). Fung et al. (2005) call for a more thorough investigation of the relationship between psychopathy and narcissism which may help to better understand each of the constructs separately and together. The findings of Fung et al. (2005) and others provide an example of the overlap that occurs between psychopathy and narcissism when measuring psychopathy. These findings will be expanded upon using other measures of personality which may allow for better prediction of psychopathy, career criminality, and offending persistence.

Measurement of Psychopathy

There are several measurement instruments of psychopathy. These measurement instruments are most frequently used in risk assessment of individuals' re-offending rates. Sixty seven percent of 300,000 prisoners were rearrested upon release within three years (Langan and Levin, 2002; as cited in Berg, 2005). The detection of psychopathy may help to prevent criminals from re-offending following release which is important considering the surge in prison releases. If true measurements of psychopathy could help in the prediction of reoffending upon release from prison, it would have great policy implications in the juvenile court system.

One personality assessment instrument is the California Psychological Inventory (CPI). According to Donnellan, Ge, & Wenk (2002) the CPI is "one of the most widely used personality assessment instruments." The CPI measures "folk concepts" –the everyday constructs or beliefs people use in formulating their own personality or the personality of others. The CPI is comprised of several true and false questions which have been found to be internally consistent for each of the subscales (Gough and Bradley, 1996, p. 58; as cited in Donnellan et al., 2002). Donnellan et al. (2002) assessed CPI scores of 4,164 adolescent male

offenders who were committed to the Reception Guidance Center at the Duel Vocational Institution (DVI). A significant relationship existed between normative measure of the CPI and age of first arrest (Donnellan et al., 2002). Those individuals who were first arrested at an older age were more likely to have a conforming behavior, concern for other's impressions, responsibility, self-control, norm-following, acceptance of others, and cheerful and healthy personality. Donnellan et al. (2002) claim the differences in criminal careers are based on or at least related to personality differences including personal values, norms, and socialization. However, no relationship was found between empathy or dominance and career criminals. Overall, these findings do not support a direct link between psychopathy and career criminals due to the lack of relationship between two core principals of psychopathy—empathy and dominance with number of arrests.

Two older measurements of psychopathy include the Psychopathic Deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI; McKinley & Hathaway, 1944) and the Socialization scale from the California Psychological Inventory (CPI; Gough, 1957). One study examined the factor structure of these two measures of psychopathy and examined how well the measures estimated psychopathy. According to Benning, Patrick, Blonigen, Hicks, & Iacono (2005), these two measures relate primarily to the behavioral deviance component of the Psychopathy Checklist-Revised (Hare, 1985; Lilienfeld, 1994; as cited in Benning et al., 2005). Using the Pd and So to assess psychopathy may help to discover the main constructs underlying psychopathy because of the increased use of personality measures. Benning et al. (2005) examined 360 students from Florida State University. Two of the measures included in their assessment were the Taylor Manifest Anxiety Scale (TMAS; Taylor, 1953), a subset of items from the MMPI which measures several physical

and emotional symptoms of anxiety, and the Socialization Scale (So; Gough, 1957, 1960) a subscale formulated from the California Psychological Inventory (CPI; Gough, 1957). In the So, higher scores are associated with lower antisocial tendencies. These measures were then examined in relation to two factors (PPI-I and PPI-II) formulated from the Psychopathic Personality Inventory which was developed to provide a complete measure of the personality characteristics of psychopathy. The PPI-I factor has been associated with social dominance, stress resiliency, and thrill seeking; whereas, the PPI-II factor has been associated with rebelliousness, impulsivity, aggression, and alienation (Benning et al., 2005). According to Benning et al. (2005) TMAS was negatively associated with the PPI-I ($p < .001$) and positively associated with the PPI-II ($p < .001$); CPI (So) was slightly negatively associated with both factors. Overall, results indicate constructs measured by the different instruments are not identical. However, each instrument has empirical importance in measuring psychopathy. In the present study, the Socialization (So) subscale will not be included because of its overlap with Self-control measures.

Longitudinal analysis of the two factors of the Psychopathy Personality Inventory (PPI) has helped explain psychopathy throughout the life course. Blonigen, Hicks, Krueger, Patrick, & Iacono (2006) sought to examine two factors of the Psychopathy Personality Inventory (PPI), which they labeled fearless dominance (FD) and impulsive antisocial (IA). These factors were examined across critical periods of psychological adjustment, from late adolescence to early adulthood. A second objective of the study was to examine the effect of environment and genetics on the development of psychopathic traits. According to Blonigen et al. (2006), from late adolescence into early adulthood psychopathic personality traits may follow distinct developmental paths in which interpersonal-affective traits remain stable, but

social deviance traits change. Blonigen et al. (2006) claim psychopathic trait stability are most influenced by genetics while changes in psychopathic traits are more likely due to environmental factors. Measures of impulsivity are included in the present study by using the Self-control (Sc) scale from the CPI. Some research has been conducted using a criminal sample with the Sc scale of the CPI. When comparing the Sc scores of extremely assaultive, moderately assaultive, and nonviolent criminals, Megargee & Mendelsohn (1962) found that those individuals who were classified as moderately assaultive had more self-control than nonviolent criminals. Megargee (1972) argues that more research is needed to explore the implications of above average scores on the Sc scale of the CPI. Support exists for differing causes in the change and stability psychopathy undergoes throughout the life course.

The So scale of the CPI and the Pd scale of the MMPI have been central in attempting to measure distinct factors within psychopathy. One major issue of psychopathy is the criterion-related validity of the three-factor model of psychopathy as opposed to the two-factor model. In a two-factor model proposed by Harpur, Hakstian, and Hare (1988), Factor 1 represents interpersonal and affective features and Factor 2 represents social deviance. However, more recently a three-factor model was proposed where Factor 1 represents a behavioral factor, Factor 2 represents an affective factor and Factor 3 represents an interpersonal factor (Cooke and Michie, 2001). Relating to this study is the reliability of the Psychopathy Checklist (PCL) total scores (most accepted measure of psychopathy) in measuring factors associated with the Socialization (So) scale from the California Psychological Inventory (Gough, 1960) and the Psychopathic Deviate (Pd) scale from the Minnesota Multiphasic Personality Inventory (MMPI) ($r^2 = -.26$ and $.38$, respectively; Hare, 1985, as cited in Hall, Benning, Patrick, 2004). A similar comparison was made with the

three-factor model of the PCL-R and Socialization (So) scores (Hall et al., 2004). All three factors and the PCL-R composite scores were negatively related to Socialization (So) scores (interpersonal, $r=-.16$; affective, $r=-.21$; behavioral, $r=-.52$; composite, $r=-.36$). The study found support for the external validity of the three-factor model of psychopathy proposed by Cooke and Michie (2001). Several of these measures will be included in the present study and an attempt to understand the factor structure of psychopathy based on how well individual scales from the CPI predict psychopathy scores based on the Psychopathic Deviate (Pd) scale of the MMPI will be made.

Conflicting views on whether psychopathy should be measured as a dimensional or a categorical construct exist (Vasey et al., 2005). The validity of the construct will differ when it is measured dimensionally compared to categorically. According to Lynam (2002; as cited in Vasey et al., 2005), “most of the research aimed at understanding psychopathy operates from the perspective that psychopathy is a relatively homogeneous condition that is qualitatively distinct from normal functioning” (p. 325) this statements lends support to a categorical view of psychopathy; however, psychopathy is also examined dimensionally along a continuum. According Vasey et al., (2005) empirically studying psychopathy dimensionally could create several challenges. Often the analysis conducted using psychopathic measures assumes linearity between dependent variables and psychopathy. However, the relationship between dependent variables and psychopathy may be non-linear. The assumption of linearity is not made in the current study. The distinction between categorical and dimensional views of psychopathy may have real repercussions when treating or preventing psychopathy. There is a difference in conceptualizing psychopathy as an extreme on a continuum of normal behaviors versus conceptualizing psychopathy as being a

qualitatively distinct category different from those without the disorder. Overall, some support is provided to treat psychopathy as a category.

However, others disagree that psychopathy should be viewed as a category. Lynam et al. (2005) found support for a dimensional approach to examining psychopathy. Their study examined adolescent psychopathy using the Big Five (FFM) dimensions of personality, a normal-range personality measure. According to Lynam et al. (2005), psychopathy can be understood using the FFM. Other normal-range personality scales may be used to assess the dimensions of psychopathy. Several normal-range personality measures are included in the present study where the goal is predicting psychopathy from measures that are used more frequently in community-based samples than the current measures of psychopathy (i.e. the MMPI and the PCL-R).

Longitudinal Design and Deviant Behavior

Several studies have used longitudinal data to determine the relationship between age and delinquent behavior. One study attempted to provide empirical evidence to explain the contradiction that, "...most seriously antisocial adults have displayed long histories of problem behavior since childhood, most antisocial children do not go on to lives of sociopathy and crime (Maughan & Rutter, 1998; as cited in Maughan, Pickles, Rowe, Costello, & Angold, 2000). Maughan et al. (2000) provide a review of three different approaches to studying the development of individuals who are antisocial and/or delinquent. The first approach, defined as "variable-oriented," seeks to identify predictors of individual differences and environmental risks that may increase the likelihood of criminal activity. This type of longitudinal approach has been adopted by several criminologists and has been fruitful. The second longitudinal approach to explaining the connection between childhood

and adulthood behavior is coined “person-oriented”. In the “person-oriented” approach, the emphasis is more holistic. Those who use this method classify individuals into sub-groups based on conceptual or empirical reasoning rather than connecting individual predictors with later behavior. For example, researchers may group individuals based on childhood conduct problems, which are centered on behavioral dimensions such as aggressive and non-aggressive conduct problems. The two groups are then compared on a number of variables (Maughan et al., 2000). The third approach, the “developmentally-oriented” approach, focuses on identifying population heterogeneity in developmental trajectories. Those who examine longitudinal studies using the third approach attempt to develop different trajectories based on differences noted early on in childhood development. Maughan et al. (2000) examined a diverse group of individuals and asked them to report on several potential risk factors of psychopathy as well as conduct problems. The sample was then classified into homogeneous subgroups based on both trajectory classes and family adversity. Those with high levels of conduct problems were more likely to come from families in poverty, had parents who experienced police involvement, and had poor parental supervision and monitoring than those with low levels of conduct problems. This particular study provides evidence for environmental differences between those who have high levels of conduct problems and those with low levels. This is an example of measuring psychopathy with a longitudinal study.

Longitudinal studies have also provided evidence for the claim, conduct problems in early childhood are significant predictors of adult antisocial behavior and psychopathy (Loeber, 1990; Quinton, Rutter, & Gulliver, 1990; as cited in McCabe, Hough, Wood, & Yeh, 2001). Some (Brown et al., 1996; Hinshaw, Lahey, & Hart, 1993; Loeber, 1998;

Moffitt, 1993; Patterson, 1986; Tolan, 1987; as cited in McCabe et al., 2001) take this argument even further to assert that conduct disorder, which begins early in childhood, may be “qualitatively distinct” from conduct disorder which begins later in life. Therefore, some longitudinal studies have indicated significant evidence for the importance in studying early years of childhood and adolescence when attempting to predict antisocial behavior later in life.

More support is found for early childhood predictors of adult antisocial behavior. Moffitt (1993) has found evidence for the fact that “life-course persistent antisocial behavior” can be traced back to both neurological deficits and exposure to environmental risk as opposed to “adolescent-limited antisocial behavior” which is often caused by disconnect between biological and social maturity in which adolescents commit antisocial behaviors to gain access to adult privileges. Other studies have also found support for this position (Loeber, Green, Keenan, and Lahey, 1995; Lahey, Loeber, Quay, Applegate, Shaffer, Waldman, Hart, McBurnnett, Frick, Jensen, Dulean, Canino, & Bird, 1998; Tolan, 1987; as cited in McCabe et al., 2001). As a result, these findings support the need to distinguish between which childhood predictors best predict adult offending for different types of offenders.

Similarly, more support is found for the need to differentiate between types of offenders to best match which childhood factors will predict offending. McCabe et al. (2001) found support for Moffitt’s theory in that individual and family factors were better predictors of “life-course persistent antisocial behavior” whereas, ethnic minority status and exposure to deviant peers were better predictors for “adolescent-limited antisocial behavior”. However, not as much support was found for the hypothesis that “life-course persisters” have higher

rates of violent behavior than “adolescent-limited” individuals. McCabe et al., (2001) expanded on this finding suggesting that the crimes committed by both groups may not be as different as once thought. Overall, support for the importance of categorizing offenders into subgroups has been found and matching those subgroups with different childhood predictors will best maximize predictive power.

Psychopathy and Criminal Behavior

It is important to review studies which have directly analyzed the relationship between psychopathy and career criminality. Some of the more recent attempts to bridge the gap between the two constructs will be presented. Researchers have attempted to explain the complex relationship between psychopathy and criminal behavior. Harris, Rice, and Comier (1991; as cited in Vaughn and DeLisi, in press) found psychopathy to be the strongest predictor of recidivism. Accordingly, psychopathy more strongly predicts recidivism than background, demographic, and criminal history combined. Campbell, Porter, and Santor (2004; as cited in Vaughn and DeLisi, in press) concluded that a violent and versatile criminal history was positively associated with the clinical diagnosis of psychopathy. Furthermore, Vaughn and DeLisi (in press) found significant evidence for the net effect of personality and affective psychopathic traits on career criminality when controlling for demographic and other mental health problems. According to Vaughn and DeLisi (in press), psychopathic traits accounted for 42% of the total explanatory power for the regression model of career criminality. Psychopathic traits were able to correctly predict career criminal membership with an accuracy ranging from 70 to 88%. The present study will include sociological factors used to predict career criminality.

Research on psychopathy in criminology is quite controversial. In general, some find it difficult to place much of the blame on the individuals themselves. Proponents of this view claim that preventative measures cannot reach people that have a genetic predisposition to commit crime. However, Raine & Liu (1998) argue that:

“Biology is not a destiny for violence, that we can change biological risk factors using benign, non-invasive techniques, and that a new generation of biosocial health research is required to help develop new strategies for more successful violence management.”

Accordingly, some feel that as more biological research is conducted, researchers will take a “throw-away-the-key” approach to treatment and intervention. Raine & Liu (1998) assert that not only does this approach impede on any advances in understanding violence, but it also has a negative effect on the developments of the services provided by mental health professionals. This serious issue needs to be addressed by criminologists. Not embracing or at least exploring the biological/individualistic side to crime is like putting together an entire puzzle with only half of the puzzle pieces. Raine & Liu (1998) also call for more effective health interventions to be developed to help aggressive and violent individuals in both an institutionalized and a community setting. Focusing on biological causes of crime, is not to turning away from sociological causes of crime, but rather obtaining a complete and accurate picture of everything that effects these who commit crime.

Psychopathy Summary

There are several areas that the current study attempts to add to the literature. Few studies have included measures of psychopathy, personality, career criminality, and offending persistence (derived from the number of times a person is incarcerated). The goal of the present study is to better predict those individuals who are psychopaths, career

criminals, and persistent offenders. The potential for this study to expand on the present literature is great because of the predictive tools available including several psychological scales and environmental indicators.

This chapter introduced several key debates centered on psychopathy. Some of these issues include developing boundaries of psychopathy, describing the elements of psychopathy, and discussing some controversies with methodological approaches to measuring psychopathy. Several decisions have been made based on these debates which will guide the current research. Several guiding factors will be introduced to help prepare the reader for the current analysis. In the current analysis, psychopathy will be measured without the inclusion of antisocial behavior. This is performed by using the Psychopathic Deviate (Pd) scale of the MMPI as the measure of psychopathy. The goal of the current research is to attempt to classify individuals as either psychopaths, career criminals or persistent offenders. Like current research on this topic, a similar approach will be taken using several environmental factors to try to predict career criminality. As shown throughout the literature review, several factors have been empirically supported to predict career criminality, offending persistence, and career criminality. Some of these factors are mentioned here, but are discussed in more detail in the methods section. Additionally, several psychological measures will be utilized. Some of these psychological measures include scales from the California Psychological Inventory (CPI), Psychopathic Deviate (Pd) scale from the MMPI, and several questions addressing a history of neurological impairment. Because there is little research including both sociological and psychological measures, the current study enhances the literature. The relationship between several scales and psychopathy will be revisited to examine the predictive power of each scale for career criminality, psychopathy, and

offending persistence. In addition, several sociological measures will be included such as educational attainment, marital status, parental marital status, and work experience. These variables are particularly important in predicting career criminality and offending persistence. Overall, the current study attempts to improve upon the current literature in helping to bridge the gap between sociology and psychology within criminology.

Career Criminality

Another major construct incorporated into this empirical investigation is career criminality. A career criminal is defined as a person who repeatedly violates the law, organizes his or her life around criminality, often beginning at a young age, and does not cease offending at middle age (DeLisi, 2005). The actual number of crimes needed to be committed in order to be classified as a career criminal is debatable, but according to DeLisi (2005), the accepted number of arrests or police contacts is five or more. This level will be used in the current study. Career criminals are individuals whose lives have involved numerous criminal and problematic behaviors that continue throughout much of the life course. Some place career criminals on the far end of a continuum of offending in which their life is marked with an early onset of misbehavior which is shown through some latent trait (DeLisi, 2001). Much debate has occurred over whether or not the latent trait exists. Moreover, if the latent trait does exist, it is also debatable on how to pinpoint the actual construct. However, others who do not believe it is possible to classify individuals into types of offenders or even identify those who are career criminals (Gottfredson and Hirschi, 1986, 1987, 1988; as cited in Piquero, Farrington, & Blumstein, 2003) follow a much different paradigm. Gottfredson and Hirschi, (1986, 1987, 1988; as cited in Piquero, Farrington, & Blumstein, 2003) go on to say, “attempts to identify career criminals and other types of offenders (are) doomed to fail.” The underlying assumption in this work will be to assume it is possible to classify individuals into typologies like a career criminal.

In order to operationalize career criminality, focus will be on a few variables that are widely accepted as being associated with classifying someone as a career criminal.

Rationalization for conceptualizing career criminality is provided through explanation of

several key variables. Career criminals who focus their life on crime may suffer in other areas in their life. One example is the effect career criminality has on education. If someone focuses his or her life on crime, it may be hard to put much emphasis on going to school which may take up a good portion of the day. Career criminals start to commit crimes at a younger age and for this reason, age at first arrest is included in the present study. Previous incarcerations will likely be high due to the increased frequency that career criminals engage in crime. Time served also may be high due to the relatively serious crimes often committed by career criminals. Career criminals also tend to participate in a wide variety of crimes, hence the inclusion of types of convictions. More about this relationship between these variables will be discussed in the following text. An attempt to predict a construct slightly different from career criminality will be included. This construct will be conceptualized as offending persistence. Offending persistence incorporates the effect of incarceration in hopes to differentiate those individuals who are continuously arrested and released from those individuals who are continuously arrested but have served jail time. According to Shover (1996) individuals who have “a taste of ‘the joint’ surely reduces the odds that released prisoners will choose to commit crime again.” Adding to this Shover (1996) goes on to say, “imprisonment is one of the most important accelerants of the rationalization of crime, the process by which offenders transform it into a somewhat more calculated affair than it is for most juveniles.” Therefore, being incarcerated even once according to Shover (1996) will help criminals to better understand the cost of crime and consequences that can occur if the individual turns back to crime. For the present study, it is then assumed that those individuals who are incarcerated at least once are distinctly different from those who have not been incarcerated.

Empirical Evidence on Career Criminals

Most persons are law-abiding individuals who hardly, if ever, are arrested or even come into contact with police; however, there are a select few who fall under the title “career criminal”. Career criminals comprise less than ten percent of the population, but commit a large percentage of crime (DeLisi, 2005). A career of crime is said to have several components including: participation, differentiating between those who participate in crime and those who do not; frequency, how often an active offender participates in criminal activity; duration, how long an active offender participates in criminal activity; and seriousness, what types of crimes are committed (Blumstein et al., 1986; as cited in Piquero et al., 2003). More explanation of frequency will be attempted due to the effect incarceration may have on this component of career criminality. Previous research indicates those individuals who are incarcerated may differ in frequency of crimes committed than those who have not been incarcerated. Spelman (1994; as cited in Piquero et al., 2003) claims, “the average offender commits about eight crimes per year, while offenders who are incarcerated at some point in their lives commit thirty to fifty per year.” As a result, an offending persistence construct will be included in an attempt to capture some of the key factors within career criminality and attempt to better predict and understand career criminality. Taking into account these measures, if each of these components is seen as being on a continuum, career criminals would fall near the high end on each of these measures. Therefore, there are three main constructs to be noted when study career criminality: duration, frequency, and seriousness of crime. Each of these constructs will be explained and examined in further detail throughout the literature review.

Demographic Characteristics

Those who are career criminals have defining demographic characteristics, which are important to note and may help in predicting career criminality. These demographic characteristics are included to give a better understanding of the career criminal. In general, males are more likely to participate in serious crime regardless of age than females (Blumstein et al., 1986; as cited in Piquero et al., 2003). More specifically, “males are significantly more likely than females to become chronic, habitual, or career criminals in addition to being diagnosed with oppositional defiant disorder (ODD), attention deficit hyperactivity disorder (ADHD), antisocial personality disorder (APD), or psychopathy” (DeLisi, 2005). Gender comparisons are important distinctions to make when trying to predict those individuals who are more likely to become a career criminal. In addition to committing more crimes, males are also more likely to have a more diverse and longer lived criminal career than women (DeLisi, 2005). Although there are female career criminals, they are ten times less common than male career criminals (DeLisi, 2002; as cited in DeLisi, 2005). However, evidence has provided support for the idea that a small percentage of both genders accounts for a large percentage of police contacts with each gender (Piquero, 2000). Furthermore, more differences between males and females have been noted. Elliot (1994; as cited in Piquero et al., 2003) found females peaked earlier than males in terms of serious and violent offending. After the peak, female participation in serious and violent offending declined more steeply than their male counterparts. Although the gender comparison is of much interest, only males will be included in the current study. As indicated, there are several key differences between genders when researching career criminality.

Another key demographic characteristic important in studying career criminality is race/ethnicity. However, the relationship between race, ethnicity, and career criminality is not as straightforward as the relationship between sex and criminality. In general, non-white: white official arrest records indicate an official arrest ratio of 4:1 in adolescence (Wolfgang, Figliow, & Sellin; Hamparian et al., 1978; as cited in Piquero et al., 2003) and this pattern seems to continue on into adulthood (Kempf-Leonard, Tracy, & Howell, 2001; as cited in Piquero et al., 2003). More specifically, the likelihood of being a habitual offender based on race/ethnicity provides evidence that racial minorities (African Americans and Hispanics) are more likely to be career criminals than whites. Furthermore, African Americans are more likely to be involved in more crimes associated with violence (Kelley et al., 1997; as cited in Piquero et al., 2003), however, it is important to consider the fact that a common set of traits and behaviors are found in those who are career criminals regardless of race or ethnicity. DeLisi (2005) gives a word of warning in which he suggests “a small cadre of statistically aberrant criminals is an empirical reality that ostensibly transcends race and ethnicity.” It is critical to note race and ethnicity when investigating career criminality but it is equally important not to try to explain career criminality based on a static feature such as race or ethnicity.

Age is another important factor to consider when researching crime. In general, most individuals commit fewer crimes as they age. According to the “age-crime curve”, delinquency begins in adolescence and peaks around age 17, followed by a sharp decline in offending in adulthood (Moffitt, 1993). However, not all individuals follow the “age-crime curve” and some continue to commit crimes throughout their life. Support for the fact that not all follow the “age-crime curve” is found in Stouthamer-Loeber, Wei, Loeber, & Masten

(2004). Those who do not follow the age crime curve are “generally the more seriously and frequently delinquent males, who have an early onset of offending” (Loeber, 1982; Loeber & Farrington, 1998; Moffitt, 1993; Moffitt, Caspi, Harrington, & Milne, 2002; Tolan, 1987; as cited in Stouthamer-Loeber et al., 2004). The underlying assumption is some kind of change that occurs between late adolescence and early adulthood leads most to decrease contact with the criminal justice system (Stouthamer-Loeber et al., 2004). A few individuals continue offending throughout adolescence and adulthood. Age is therefore an important demographic which needs to be included in career criminal research.

Life events may mediate the relationship between age and crime. Stouthamer-Loeber et al. (2004) attempted to determine the effect different life events may have on crime throughout adulthood. Life events are captured under “promotive/risk” variables which “refer to bidirectional correlates or predictors of both good and poor outcomes” (Stouthamer-Loeber, 2004). These factors encompass several aspects in an individual’s life including: the individual, family, peers, and neighborhood factors. One example is employment/schooling. Individuals who are employed or in school are significantly more likely to be desisters than persisters of serious delinquency. Environmental or socialization factors may have an effect on career criminality and should at least be controlled for when trying to determine causes of career criminality. Therefore, it is important to not only examine the relationship between age and criminality, but also to include life events.

Onset, Versatility, and Seriousness

Other important characteristics in describing and predicting career criminality are onset, versatility and seriousness/dangerousness of the crimes committed (DeLisi, 2005). Onset of criminal offending influences the likelihood of someone becoming a career

criminal. The earlier an individual shows serious antisocial behavior, the worse the individual's criminal career will be (DeLisi, 2005). Researchers have noted the significance of onset since Glueck & Glueck (1950; as cited in Piquero et al., 2003) claimed early onset is often the start of a lengthy and persistent criminal career. It is also important to note that individuals who have endured a life of crime will likely be more versatile, committing a large assortment of crimes throughout their lifetime. Gottfredson and Hirschi state (as cited in DeLisi, 2005, pg 40), "in spite of years of tireless research motivated by the belief in specialization, no credible evidence of specialization has been reported." This finding can be applied to career criminals in the fact that these individuals engage in crime for several years and are thus most likely to have committed a wide variety of crimes. Research on the relationship between career criminality, onset, versatility, and seriousness of crimes committed has been thoroughly researched within criminology.

Much research has been done on the significance of early onset in habitual offending. Ge, Donnellan, & Wenk (2001) focused on the developmental view of career criminal males. According to the review, Ge et al. (2001) claim, "one of the strongest predictors of persistent offending involves an early age at first offense." However, not as much is known about the relationship between early onset of arrest and psychopathy. Various factors in someone's life influence early onset of offending. Ge et al. (2001) found adverse family environments lack family attachment, cohesiveness, respect, and role modeling and this type of environment related to the beginning and duration of juvenile delinquency. In addition to the influence of environmental factors, several individualistic factors influence onset. Cognitive ability as measured by a combination of several achievement tests, early onset of alcohol use, and early age of first arrest all significantly predict offending throughout an individual's lifespan.

Overall, an individual's first arrest is one of the strongest predictors of later delinquency and several environmental and psychological factors may influence age of onset.

In addition to early onset of offending, career criminals are also likely to commit some of the most serious/violent crimes (DeLisi, 2005). One method of measuring seriousness and violence is examining the amount of time an individual spends incarcerated. According to DeLisi (2005), "career criminals spend a large part of their lives on probation, in jail, on bond, in prison, on parole, and generally in police custody". Violent offending and sheer number of offenses are positively correlated, as the number of violent offenses increases, so does the sheer number of offenses (Capaldi & Patterson, 1996; Farrington, 1983; Piquero, 1999; Tracy et al., 1990; as cited in Piquero, 2000). In conclusion, it seems current empirical results support the idea that chronic or habitual offenders have an early onset of offending, are more likely to be violent offenders, and are also more serious offenders. In general, the data support these claims across gender.

The Criminal Justice System and Career Criminals

Career criminals significantly affect society and the criminal justice system. Due to the large percentage of crimes committed by such a small number of offenders, it is in the best interest of society to focus almost all resources on controlling these career criminals (DeLisi, 2005). Following this stance, if officers are able to arrest and contain the small number of individuals who commit a larger percentage of crimes, crime rates around the nation would significantly decrease. Currently, there are attempts to survey entire populations to measure self-reported crime and to try to control crime. Surveys report anywhere from 30% to 50% of individuals have engaged in some kind of illegal activity, however most desist just as quickly as they begin crime and most of the crimes committed

are fairly harmless (DeLisi, 2005). Piquero (2000) agrees that “to the extent that criminal justice personnel can correctly identify (and selectively incapacitate) the small group of chronics, criminal activity could be substantially reduced.” The profound financial effect of career criminals on the criminal justice system should be incentive enough to better predict these individuals. Predicting career criminality could result in a more cost-effective justice system.

Control Strategies

Naturally, the goal of the criminal justice system is to accurately predict those individuals who will commit a crime in the future, or even better, predict which individuals will become career criminals at a young age before any crimes are committed. Piquero et al. (2003) introduces three general crime control strategies. The first method is prevention, which includes attempts to “reduce the number of nonoffenders becoming offenders.” The second method is career modification, which focuses on reducing the frequency or seriousness of the crimes committed by those individuals who already have pursued a criminal career. The third strategy is incapacitation, which focuses on removing individuals from society so they are unable to continue offending. The effectiveness of these methods will be maximized if the criminal justice system places individuals within each of the methods for which they would best succeed. Unfortunately, most current predictions are inadequate and decisions are made based on official data which only document those crimes that are a result of police contact, leading to a cyclical reasoning of trying to predict crime based only on previous crime. As a result, these prediction measures need to be rigorously tested and perfected to assist the criminal justice system to cost-effectively prevent individuals from continuing on a criminality stricken path. It is reasonable to believe that

incapacitation works best for those individuals with the highest frequency, the longest careers, and the most serious offenses, namely, career criminals (Piquero et al., 2003). Presently, a measure of the effect of incarceration is included which may help to better understand the incarceration method of control.

Career criminals who are diagnosed with psychopathy may be distinctly different from those career criminals without psychopathy. Therefore, it is important to understand the relationship between career criminality and psychopathy to better accommodate these individuals with the criminal justice system. Presently, it seems that those offenders with psychopathic traits are “not accommodated well by a “correctional” or rehabilitative approach to criminal justice as evidenced by their high recidivism rate” (e.g. Hemphill et al., 1998; Rice, Harris, & Comier, 1992; as cited in Porter et al., 2001). When offenders with psychopathic traits are released back into the community they have a much harder time surviving outside of prison than those who score lower on psychopathy measures. Therefore, measures of psychopathy may be quite meaningful and useful in trying to predict future criminal behavior and who should be released from prison.

Career Criminality and Predicting Recidivism

Much of the research on career criminality as a tool to predict reoffending is conducted via the developmental view of crime. In a review of the developmental view of crime, Sampson & Laub (2005) address several issues relating to persistent offending and desistance. These issues center around their main premise that “the conceptualization of crime is an emergent process reducible neither to the individual nor to the environment” (Sampson & Laub, 2005), but rather is a combination of the two. According to Sampson & Laub (2005), there are two main areas of research within “developmental criminology”. The

developmental perspectives range from believing that all individuals eventually commit fewer crimes as they age to claiming that a small subgroup of individuals continues to commit crimes throughout the lifespan. This has great theoretical importance when discussing career criminals. “Offenses eventually decline for all groups of offenders identified according to extant theory and a multitude of childhood and adolescent risk factors” (Sampson & Laub, 2005). Support for a combination of the two areas of research is found. In fact, those individuals in his/her first five years of offending are more likely to cease offending each subsequent year until the five-year-threshold. After the five-year-threshold, dropouts begin to stabilize. In addition, dropout rates do not begin to fall again until an individual has committed crimes for 20 years or more (Spelman, 1994; as cited in Piquero, 2003). However, there is something significant about an individual who is still committing crimes at age 50, 60, or even 70 regardless if the number of crimes committed at that age is less than the number of crimes the individual committed in his or her 20s. Therefore, the developmental view of criminology has helped to better understand offending patterns across the life course.

Research on habitual offending is focused on attempting to predict recidivism; however, there is another way to examine habitual offenders that may help the criminal justice system to determine individualized punishments. A different approach to predicting habitual offending has been taken. Kazemian & Farrington (2006) try to predict measures of desistance instead of predicting recidivism. To predict desistance, two different measures are formulated which include predicting how many years remain in a criminal career before desistance (residual career length; RCL) and predicting the remaining number of offenses before desistance (residual number of offenses; RNO). There are obvious implications for the

criminal justice system from determining desistance. An assessment of desistance could help to “identify ages where active offenders are most likely to cease offending and ages where they are most likely to persist” (Kazemian & Farrington, 2006). This approach to predicting habitual offenders could better inform the criminal justice system when determining sentencing and incapacitation.

Data used in the study by Kazemian & Farrington (2006) were collected from participants age 10 to 40 and their fathers up to age 70. Estimates of RCL and RNO were based on the number of convictions found in official records and were recorded for both the participant and his father. Results indicate a steady drop in RCL and RNO with age and this fluctuation was similar for both measures. Residual career length and residual number of offenses were significantly correlated. In addition, RCL declined steadily after each additional conviction for both fathers and sons; however, RNO did not decline as the number of convictions increased for fathers. This supports the idea that those who are still offending up to age 70 are more likely to continue offending. The fathers’ RCL may decline because of the age crime curve, but those who are still offending will likely continue until a very old age. Aside from the positive results indicated in Kazemian & Farrington (2006), the mixed results still supports the notion that it is still quite difficult to predict who will continue to commit offenses and who will desist. However, researchers should continue to strive to find better and more advanced prediction methods because of the policy implications such information will have in the criminal justice system.

Mechanisms Influencing Recidivism

Other factors or mechanisms may help explain or predict desistance of which some are addressed in Sampson & Laub (2005). Several turning points may play a role in

desistance from criminal activity including marriage or having spouse, military service, school, work, and a residential change. All of these factors together may have an impact on whether or not someone succeeds outside of incarceration. These factors may be a starting point for those in the criminal justice system who are trying to reduce recidivism. According to Sampson and Laub (2005), participation in these turning points helps the individual in the short-term become occupied with conventional activities and thus has a long-term effect of conformity to a socially acceptable lifestyle.

However, environmental factors are only one piece of the puzzle. There is also evidence supporting the notion that those individuals who scored in the top 20% on antisocial and other individual-level risk factors were at the highest risk for committing crimes throughout the lifespan (Blumstein, Farrington, & Moitra, 1985; as cited in Piquero et al., 2003). Moreover, other results indicate many chronic offenders can be identified at their first conviction in conjunction with information known about the individual at age ten (Blumstein, Farrington, & Moitra, 1985; as cited in Piquero et al., 2003). In contrast, Sampson & Laub (2005) "...do not see consistent evidence of differential age at termination based on prospective childhood risks." This is an important area to address when trying to better understand the connection between psychopathy and career criminals. In fact, it is necessary to comprehend the capacity childhood risk factors have in predicting habitual offending. If we are unable to find predictors of career criminality early in childhood, it will be difficult for the criminal justice system to take a more preventative approach. However, this approach should not deter anyone from trying to use some of these measures in predicting criminality because individual-level risk factors may help determine those individuals most fit for rehabilitation in the future.

Career Criminals and Psychopathy

Psychopathy research within criminology is still being conducted and is relatively scarce. Some researchers in criminology claim that research centered on personality characteristics is “empirically weak” and “marginalized” within the entire discipline of criminology (Schuessler and Cressey, 1950; Tennenbaum, 1977; Waldo and Dinitz, 1967; as cited in Vaughn & DeLisi, in press). This is unfortunate for the discipline as a whole because much of the current research on psychopathy and career criminality has proven to be quite fruitful. More recently, several studies have looked to reap the benefits of using psychopathy as a component of predicting career criminality.

Vaughn and DeLisi (in press) present a thorough review of recent research that has attempted to describe the relationship between career criminals and psychopathy. One study that attempted to explain the relationship between career criminality and psychopathy was conducted by Farrington (2006; as cited in Vaughn & DeLisi, in press). Farrington (2006; as cited in Vaughn & DeLisi, in press) found that the top 11 percent of the sample who scored ten or above on the PCL-R: SV (deemed the most psychopathic) had significantly more convictions, greater involvement in the criminal justice system, and were more likely to meet criteria for antisocial personality disorder. Furthermore, nearly half of those who were most psychopathic (48.5%) were chronic offenders. Vaughn and DeLisi (in press) looked to expand upon these findings. Differences were examined between career and non-career criminals with significant differences in mean psychopathy total scores and mean levels of general delinquency, victimization, violent and non-violent offending between the two

categories. Another important finding was that high psychopathy scores and high trauma scores significantly increases the probability of career criminal membership. Overall, these findings support a link between career criminality and psychopathy.

Another review of psychopathy and criminology is presented in Vaughn, Howard, & DeLisi (in press). The hypothesis is that most offenders limit their antisocial behavior to their adolescent years (Moffitt, 1993; as cited in Vaughn et al., in press); however, there exists a smaller subpopulation that continues criminality from a very young age into adulthood. The goal is then to identify and predict who will fall into this subpopulation. Vaughn et al. (in press) compared a sample based on psychopathy levels using the Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996) Short-Version (PPI-SV). Those who were part of the high psychopathy group had approximately a 260 percent greater self-reported delinquency level than the low psychopathy group. Psychopathy scores revealed a linear score-response where higher psychopathy scores were associated with increase in violent delinquency, non-violent delinquency, hostile aggression, and three forms of early onset (offending, police contact, and juvenile court referral). Moreover, psychopathic factors predicted delinquent careers even when controlling for demographic characteristics and other risk factors. These findings support the link between psychopathy and career criminality even when controlling for several demographic characteristics.

Other studies have found similar results in the predictive power of psychopathic measures. Again, prior attempts have found those who score high on psychopathic measures are more likely to continue violent offending throughout adulthood, indicating that an offender scoring high on psychopathy seems to have a fairly static capacity for violence (Harris, Rice, & Comier, 1991; as cited in Porter, Birt, & Boer, 2001). Porter, et al. (2001)

agree with Vaughn et al. (in press) and found those offenders who were high on psychopathic measures consistently committed more violent and non-violent crimes than those not scoring as high on psychopathy throughout the life span. Those offenders with high psychopathic scores also failed during community release programs significantly more quickly than low scorers. Overall, it is important to examine the effects of psychological factors, in general, when attempting to predict recidivism.

Career Criminality Summary

There are several areas of which the present study can expand upon the current literature, mainly, the incorporation of both sociological and psychological factors. Some of these factors include educational attainment, work experience, personality scales, and number of times incarcerated with parole. Few studies have had the plethora of information available to them to help predict career criminality and the present study plans to utilize a wide variety of information. In addition to psychopathy, several other personality measures will be included to attempt to predict career criminality and offending persistence. The present study also looks to combine the effects of early onset with the effects of family environment, cognitive ability, and early behavioral problems. Overall, this study will attempt to replicate and expand upon the conclusions presented throughout the previous researched noted.

Hypotheses

This study is somewhat exploratory in nature due to the void in the literature connecting these constructs together. There are several specific hypotheses that guide the research and data analysis. The focus of the research is on several areas that have not been studied as thoroughly as possible. Some of these areas include using several categories of

race instead of the dichotomous white: non-white, using the continuous variable age of first arrest instead of dividing individuals into juvenile onset or adult onset. Last, research often only includes either psychological measures or sociological measures.

This study attempts to incorporate both psychological and sociological measures. In doing so, a model for each of the dependent variables (career criminality, psychopathy, and offending persistence) will be developed through statistical analysis such that those factors which significantly increase the predictive power of that particular model will be included as a final model. After the best models are formulated, comparisons of shared variables within each of the models will be made. Comparing those factors included in more than one model will help to better explain the relationship between the three constructs being analyzed. The following hypotheses will help guide this analysis.

Hypothesis 1: Age of onset, race, and history of violence will significantly predict career criminality but not psychopathy.

Hypothesis 2: Age of onset, race, and history of violence will significantly predict persistence and career criminality.

Hypothesis 3: Personality type, level of integration, history of personality trait disturbance, history of personality pattern disturbance, and history of sociopathic personality will significantly predict psychopathy but not offending persistence.

CHAPTER 3: METHODS

Data

Data for this analysis were originally collected on young male offenders in 1964 and 1965 as they entered the California Youth Authority (CYA). During the screening process, data were collected on criminal history, including current offense, drug and alcohol use, psychological and personality variables, sentencing, and demographics such as age, education, work experience, and family structure. Data were also collected using several standardized psychological instruments: California Psychological Inventory, Minnesota Multiphasic Personality Inventory, California Achievement Test Battery, General Aptitude Test Battery, Army General Classification Test, and the Revised Beta Test. The present data analysis will utilize the Minnesota Multiphasic Personality Inventory and the California Psychological Inventory. After release from the CYA, subsequent arrest information for each offender was collected over the next twenty years. The data includes the offense arrested for, disposition, and dates of both arrest and parole for the twenty-year period.

“The purpose of the original study was to investigate the criminal histories of violent offenders. More specifically, the study examined the influence of drug use on offending, repeat offending over an extended time period, and the psychological characteristics of offenders. An important part of this research involved the use of standardized psychological instruments. The data gathered with these instruments facilitate the development of models to predict recidivism and violence and to construct parole supervision programs.

The research began in the early 1960s when California was developing innovative programs in juvenile justice, criminal justice, and other human services areas. Three Reception Guidance Centers (RGC) provided intake functions for California Youth Authority

(CYA) wards who were committed by the courts to the agency for custody and care. The RGC at the Deuel Vocational Institution (DVI) in Tracy, California processed the oldest group of CYA wards during this time, and the original data used in this research were generated and collected there. Original data were collected on 4,146 offenders in 1964 and 1965. The young adult offenders committed to the RGC-DVI spent six weeks at the center for diagnosis and assessment. During this time, they were tested individually and in groups, interviewed by case workers, given medical and dental examinations, and approximately one in ten was examined by a psychiatrist or a psychologist. The information generated during this assessment phase was systematically collected for research purposes by the clinical staff. A variety of psychological instruments were used in this process, some administered by the CYA or other government agencies as part of routine processing, others administered by the researcher. Several individuals were admitted each week. Each weekly intake group spent the first complete week in testing. For those who met a minimum reading achievement test, the researcher administered the Composite Opinion and Attitude Survey (COAS) instrument. The COAS is a combination of three other psychological instruments: the California Psychological Inventory, the Minnesota Multiphasic Personality Inventory, and the Inventory of Personal Opinions and measures various psychological characteristics of the offenders.

Over approximately the next 20 years, arrest records were collected for the individuals in the original sample. Arrest histories from the California Bureau of Criminal Identification and Investigation are available for 3,652 of the original 4,146 individuals, comprising a total of 54,175 arrest records. From the original data set, no arrest history records were available for 494 individuals. Of those for which no history is available, sixty-two died and their records are sealed. Upon request of the remaining 432, the California

Bureau of Criminal Identification and Investigation claimed they were “Unable to Locate” these records. The data were collected through self-enumerated questionnaires and from official records, primarily arrest records supplied by the California Youth Authority and the California Bureau of Criminal Identification and Investigation” (Wenk, 1998). The resulting data set includes responses from 2,486 offenders. Descriptive statistics for the independent variables included are presented in Table 1. Table 1 shows the number of individuals who fall within each category of the independent variable and the percentage it represents. There are fifteen independent variables included in the table. Table 2 presents a comparison of the percent of individuals classified by the dependent variable. As shown in Table 2, 87.4% of participants classified as psychopaths are also classified career criminals. In addition, 99.8% of persistent offenders are classified as career criminals and 53.5% of persistent offenders are classified as psychopaths. The dependent and independent variables are discussed below with a description of the methodology used.

Dependent Variables

Career Criminality

To assess career criminality the total number of arrests were compiled from official arrest records. Respondents were then divided into categories based on their number of arrests. The individuals were coded into one of two categories: (0) Not a Career Criminal (1-4 arrests) or (1) Career Criminal (at least 5 arrests). Over three-fourths of respondents were classified as a Career Criminal (86.4%); 13.6% were classified as not a career criminal.

Psychopathy or Antisocial Behavior

The psychopathic deviate (Pd) scale of the Minnesota Multiphasic Personality Inventory (MMPI) is an instrument for measuring psychopathy. The Pd scale generally

assesses social maladjustment and the absence of strongly pleasant experiences (McKinley & Hathaway, 1940; as cited in Greene, 2000). The *Manual* indicates individuals age 16 or older with at least six years of schooling should be able to complete the MMPI satisfactorily (Graham, 1990). Therefore, those individuals who were administered the MMPI before age 16 or those who did not have at least six years of schooling were eliminated from the analysis. Raw scores on the MMPI Pd were standardized and a cut-off score is then based on these standardized scores. A T Score of 76 or higher was used as the cut-off for high or marked scores. Individuals scoring 76 or higher represent those individuals with a psychopathic personality, asocial or amoral type. In general, some believe the scale measures rebelliousness where, higher scores represent those who are more rebellious. The highest scorers on the Pd express themselves in antisocial and criminal ways (Graham, 1990). Individuals were coded into one of two categories: (0) Non-psychopath (score ≤ 75) or (1) Psychopath (score > 75). About half were considered psychopathic (52%) based on the standardized cut-off score of 75 and the remaining individuals are considered less marked (48%).

Offending Persistence

To assess offending persistence the total number of times jailed with a parole date was calculated. From this calculation, a series was formulated following the pattern of arrest-jailed with parole-arrest-jailed with parole. Those individuals who had been arrested more than two times and jailed with parole two times or more were categorized as persistent offenders. This persistence variable may be able to better describe those individuals who are arrested for crimes serious enough to be jailed with parole which may be theoretically different from those individuals who are being arrested and released for less serious crimes.

Individuals were coded into one of two categories: (0) Not a Persistent Offender or (1) Persistent Offender. Nearly two thirds of the sample (65%) were not persistent offenders; the remaining 35% are classified as persistent offenders.

Independent Variables

Race and Ethnicity

Participants were originally coded into racial groups based on the following categories: Caucasian, Mexican American, African American, Asian American, or other. These were then coded to (1) Caucasian, (2) Mexican American, (3) African American, (4) Other, and (9) Missing. The use of “Other” category is designed to capture “responses such as Mulatto, Creole, and Mestizo” (US Census Bureau, 2000). Asian American was recoded as an “Other” response due to the low percentage of the sample classified in this category. The distribution of race in the sample was: Caucasian (57.3%), Mexican American (16.3%), African American (24.3%), and Other (2.1%).

Onset of Offending

Onset of offending was calculated from official arrest as the difference between the year in which the offender was first arrested and the year of his birth. Individuals were then categorized into either juvenile or adult onset. Individuals whose first arrest was before age 18 were categorized as (1) juvenile onset; individuals who were arrested at age 18 and older were categorized as (2) adult onset. Over half of the sample was classified as having a juvenile onset of offending (60.6%) and the remainder of the sample did not begin offending until adulthood (39.3%). For statistical purposes, onset of offending is used as a continuous variable representing the numerical age at which the individual was first arrested when binary logistic regression is used.

Marital Status

Participants were asked to report their current marital status. Responses were coded into seven categories: (0) Unknown, (1) Single (never married), (2) Married, (3) Divorced, (4) Divorced, remarried, (5) Separated, (6) Common-law, and (7) Widowed. Marital status was recoded because there were very few respondents in several of the categories. Marital Status was recoded to (1) Single (never married), (2) Married or Remarried, (3) Divorced/Separated/Widowed, (4) Common-law, (9) Unknown and missing. The unknown/missing category was deleted from analysis. Over three fourths of the sample was single (81.3%); 11.5% married or remarried; 4.0% divorced, separated, or widowed; and 3.3% of respondents married by common-law.

Parental Marital Status

In addition to their own marital status, participants were asked to report their natural parent's current marital status. Responses were coded into seven categories: (0) Unknown, (1) Single (never married), (2) Married, (3) Divorced, (4) Divorced, remarried, (5) Separated, (6) Common-law, and (7) Widower. Parental marital status was recoded because there were very few respondents in several of the categories. Parental marital Status was recoded to (1) Single (never married), (2) Married or Remarried, (3) Divorced/Separated/Widowed, (4) Common-law, (9) Unknown and missing. The unknown/missing category was deleted from analysis, leaving over half of the respondent's natural parents married or remarried (56.8%); 37.2% divorced, separated, or widowed; 5.8% single (never married); and 0.2% married by common-law.

Parents Death

Respondents were asked to report whether one or both of their parents were deceased. Responses were coded as: (1) Father deceased, (2) Mother deceased, (3) Both parents deceased, and (4) No death known. Parent's death was recoded because there is little variation in the sample. Parent's death was recoded into (1) has a least one parent deceased and (2) No death known. Over three fourths did not have any known parental death (81.4%) and the remaining had a least one parent deceased (18.6%).

Work Experience

Participants were asked to report their amount of work experience. Responses were coded: (0) None known, (1) < 6 months, (2) 6 months to 12 months, (3) 12 months to 18 months, (4) 18 months to 24 months, (5) Over 2 years, (6) No job specified, sporadic, short term or seas. Responses were recoded into two categories: (1) < 6 months, no job specified, sporadic, short term, or seas; (2) At least 6 months experience; and (9) None Known. The unknown/missing category was deleted from analysis. Over half of respondents had no job specified, sporadic, short term, seas, or less than 6 months experience (53.8%) and the remainder had at least 6 months of experience (46.2%).

Educational Attainment

Educational attainment was measured by asking participants to report their highest level of education completed. Responses were then coded into categorical responses. Respondents completing a given grade were combined to fit into one of the following categories: (1) 8th grade or lower achieved (2) 9th to 11th grade achieved (3) At least a high school graduate. Based on the responses 9.6% of respondents highest level of education completed was 8th grade or lower, 69.5% had completed at least 9th grade, but did not

graduate and 20.9% had at least a high school education. For statistical purposes, educational attainment remained as a continuous variable representing the last grade achieved in school during binary logistic regression.

History of Violence

Past history of violence was assessed and categorized into one of three responses: (0) None known, (1) Aggressive crime, no violence and (2) History of violence. Over half of respondents did not have any known past history of violence (60.1%); however, 17.1% had a past history of aggressive crimes, but no violence and one fifth had a history of violence (22.8%).

History of Drug Misuse

General history of drug misuse was examined and respondents were categorized into one of four categories: (0) None known, (1) Insignificant isolated experimentation, (2) Moderate involvement-more than experimentation, and (3) Severe involvement- long use/addiction. The unknown/missing category was deleted from analysis. Over three fourths of respondents did not have any known drug misuse (84.7%), 6.3% had insignificant isolated experimentation, 7.9% had moderate involvement-more than experimentation and 1.1% had sever-long use/addiction.

History of Psychosis

History of psychosis was determined via a single question in which responses were coded: (0) None known (1) Present, but no previous diagnosis of psychosis (2) Previous, but no present diagnosis for psychosis, and (3) Both present and previous diagnosis of psychosis. Responses were recoded into two categories: (0) None known (1) Present, previous, or both present and pervious diagnosis of psychosis. The majority of the sample did not have any

known history of psychosis (98.9%) and while 1.1% has or has been diagnosed with psychosis.

History of Neurosis

History of neurosis was assessed through a single question in which responses were coded: (0) None known (1) Present, but no previous diagnosis of neurosis (2) Previous, but no present diagnosis for neurosis, and (3) Both present and previous diagnosis of neurosis. Responses were recoded into two categories: (0) None known (1) Present, previous, or both present and previous diagnosis of neurosis. The majority of the sample did not have any known history of neurosis (98.8%) and the remainder of the sample has or has been diagnosed with neurosis (1.2%).

History of Personality Trait Disturbance

A single question determined history of personality trait disturbance and responses were coded: (0) None known (1) Present, but no previous diagnosis of personality trait disturbance (2) Previous, but no present diagnosis for personality trait disturbance, and (3) Both present and previous diagnosis of personality trait disturbance. A few examples of personality disorders classified in this category of personality trait disturbance are emotionally unstable personality, passive-aggressive personality, compulsive personality, and other individuals with personality trait disturbance not specified. Responses were recoded into two categories: (0) None known (1) Present, previous, or both present and previous diagnosis of personality trait disturbance. The majority of the sample did not have any known history of personality trait disturbance (93.0%) and the remainder of the sample has or has been diagnosed with personality trait disturbance (7.0%).

History of Personality Pattern Disturbance

History of personality pattern disturbance was determined through a single question in which responses were coded: (0) None known (1) Present, but no previous diagnosis of personality pattern disturbance (2) Previous, but no present diagnosis for personality pattern disturbance, and (3) Both present and previous diagnosis of personality pattern disturbance. Personality pattern disturbances include: inadequate personality, schizoid personality, cyclothymic personality, paranoid personality, and those individuals who have personality pattern disturbances not specified. Responses were recoded into two categories: (0) None known (1) Present, previous, or both present and previous diagnosis of personality pattern disturbance. The majority of the sample did not have any known history of personality pattern disturbance (96.9%) and the remainder of the sample consists of those individuals who have or have been diagnosed with personality pattern disturbance (3.1%).

History of Sociopathic Personality Disturbances

History of sociopathic personality disturbance was asked through a single question in which responses were coded: (0) None known (1) Present, but no previous diagnosis of sociopathic personality disturbance (2) Previous, but no present diagnosis for sociopathic personality disturbance, and (3) Both present and previous diagnosis of sociopathic personality disturbance. Examples of sociopathic personality include diagnosis of antisocial or dissocial reaction; sexual deviation; alcohol or drug addiction; sex offenders; and unspecified sociopathic personality. Responses were recoded into two categories: (0) None known (1) Present, previous, or both present and previous diagnosis of sociopathic personality disturbance. The majority of the sample did not have any known history of

sociopathic personality disturbance (97.1%) and the remainder of the sample had or had been diagnosed with sociopathic personality disturbance (2.9%).

History of Brain Damage or Epilepsy

History of brain damage or epilepsy was determined through a single question in which responses were coded: (0) None known (1) History of brain damage (2) History of epilepsy, and (3) History of both brain damage and epilepsy. Responses were recoded into two categories: (0) None known (1) History of brain damage, epilepsy, or both. The majority of the sample did not have any known history of brain damage, epilepsy, or both (99.2%) and the remainder of the sample had or had been diagnosed with brain damage or epilepsy or both (0.8%).

Personality Type

Individuals were classified into one of four categories based on the total score on the California Psychological Inventory (CPI). These four categories represent overarching personality types. The first category is (1) Alpha. Individuals classified as Alphas are seen as externally focused and norm-favoring. Those who use their personality to do good are leaders who push for social good; however, those who use their personality to do bad are defensive, apathetic and manipulative. The second group is (2) Beta. Betas favor norms, but are internally centered. At their best, Betas are models for insight and wisdom, but at their worst they conform, are fearful, and take the role of the follower. The third category is (3) Gamma. Gammas are skeptics and doubters who seek out problems with social norms. At their best, Gammas are innovative and challenging, but at their worst they are rebellious and disruptive. The fourth and final category is (4) Delta. Deltas focus on themselves. At their best, Deltas are thinkers and imaginative, but at their worst they are withdrawn and fragmented.

Level of Integration

Level of integration represents the level of integration the individual based on his overall score on the California Psychological Inventory. Scores ranged from 1 to 7 and individuals were categorized into one of seven categories. The categories include: (1) Poor integration, (2) Distinctly below average integration, (3) Below average integration, (4) Average integration, (5) Above average integration, (6) Distinctly above average integration, and (7) Superior integration. These categories were recoded into three categories: (1) Poor to below average integration, (2) Average integration, and (3) Above average to superior integration. After recategorization, nearly three fourths of the individuals (74.4%) were categorized as having poor to below average integration, 16% had average integration, and less than one in ten (9.6%) had at least above average integration.

Sociability Scale

The Sociability Scale (Sy) is a subscale of the California Psychological Inventory (CPI) and was designed to differentiate individuals who are outgoing and sociable from those who avoid social involvement (Mergaree, 1972). The current scale has thirty-six items. The Sy is a valid measure of sociability. Correlations between peer ratings of sociability and Sy scores ranged from $r = .42$ (Vingoe, 1968) to $r = .44$ in several different samples (Hase & Goldberg, 1967, as cited in Mergaree, 1972).

Responsibility Scale

The Responsibility Scale (Re) is another subscale of the CPI and was developed to identify people who were conscientious, responsible and believe life should be guided by reason (Gough, 1969b, as cited in Mergaree, 1972). Validity of the Re scale is debatable. Some have found correlations between Re scores and peer ratings of responsibility are not

significant while, others have found significant correlations ($r = .29$) between Re scores and peer ratings of responsibility (Megargee, 1972).

Self-control Scale

The Self-control scale (Sc) is also part of the California Psychological Inventory (CPI). This scale was designed to assess impulsivity and self-centeredness. The current scale contains fifty items. The validity of Sc is poorer than other scales in the CPI, with, correlations ranging from $r = .21$ to $.34$ between Sc scores and peer ratings of impulsivity in several different studies (Mergargee, 1972).

Dominance Scale

Another scale from the California Psychological Inventory (CPI) included in this analysis is the Dominance Scale (Do). The Do scale was constructed to identify strong, dominant, and influential individuals. Forty-six items comprise the current scale. The Do scale is one of the more highly validated CPI scales (Megargee, 1972). Correlations of Do scores and leadership have ranged from $.40$ to $.56$ (Megargee, 1972).

Method

Descriptive statistics were calculated for both the independent and dependent variables included in the model allowing for data cleaning and recoding of variables where appropriate. Next, cross-tabulations of career criminality, psychopathy, and offending persistence by each of the independent variables were calculated. Using Chi-Square analysis of the cross-tabulations, the significant relationships between career criminality, psychopathy, offending persistence and the independent variables were identified. A comparison of means was calculated for the continuous independent variables. Using a t-test

for equality of means, the significant relationships between career criminality, psychopathy, offending persistence and the continuous independent variables were identified.

Binomial logistic regression was used to assess the odds ratio of a respondent falling into the dependent variable response categories (e.g. Career Criminal/Not Career Criminal). Logistic regression is essentially an extension of multiple regression which is appropriate to use when the dependent variable is neither continuous nor quantitative (George & Mallery, 2000; as cited in Mertler & Vannatta, 2005). The use of binary logistic regression is limited to dependent variables with two outcome categories and thus can place individual cases or values into member or non-member status. More precisely, logistic regression specifies the probabilities of the particular outcome (e.g., “member” and “non-member”) for each subject or case involved (Mertler & Vannatta, 2005). Because individuals fell into one of two categories for each of the dependent variables binary logistic regression was used in this analysis.

Binary logistic regression allowed for the creation of a model for each of the dependent variables including career criminality, psychopathy and offending persistence. In addition, several follow-up logistic regression models were created. For the analysis, the theoretically justifiable reference categories for each variable was selected. Table 3 depicts the reference categories for the each of the categorical variables.

CHAPTER 4: RESULTS

Descriptive Findings

Cross-tabulations of the dependent variables by each independent variables and t-test for equality of means were completed. Table 4 presents the results from the cross-tabulations. It details the proportions of the independent variables by each of the dependent variables. Cross-tabulations and the use of chi-square tests are useful tools in better understanding the patterns of association among variables.

The cross-tabulation analysis of these data indicates multiple significant relationships with the dependent variables. Only the significant relationships, χ^2 with $p < 0.05$, will be reported. Some differences in the cross-tabulations may be due to the few respondents who were not career criminals (13.6%). Alternatively, these differences may be due to the response cells with relatively few respondents, for example, the response category “common-law” in the “parental marital status” variable. Although results should, therefore, be interpreted cautiously the pattern or relationship between the two variables in comparison is described below.

Three independent variables were significantly related to all three dependent variables. Onset of offending is significantly related to career criminality ($p < 0.001$), psychopathy ($p < 0.001$) and offending persistence ($p < 0.001$). Those individuals who begin offending before age 18 are more likely to be classified as a career criminal than those who begin offending in adulthood. This supports the notion that those individuals who start offending earlier are more likely to have compiled more arrests and are therefore, more likely to have at least five offenses. A similar pattern emerges when interpreting the relationship between psychopathy and age of onset. Those individuals who begin offending before age 18

are more likely to be classified into the psychopathy group than individuals who begin offending at age 18 and over. However, a somewhat different pattern exists regarding offending persistence; those who begin offending before age 18 have nearly an equal chance of being a persistent offender. However, over three fourths of those who begin offending at age 18 or older are not classified as persistent offenders. These findings suggest that onset of offending is related to both career criminality and psychopathy similarly. However, there are differences in significant predictors of offending persistence and career criminality. There are also differences between psychopathy and offending persistence.

Race was significantly related to all three dependent variables, career criminality ($p < 0.001$), psychopathy ($p < 0.001$), and offending persistence ($p < 0.001$). African Americans were the most likely to be classified as a career criminal, followed by Mexican Americans, then those who were placed in the “other” category, and finally Caucasians. However, Caucasians were most likely to be classified in the psychopathy group, followed by those in the “other” category, then African Americans, and lastly Mexican Americans. A third and different relationship emerges when analyzing the relationship between race and offending persistence. Mexican Americans were the most likely to be classified as persistent offenders, followed by African Americans, then Caucasians, and lastly, those placed in the “other” category. Again, career criminality, psychopathy, and offending persistence were significantly related to race, but differing patterns emerge when examining the relationship between race and career criminality compared with the relationship between race and offending persistence compared with the relationship between race and psychopathy.

Finally, personality type was significantly related to all three dependent variables, career criminality ($p = 0.024$), psychopathy ($p < 0.001$), and offending persistence ($p <$

0.001). The relationship between personality type and each of the dependent variables follows a similar pattern. Those individuals classified as Deltas were the most likely to be classified as career criminals, psychopaths, or persistent offenders. Gammas, followed by Betas, and finally, Alphas were then the least likely to be classified as career criminals, psychopaths, or persistent offenders, respectively.

No other relationships between the independent and dependent variables were significant for all three dependent variables. However, several variables were significant for both career criminals and persistent offenders or psychopathic individuals and persistent offenders. Those relationships significant for both career criminal and persistent offenders will be discussed first. Marital status was significant for both career criminality ($p = 0.035$) and persistent offenders ($p < 0.001$). Individuals married by common-law were most likely to be classified as a career criminal, followed by those who are single, then those who are married or remarried, and lastly those who are divorced, separated, or widowed. The same pattern was found for the relationship between offending persistence and marital status. Preliminary analysis for the hypothesis predicting the relationship between career criminality and offending persistence supports this hypothesis that the predictors and the pattern of the relationship between career criminality and marital status and offending persistence and marital status will be the same; however, the hypothesis did not predict marital status to significantly predict either career criminality or offending persistence.

Drug misuse was also significantly related to career criminality ($p < 0.001$) and offending persistence ($p < 0.001$) but not psychopathy. Those individuals who had a severe involvement- long use/addiction to drugs were most likely to be career criminals, followed by those with only moderate involvement, then those with isolated experimentation and

finally those with no known drug misuse. Again, the same pattern was found for the relationship between drug misuse and offending persistence. This supports the main hypothesis which states the variables significantly related to each construct are the same, and the relationship between the dependent variable and each of the independent variables follows a similar pattern for each of the relationships, respectively. However, drug misuse was not hypothesized to significantly predict offending persistence or career criminality.

Two other relationships were significant for only career criminality and not the other two independent variables. Educational attainment and career criminality were significantly related ($p = 0.043$). Those individuals having completed 8th grade or less were most likely to be classified as career criminals, followed by those who completed at least 8th grade, but did not graduate high school, and then those who had at least completed high school.

History of personality pattern disturbance and career criminality were also significantly related ($p = 0.012$). Those individuals who currently have, have had, or both have been diagnosed and are currently diagnosed with a personality pattern disturbance were more likely to be classified as a career criminal than those with no known history of such disturbance. These initial results support the hypothesis that predicts different factors will be included in the prediction of career criminality and psychopathy. However, it was hypothesized that history of personality pattern disturbance would significantly predict psychopathy and not career criminality.

Further, there were several significant relationships between independent variables and psychopathy which were also significant for offending persistence but not significant for career criminality. One such relationship was between work experience and psychopathy ($p < 0.001$) and work experience and offending persistence ($p < 0.001$). Those individuals who

had six months or less work experience were more likely to be classified in the psychopathy group than those individuals who had at least six months work experience. Similarly, those individuals who had six months or less work experience were more likely to be classified in the persistent offender group. Here, little or contrary support is found for the hypothesis that states the predictors for psychopathy and offending persistence will differ.

Another significant relationship existed between history of a personality trait disorder and psychopathy ($p < 0.001$) and history of personality trait disorder and offending persistence ($p < 0.001$) but not career criminality. It should be noted that this is different from personality pattern disorder which was significantly related to career criminality. Those individuals who were classified as having previously had, currently have, or both have previously and presently do have a personality trait disorder were more likely to be classified in the psychopathy group than those who with no known history of a personality trait disorder. Likewise, those individuals who were classified as having previously had, currently have, or both have previously and presently do have a personality trait disorder were more likely to be classified in the persistent offender group. Again, this finding does not support the hypothesis that the predictors of offending persistence and psychopathy are different. History of personality trait disorder was hypothesized to significantly predict psychopathy, but not offending persistence.

History of sociopathic personality disturbance was significantly related to only psychopathy ($p = 0.002$). Those individuals who were classified as having previously had, currently have, or both have previously and presently do have a sociopathic personality disorder were more likely to be classified in the psychopathy group than those who with no known history of a personality trait disorder. This finding supports the hypotheses that

predict the relationship between psychopathy and career criminality or offending persistence differ.

Two independent variables (history of neurosis and past history of violence) were significantly related to only offending persistence ($p < 0.001$). Those individuals classified as having previously had neurosis, currently have, or both have previously and presently do were more likely to be classified as persistent offenders than those with no known history of neurosis. Those individuals classified as having a history of violence were most likely to be classified as persistent offenders, followed by those who had committed an aggressive crime but did not have a history of violence, and finally, those with no known past history of violence of any kind. This preliminary finding supports hypothesis 3, which predicts different factors for offending persistence than psychopathy, and history of violence was hypothesized as being a significant predictor of offending persistence.

Several t-tests for equality of means were conducted to explain the relationship between the dependent variables and the continuous independent variables. Table 5 presents the results from the t-test for equality of means. Table 5 indicates the significant difference in means between each of the dependent variables by continuous independent variables. It should be noted that some variables included in the cross-tabulations were created from continuous variables and those variable were included in this analysis in their original continuous form. As depicted in Table 5, career criminals and non-career criminals, persistent offenders and non-persistent offenders and psychopaths and non-psychopaths differed significantly on a number of continuous independent variables.

Career criminals and non-career criminals differed significantly on mean values of age at first arrest [$t(2483) = 16.429, p < 0.001$]. Those who are career criminals had a lower

age at first arrest. Career criminals and non-career criminals also differed significantly on Responsibility (Re) scores [$t(424.2) = 4.983, p < 0.001$] Those classified as career criminals had lower Re scores.

Similarly, persistent and non-persistent offenders also differed on age at first arrest and Responsibility (Re) scores, as well as Self-control (Sc) scores. Persistent offenders had a significantly lower age at first arrest than non-persistent offenders [$t(1941.3) = 20.672, p < 0.001$]. Persistent offenders also scored significantly lower on both Re scores [$t(2484) = 5.796, p < 0.001$] and Sc scores [$t(2484) = 3.835, p < 0.001$].

Likewise, psychopaths and non-psychopaths differed significantly on age at first arrest, Responsibility (Re) scores, Self-control (Sc) scores, as well as Dominance (Do) scores and Sociability (Sy) scores. Similar to both career criminality and offending persistence, those individuals classified as psychopaths had a significantly lower age at first arrest than non-psychopaths [$t(2307.7) = 3.382, p < 0.001$]. However, it should be noted that although the difference was statistically significant, this finding may be a function of the large sample size and may not be of practical significance due to the small difference in age of onset between these two categories of individuals. Those individuals who were classified as psychopaths had significantly lower scores than non-psychopaths on the Re [$t(2441) = 9.492, p < 0.001$], Sc [$t(2441) = 10.652, p < 0.001$], Do [$t(2441) = 2.853, p = 0.004$], and Sy [$t(2441) = 2.563, p = 0.010$] scales. Again, support exists for each of the hypotheses stating each of the dependent variables shares at least two variables for which significant differences between means were found. However, there are a number of independent variables for which the dependent variables did not differ significantly.

While the chi-square tests and t-tests for equality of means are useful tools to describe the relationship between the dependent and independent variables, these tests are unable to control for other variables. It is not possible to describe how much variation in the dependent variables is due to each of the independent variables when they are all entered into the same model with the bivariate relationship. Therefore, additional analyses will follow using more sophisticated statistical analysis to examine each independent variable's effect controlling for all variables of interest.

Multivariate Findings

The effect of several different independent factors on predicting membership in three groups was assessed. The odds ratio is the probability that the event occurs compared to the probability that it does not. Odds ratios are a “multiplicative coefficient” where positive effects are greater than one, and negative effects are between one and zero (Long 1997; 82, as cited in Thurman, 2006). The significant odds of each dependent variable will be reported separately. In each model, the effect of each variable is reported. An illustrative example may help to better interpret the analysis. A comparison is conducted between males and females to compare the likelihood of being a democrat. Hypothetically the male odds ratio is three; this can be translated to males being three times more likely to be a democrat than females. Or perhaps the male odds ratio is 0.33, meaning males are one third as likely or three times less likely to be a democrat than females.

Multicollinearity Diagnostics¹

One major issue with forward logistic regression is the possibility of multicollinearity between predictor variables. Cohen (1987) formulated interpretations of correlations in psychological research, where a small correlation is $\pm .10$ to $.29$; a medium correlation is $\pm .30$ to $.49$; and a large correlation is $\pm .50$ to 1.00 . However, Cohen (1987) cautions that all cut-off categories similar to these are somewhat arbitrary and should be interpreted within the context and purpose of the correlation. These cut-off categories are followed in the analysis to determine the issue of multicollinearity.

A correlation matrix was developed for the three main models: career criminality, offending persistence and psychopathy. These correlation matrices are included in Appendix A. Overall, no correlations between predictor variables reached the large correlation category. Five comparisons out of 251 conducted fell into the medium correlation category according to Cohen's rubric (1987). The medium correlations for each model will be discussed separately.

Model 1: Career Criminality has only one correlation of medium strength. Sociability (Sy) scores were moderately negatively correlated with Responsibility (Re) scores ($r = -.381$). As Responsibility (Re) scores increase (indicating those who are conscientious, responsible, and believe life should be guided by reason) Sociability (Sy) scores decrease (indicating less social involvement and outgoingness).

Model 2: Psychopathy has two comparisons reaching medium correlation. Self-control was negatively correlated with level of integration. As Self-control scores increased

¹ Aside from bivariate correlation comparisons, SPSS logistic regression does not produce collinearity diagnostics however, VIF and TOL statistics to assess multicollinearity may be accessed with linear regression diagnostics in SPSS (Field, 2000).

the level of integration decreased ($r = -.352$). Self-control scores were also positively correlated with personality type, Gamma (external, norm-doubting) ($r = .421$). As Self-control (Sc) scores increased, the likelihood of being classified as a Gamma also increased. Responsibility (Re) scores were also negatively correlated with level of integration ($r = -.362$). As Responsibility (Re) scores increased level of integration decreased.

Model 3: Offending Persistence model has only one comparison reaching medium correlation status. Again, Responsibility (Re) scores and Sociability (Sy) scores are negatively correlated ($r = -.356$). As Responsibility (Re) scores increase (indicating those who are conscientious, responsible, and believe life should be guided by reason) Sociability (Sy) scores decrease (indicating less social involvement and outgoingness).

Overall, no comparisons are strong enough to indicate multicollinearity is a large problem. Very few comparisons reached the medium strength of correlation and of these comparisons most were closer to the small category than the large. However, it is still important when interpreting the results to note the effect multicollinearity may have on the results.

Examination of tolerance for the final models suggests that multicollinearity is not a problem; tolerance values greatly exceed (.1) the cutoff indicating serious multicollinearity, (Menard, 1995), in fact tolerance factors for all variables fall within the range of .471 and .989. Variance inflation factors for the measures also suggest that multicollinearity is not of concern, Myers (1990) argues that variance inflation factors with magnitudes greater than 10 are cause for concern; VIF statistics for the measures in this study are well below the cutoff, they fall within the range of 1.011 and 2.124.

Model 1: Career Criminality

Model 1 predicts whether respondents are not career criminals (0) or career criminals (1). Forward logistic regression was conducted to determine which independent variables are predictors of career criminality. Data screening did not yield any outliers needing removal. Regression results indicated the overall model fit of five predictors (race, age of onset, drug misuse, Sociability score (Sy) and Responsibility score Re) is questionable (-2 Log Likelihood = 1199.04) but was statistically reliable in predicting career criminality ($\chi^2 = 256.83$ (9), $p < 0.001$). The model correctly classified 87.3% of the cases. However, this model explained a small percentage of variation, Nagelkerke $R^2 = 0.24$. Regression coefficients for this model are presented in Table 6.

It should be noted that several other variables were entered into the model, but did not significantly ($p < 0.05$) change the model in predicting career criminality members and were therefore not included in the final model. Those factors which were incorporated, but not included in the final model were: marital status, parental marital status, parental death, work experience, highest grade achieved, history of violence, history of personality trait disorder, history of neurosis, history of personality pattern disorder, history of psychosis, history of sociopathic personality disorder, history of brain damage or epilepsy, personality type, level of integration, Self-control scores (Sc), Dominance scores (Do), Socialization scores (So), and Psychopathic Deviate (Pd) scores.

Model 2: Psychopathy

Model 2 predicts whether respondents will score low to moderate on a psychopathy measure (0) or high to marked on a psychopathy measure(1). Forward logistic regression was conducted to determine which independent variables are predictors of psychopathy. Data

screening did not produce any outliers needing removal. Regression results indicated the overall model fit of eight predictors (race, age of onset, Personality type, Level of integration, Responsibility score (Re), Self-control (Sc), history of personality pattern disorder, and history of sociopathic personality) is again questionable (-2 Log Likelihood = 2644.52) but was statistically reliable in distinguishing psychopathy ($\chi^2 = 218.38$ (17), $p < 0.001$). The model correctly classified 63.5% of the cases. However, the model accounted for a small percentage of the variance, Nagelkerke $R^2 = 0.13$. Regression coefficients for this model are presented in Table 7.

Several other variables were entered into the model, but did not significantly ($p < 0.05$) change the model in predicting psychopathy membership and were not included in the final model. Those factors incorporated, but not included in the final model were: marital status, parental marital status, parental death, highest grade achieved, history of violence, drug misuse, history of neurosis, history of personality pattern disorder, history of psychosis, history of brain damage or epilepsy, Sociability scores (Sy), Dominance scores (Do), and Psychopathic Deviate (Pd) scores.

Model 3: Offending Persistence

Model 3 predicts whether respondents show low offending persistence (0) versus high offending persistence (1). Forward logistic regression was conducted to determine which independent variables predict persistence. Data screening did not produce any outliers needing removal. Regression results indicated the overall model fit of nine predictors (race, age of onset, Responsibility score (Re), Sociability (Sy), history of personality pattern disorder, history of sociopathic personality, history of neurosis, history of personality trait disorder, and work experience) is questionable (-2 Log Likelihood = 1994.06) but

statistically reliable in distinguishing offending persistence ($\chi^2 = 359.33$ (13), $p < 0.001$). The model correctly classified 73.9% of the cases. However, a small percentage of the variance was explained, Nagelkerke $R^2 = 0.25$. Regression coefficients for this model are presented in Table 8.

Several other variables were entered into this model, but did not significantly ($p < 0.05$) change the model predicting offending persistent membership and were not included in the final model. Those factors were: marital status, parental marital status, parental death, highest grade achieved, history of violence, history of neurosis, history of psychosis, history of sociopathic personality disorder, history of brain damage or epilepsy, Self-control scores (Sc), Dominance scores (Do), and Psychopathic deviate (Pd) scores.

Hypothesis Testing

Hypothesis 1 (Table 10) states the factors that predict career criminality membership will differ from those factors that predict psychopathy. Specifically, career criminality will be significantly predicted by age of onset, race, and history of violence which would not significantly predict psychopathy. The results partially support Hypothesis 1. Race, age of onset, and Sociability scale score (Sy) significantly predicted both career criminal membership and psychopathy membership. When predicting career criminality, Mexican American ($B = 0.872$), African American ($B = 1.324$) and “Others” ($B = 1.899$) had significantly greater odds of being classified as career criminals than Caucasians. Additionally, “Others” are expected to most likely be included in the career criminal group, followed by African Americans, then Mexican Americans, and lastly Caucasians. When predicting psychopathy a much different pattern emerges. Caucasians and “Others” have the greatest odds of being classified in the high psychopathy group, African Americans ($B = -$

0.375) and Mexican Americans ($B = -0.465$) differ significantly from Caucasians with Mexican Americans being the least likely to be classified as having high psychopathy. The second factor included in predicting both career criminality and psychopathy is age of onset. A similar pattern is found in both prediction equations, as onset of criminality increases, the likelihood of being classified as a career criminal or as scoring highly on psychopathic scale decreases ($B = -0.490$ and $B = -0.054$, respectively). A similar pattern is found for both models when using the sociability scale score to predict career criminality membership ($B = 0.040$) and persistent offending membership ($B = 0.039$). As sociability scores increase, the odds of being included in these groups significantly increases. As described, there are some factors that significantly predict both career criminality and psychopathy, but there are also some variables not shared by both models.

Hypothesis 2 (Table 10) states that the same factors will significantly predict career criminality and offending persistence. The hypothesized factors include: age of onset, race, and history of violence. This hypothesis was partially supported. All five factors included in the model predicting career criminality were also included in the model predicting offending persistence. These factors included: race, age of onset, drug misuse, Sociability score (S_y), and Responsibility score (R_e). There were, however, more factors than these five that significantly predicted offending persistence and these factors include: work experience, history of personality pattern disturbance, history of personality trait disturbance, and history of neurosis.

Of the factors included in both models, a different pattern emerges between the models when examining race. Mexican Americans ($B = 0.362$) and African Americans ($B = 0.286$) had significantly greater odds of becoming a persistent offender than Caucasians.

Those falling in the “Other” category were least likely to be classified as a persistent offender, but this group was not significantly different from Caucasians. A much different pattern emerged with race and career criminality with those in the “Other” category ($B = 1.899$) being nearly seven times more likely to be classified as a career criminal than those in the Caucasian category, followed by African Americans ($B = 1.324$) and lastly, Mexican Americans ($B = 0.872$). Another predictor was included in both models but followed a slightly different pattern in each model is drug misuse. Individuals who had insignificant or isolated experimentation had similar odds of being classified as a career criminal as those with no known drug misuse. However, those with moderate involvement in drugs ($B = 0.988$) had significantly greater odds of being classified as a career criminal than those with no known drug misuse. Similarly, those who had severe involvement in drug use had an even greater likelihood of career criminality classification, but not significantly different from those with no known drug use. Slightly different results are found in the relationship between drug misuse and offending persistence. Much like the previous model, those individuals who had insignificant or isolated experimentation and those who had no known drug misuse had similar odds of being classified as a persistent offender. Again, those individuals with moderate involvement in drugs ($B = 0.436$) are more likely to be classified as a persistent offender than those with no known drug misuse. However a much different result is found when examining the relationship of those individuals with severe involvement ($B = 1.805$) in drug use. Those individuals in this category are over six times more likely to be classified as persistent offenders than those with no known drug misuse.

Similar results are found in each of the models for the three remaining predictor variables. As age of onset increases the odds of being classified as a career criminal ($B = -$

0.490) and as a persistent offender ($B = -0.409$) decreases. The higher the sociability scale score for both models, the higher the odds of being a career criminal ($B = 0.040$) and a persistent offender ($B = 0.039$). Finally, as the Responsibility scale score increases, the lower the odds of individuals being predicted as a career criminal ($B = -0.048$) or a persistent offender ($B = -0.030$).

The third and final hypothesis (Table 10) states that variables predicting psychopathy will differ from those predicting persistent offending. Personality type, level of integration, history of personality trait disorder, history of personality pattern disorder, and history of sociopathic personality disorder were hypothesized to predict psychopathy but not offending persistence. Again, partial support was found for this hypothesis. Four predictor variables were included in both models included: race, age of onset, personality trait disturbance, and responsibility scale score. Of these four factors, only state which one had a different pattern in each of the models. African Americans ($B = -0.375$) and Mexican Americans ($B = -0.465$) were less likely than Caucasians to be classified in the high psychopathy group. However, African Americans ($B = 0.286$) and Mexican Americans ($B = 0.362$) are more likely to be classified as persistent offenders.

Similar patterns are found for the remaining three variables included in both models. Those individuals who are classified as having a personality trait disturbance are twice as likely to be classified as a persistent offender ($B = 0.741$) and one and half times more likely to be classified in the high psychopathy group ($B = 0.391$) than those with no known history. In addition, as age of onset increases the odds of being classified in the persistent offender group ($B = -0.409$) and in the high psychopathy group ($B = -0.054$) decrease significantly. Last, as the responsibility scale score increased the lower the odds of individuals being

predicted as being in the high psychopathy ($B = -0.048$) or as a persistent offender ($B = -0.030$).

Overall, some support was found for each of the hypotheses. It is also interesting to note that Psychopathic Deviate (Pd) scores were included as a predictor of both career criminality and offending persistence, but did not significantly improve either model. Table 9 displays a list of all variables included in the multivariate analysis and denotes which variables were significant in each model. In addition, a brief summary of the main hypotheses and the support they received based on the statistical analysis is presented in Table 10.

Additional Analyses

Additional analyses were conducted to more precisely investigate the relationship between the three dependent variables, career criminality, psychopathy, and offending persistence. As Table 9 depicts, three variables are significant predictors of each of the dependent variables. To measure the effect each has on the dependent variable when no other variables are entered into the model was conducted by entering the three predictor variables into each of the models. Table 10 shows the three regression models, career criminality, psychopathy, and offending persistence. As shown, three variables were included to predict the dependent variables: age of onset, race, and Responsibility (Re) scale scores. When these three variables are entered into the career criminality each categories within all predictor were significant and a similar amount of variance is explained (Nagelkerke $R^2 = .219$) as compared to final model which emerged when all variables were available to be entered into the prediction equation. A similar analysis was run for the psychopathy model with all three variables entered into the prediction equation. All categories within each predictor variable

was significant except for the race category “Other”. Little variance is explained for the psychopathy model with the three variables (Nagelkerke $R^2 = .075$). Similar to the psychopathy model, in the offending persistence model, all categories within each predictor variable were significant except for the race category “Other”. However, a different pattern emerged when examining the amount of variance explained (Nagelkerke $R^2 = .232$) which is quite similar to the amount of variance explained when all variables were available to be entered into the model.

To better capture whether psychopathy has a moderating effect on which factors best predict career criminality, logistic regressions were conducted for the total sample divided into two groups: psychopaths and non-psychopaths. The first regression was conducted to predict career criminality membership from those who were classified as psychopaths. A second regression was conducted to predict career criminality membership from non-psychopaths. Forward logistic regression was conducted to determine which independent variables predict career criminality when the sample is of psychopaths compared to non-psychopaths.

Regression results indicate the overall model fit of four predictors (age of onset, level of integration, race, and Self-control score (Sc) for the career criminality model containing only psychopaths has a much better fit than the overall career criminal model (-2 Log Likelihood = 528.31) and is statistically reliable in distinguishing career criminality ($\chi^2 = 118.98$ (11), $p < 0.001$). The model correctly classified 88.2% of the cases. A small percentage of the variance was explained, Nagelkerke $R^2 = 0.25$. This variance explained is slightly higher than the original career criminality model. Regression coefficients for this model are presented in Table 11.

It should be noted that several other variables were entered into the model, but did not significantly ($p < 0.05$) change the model in predicting career criminality members from a psychopath sample and were not included in the final model. Those factors incorporated, but not included were: marital status, parental marital status, parental death, highest grade achieved, personality type, work experience, drug misuse, history of violence, history of neurosis, history of psychosis, history of personality trait disorder, history of personality pattern disorder, history of sociopathic personality disorder, history of brain damage or epilepsy, Responsibility scores (Re) Dominance scores (Do), and Sociability scores (Sy).

A second logistic regression was conducted to predict career criminality from those who were classified as non-psychopaths. Regression results indicate the overall model fit of five predictors (age of onset, race, Sociability score (Sy), Responsibility score (Re) and Self-control score (Sc) for the career criminality model containing only non-psychopaths has a much better fit than the overall career criminal model (-2 Log Likelihood = 686.83) and is statistically reliable in distinguishing career criminality ($\chi^2 = 150.73$ (7), $p < 0.001$). The model correctly classified 87.0% of the cases. A small percentage of the variance was explained, Nagelkerke $R^2 = 0.26$; however, this variance explained is slightly higher than the original career criminality model. Regression coefficients for this model are presented in Table 11.

It should be noted that several other variables were entered into the model, but did not significantly ($p < 0.05$) change the model in predicting career criminality members from a psychopath sample and were not included in the final model. Those factors incorporated, but not included were: marital status, parental marital status, parental death, highest grade achieved, personality type, level of integration, work experience, drug misuse, history of

violence, history of neurosis, history of psychosis, history of personality trait disorder, history of personality patten disorder, history of sociopathic personality disorder, history of brain damage or epilepsy, and Dominance scores (Do).

When comparing the two models predicting career criminality it is important first to note the difference in which predictor variables were included in the prediction equations. When predicting career criminality for the psychopathic sample, level of integration was significant but was not significant in predicting career criminality for the non-psychopathic sample. Those individuals classified as psychopaths with average integration are three times more likely to be classified as a career criminal ($B = 1.204$) than those with poor integration. In addition, Responsibility scores (Re) and Sociability scores (Sy) were significant in predicting career criminality for non-psychopaths but not psychopaths. As Responsibility scores (Re) for non-psychopaths increased, the likelihood of being classified as a career criminal ($B = -0.095$) decreased. However, as Sociability scores (Sy) for non-psychopaths increased the likelihood of being classified as a career criminal also increased ($B = 0.045$). Age of onset is included in both models and a similar pattern is found in both prediction equations, as age of onset increases, the likelihood of being classified as a career criminal for psychopaths and non-psychopaths decreases ($B = -0.500$ and $B = -0.528$, respectively). However, a much different pattern emerges when examining the relationship between Self-control scores (Sc) and career criminality membership for psychopaths compared to non-psychopaths. When predicting career criminality for psychopaths, as Self-control scores (Sc) increase, the likelihood of being classified as a career criminal decreases ($B = -0.048$); whereas, when predicting career criminality for non-psychopaths, as Self-control scores (Sc) increase, the likelihood of being classified as a career criminal increases ($B = 0.050$). A

different pattern also emerges when examining the relationship between race and career criminality for psychopaths and non-psychopaths. The career criminality prediction equation for psychopaths indicates African Americans are six times more likely to be classified as career criminals than Caucasians ($B = 1.794$); however, Mexican Americans have the highest odds ratio of being classified as a career criminals for non-psychopaths. Mexican Americans are three times more likely to be classified as a career criminal than Caucasians for non-psychopaths ($B = 1.240$).

Similar analyses were conducted to better capture whether psychopathy has a moderating effect on what factors best predict offending persistence, logistic regressions were conducted for the total sample divided into two groups: psychopaths and non-psychopaths. The first regression conducted attempted to predict offending persistence membership from those who were classified as psychopaths. A second regression conducted attempted to predict offending persistent membership from non-psychopaths. Forward logistic regression was used to determine which independent variables predict offending persistence when the sample is of psychopaths compared to non-psychopaths.

Regression results indicate the overall model fit of six predictors (age of onset, drug misuse, history of neurosis, history of personality pattern disorder, Sociability scores (Sy) and Responsibility score (Re) for the offending persistence model containing only psychopaths has a somewhat better fit than the overall career criminal model (-2 Log Likelihood = 918.16) and is statistically reliable in distinguishing career criminality ($\chi^2 = 194.930$ (8), $p < 0.001$). The model correctly classified 72.4% of the cases. A moderate percentage of the variance was explained, Nagelkerke $R^2 = 0.28$. This variance explained is

slightly higher than the original offending persistence model. Regression coefficients for this model are presented in Table 12.

It should be noted that several other variables were entered into the model, but did not significantly ($p < 0.05$) change the model in predicting offending persistence members from a psychopath sample and were not included in the final model. Those factors incorporated, but not included were: race, marital status, parental marital status, parental death, highest grade achieved, personality type, level of integration, work experience, history of violence, history of psychosis, history of personality trait disorder, history of sociopathic personality disorder, history of brain damage or epilepsy, Dominance scores (Do), and Self-control scores (Sc).

A second logistic regression was conducted to predict offending persistence for those who were classified as non-psychopaths. Regression results indicate the overall model fit of five predictors (age of onset, history of neurosis, history of personality trait disorder, history of violence, and drug misuse) for the career criminality model containing only non-psychopaths has a slightly better fit than the overall career criminal model (-2 Log Likelihood = 1045.95) and is statistically reliable in distinguishing career criminality ($\chi^2 = 147.50$ (8), $p < 0.001$). The model correctly classified 74.6% of the cases. A small percentage of the variance was explained, Nagelkerke $R^2 = 0.20$. This variance explained is slightly lower than the original offending persistence model. Regression coefficients for this model are presented in Table 12.

It should be noted that several other variables were entered into the model, but did not significantly ($p < 0.05$) change the model in predicting career criminality members from a psychopath sample and were not included in the final model. Those factors were: marital status, race, parental marital status, parental death, highest grade achieved, personality type,

level of integration, work experience, history of psychosis, history of personality pattern disorder, history of sociopathic personality disorder, history of brain damage or epilepsy, Sociability scores (Sy), Responsibility scores (Re), Self-control scores (Sc) and Dominance scores (Do).

When comparing the two models predicting offending persistence it is important first to note the difference in which predictor variables were included in the prediction equations for each model. When predicting offending for the psychopathic sample, history of personality pattern disorder, Sociability scores (Sy), and Responsibility scores (Re) were significant but were not significant in predicting offending persistence for the non-psychopathic sample. Those individuals classified as psychopaths with a history of personality pattern disorders are nearly three times more likely to be classified as a persistent offender ($B = 1.062$) than those without such a history. In addition, Responsibility scores (Re) and Sociability scores (Sy) were significant in predicting offending persistence for psychopaths but not non-psychopaths. As Responsibility scores (Re) for psychopaths increased, the likelihood of being classified as a persistent offender ($B = -0.047$) decreased. However, as Sociability scores (Sy) for psychopaths increased the likelihood of being classified as a persistent offender also increased ($B = 0.047$). Two variables significantly predicted offending persistence for non-psychopaths, but not psychopaths. History of violence and history of personality trait disorders were significant in predicting offending persistence for non-psychopaths but not psychopaths. Those individuals with a history of aggressive crimes, but no violence were one and a half times more likely to be classified as a persistent offender ($B = 0.407$) than those who has no past history of violence. In addition, those who a history of personality pattern disorders were nearly three times more likely to be

classified as a persistent offender ($B = 0.976$) than those who had no such history. Age of onset is included in both models and a similar pattern is found in both prediction equations, as age of onset increases, the likelihood of being classified as a persistent offender for psychopaths and non-psychopaths decreases ($B = -0.511$ and $B = -0.371$, respectively). History of neurosis is significant in predicting offending persistence for both psychopaths and non-psychopaths. For both prediction equations having a previous history of neurosis increases the odds of being classified as a persistent offender by nearly six times for psychopaths ($B = 1.777$) and over seven times for non-psychopaths ($B = 2.025$). Drug misuse was a significant predictor of career criminality for both psychopaths and non-psychopaths. A similar pattern emerged for the relationship between offending persistence and drug misuse for both models. Individuals with severe involvement—long-term use/addiction were eight times more likely to be classified as a persistent offender ($B = 2.102$) than those individuals with no drug misuse for psychopaths and four times more likely to be classified as persistent offenders ($B = 1.409$) than those individuals with no drug misuse for non-psychopaths.

CHAPTER 5: DISCUSSION

Less than 10% of the population is responsible for anywhere between 70% and 100% of some of the most severe crimes committed (DeLisi, 2005). Many tools exist that could help predict the 10% of those individuals who continue to offend regardless of the consequences encountered. These tools come from many different disciplines including: psychology, criminology, sociology, and even economics. Often researchers are armed with a limited arsenal and may use one or two tools to investigate a broad topic. However, it is necessary to utilize all available tools to better predict those individuals who fall within this 10% of the population. The purpose of the current study was to improve the understanding of the relationship between career criminality, psychopathy, and offending persistence. This relationship was assessed by examining the impact of several different predictor variables ranging from race to education to psychological measures on each of the dependent variables.

The present study has much to offer current research in this area. This is the first study on career criminals expanding the relationship between career criminality, offending persistence, and psychopathy using logistic regression. Previous studies have used linear regression and have not been able to categorize individuals into dichotomous categories. In addition, many researchers have been missing one of the key parts presently utilized. The current study was able to examine the effect sociological, psychological, and incarceration factors have on predicting future offending. The effects of sociological factors were measured from educational attainment, marital status, and social integration. In addition, the effects of history of neurosis, psychosis, personality trait disturbance, and personality pattern disturbance were a few of the psychological measures included. Last, several criminological

measures were included: age of onset, number of arrests compiled, number of incarcerations compiled, and type of offending.

An advantage of this research involved comparing all three models (career criminality, psychopathy and offending persistence). Most research in this area focuses on only one of the three dependent variables used. Criminology usually analyzes the predictors of career criminals and offending persisters; whereas, psychology usually investigates the predictors of psychopathy. This study attempted to bridge the theoretical gap between criminology and psychology. Comparing all three groups (career criminals, psychopaths, and persistent offenders) allowed inferences to be made on a larger scale. Inclusion of all three groups paints a clearer picture regarding crime prevention and policy making. Often decisions about parole or sentencing are made based solely on either psychological assessment or previous offending. However, by incorporating both of these constructs, predictive power of who will offend again will hopefully increase. Several policy implications may result from these findings.

This study shows the need for an expanded understanding of the relationship between psychology, sociology, and criminology when analyzing career criminality. In all three logistic models, race was a significant predictor of each of the dependent variables. However the relationship between race and each of the dependent variables differed. The “Other” category was most likely to be classified as career criminals, whereas, Caucasians were most likely to be classified as high on psychopathy, while Mexican Americans were most likely to be classified as persistent offenders. Although there is support for significant differences among racial categories, the relationship between race and the dependent variables does not follow the same pattern. A second variable, age of onset, significantly predicted all three

dependent variables. Here a similar pattern was found for each of the models. As age of onset increased, the likelihood of being categorized as a career criminal, persistent offender or psychopath decreased. The third and final variable significantly predicting each of the dependent variables is Responsibility score (Re). The findings indicate as Re scores increase (indicating more responsibility and dependability) the likelihood of being categorized as a career criminal, persistent offender, or psychopath decreases. These results indicate some shared characteristics between each of the dependent variables. When only the three shared variables are entered into each of the models predicting career criminality, psychopathy, and offending persistence similar pattern and results are found. Again, individuals in the “Other” category were most likely to be classified as career criminals, Caucasians as psychopaths, and Mexican Americans as persistent offenders. As both Responsibility scores (Re) increased the likelihood of being classified as a career criminal, psychopath, or persistent offender decreased. Similarly, as age of onset increased the likelihood of being classified as a career criminal, psychopath, or persistent offender decreased. A somewhat lower amount of variance explained for each model was found when only the three shared variables were entered. However, the results also indicate that there are significantly different predictors for each of the models. Future research should examine the true relationship between each of the variables more thoroughly.

To better understand the relationship between psychopathy, career criminality, and offending persistence, additional analyses were conducted. The effect of being classified as psychopath in predicting career criminality and offending persistence was analyzed. Both psychopathy and non-psychopathy models included age of onset, race, and Self-control scores (Sc) as significant predictors of career criminality membership. For both models, age

of onset had a similar effect, where, as age of onset increased the likelihood of psychopaths and non-psychopaths being classified as a career criminal decreased. However, a drastically different pattern emerged for Self-control scores (Sc). For psychopaths, as Self-control scores (Sc) increased the likelihood of being classified as a career criminal decreased, but for non-psychopaths as Self-control scores increased, so did the likelihood being classified as a career criminal. Interpretation of this finding is somewhat convoluted and would be based solely on speculation. More information is needed to better understand this relationship. Another difference found is in the relationship between race and career criminality based on psychopathy membership. African Americans are most likely to be classified as career criminals in the psychopathy model, but Mexican Americans are most likely to be classified as career criminals in the non-psychopathy model. Overall, psychopathy classification status at least partially moderates the effect predictors have on career criminality based on the differences found between those classified as psychopaths and those classified as non-psychopaths.

A similar analysis was conducted to analyze the relationship psychopathy membership has on offending persistence. Both psychopathy and non-psychopathy models included age of onset, drug misuse, and history of neurosis as significant predictors of offending persistence membership. For both models, age of onset had a similar effect, where, as age of onset increased the likelihood of psychopaths and non-psychopaths being classified as a career criminal decreased. Having a history of neurosis had a similar effect in both models. Individuals classified as having a history of neurosis had significantly greater odds of being classified as a persistent offender than those without a history of neurosis. Comparing psychopaths and non-psychopaths on drug misuse reveals an interesting pattern.

Psychopaths with a history of severe involvement-long term addiction were eight times more likely than those with no drug misuse to be classified as a persistent offender. Non-psychopaths with a history of severe involvement-long term addiction were also more likely to be classified as a persistent offender but individuals in this category were only four times more likely to be classified as a persistent offender than those with no drug misuse. Again, there is evidence that psychopath classification has a moderating effect on which predictor variables are significant predictors of offending persistence based on differences found.

There are several policy implications that arise from some of the results found from this analysis. First, it is important to note how psychopathy influences the classification of both career criminality and offending persistence. The moderating effect psychopathy has on offending persistence and career criminality could influence which control strategy will most effectively prevent crime for specific types of individuals. This distinction could help to match control strategies with different types of individuals and could be the missing link to selective crime control. Another policy implication stems from a major limitation of the study of over predicting who will be classified as a career criminal or persistent offender. Often many children or individuals display high-risk characteristics or exhibit behaviors similar to that which precede criminality but do not become offenders or are not offenders where, “any classification rule invoking the indicators will produce many false positives (Loeber and Dishion, 1983, as cited in Blumstein, Cohen, Roth, & Visser, 1986). Over-predicting those individuals who are psychopathic or are career criminals is an important issue associated with predictive decisions due to the effect of such classifications and it should be noted in future research. This ethical issue could influence risk assessment. Although this particular study is not intended to be the basis for risk assessment, the overall

goal would be just that, it attempts to predict which individuals will offend again.

Researchers and policy makers must work collaboratively to weigh the pros and cons of individual rights and societal benefit. These policy implications need to be addressed and researched more comprehensively to continue to attempt to match specific control strategies with specific types of offenders.

Although this study added to the literature on career criminality by incorporating psychopathy and offending persistence, it failed to show much support for the necessity of using psychopathy to predict career criminality or offending persistence. Psychopathy scores did not significantly better the models in predicting career criminality or offending persistence. There are several possible reasons for this. One reason may be associated with the measure of psychopathy. Measures of psychopathy often inadvertently include some type of offending measure within it. The MMPI Pd scale does not include such indicators which may weaken its predictive power, but this makes for a more valid measure of psychopathy and not more generally, antisocial behavior. In addition, the Pd is not expected to differentiate between all of those persons diagnosed with psychopathic personality, but rather it was developed so “it could identify about one-half or more of those clients diagnosed with psychopathic personalities.” (Greene, 2000) Another possible reason is psychopathy did not have a direct affect of offending persistence or career criminality, but moderated the effect of the predictor variables on the dependent variables. Evidence from this analysis supports this explanation. More thorough psychopathic measures are needed to better understand the relationship between career criminality, offending persistence, and psychopathy.

The current study does have limitations. First, the sample was derived from California, an urban state in the West that may have a crime rate not representative of that of

other states. Therefore, the current findings may not be generalizable to a state in the Midwest due to its lower crime rate. In addition, only official arrest records were available and therefore, results can only be extended to official criminal careers. Also, only records from California were kept for each of those in the sample. No arrest records for out of state convictions were documented. However, it is not unreasonable to assume that a large percentage of the individuals remained in California due to lack of mobility and resources to leave a large state. Therefore, the data set itself has a few limitations. Attempts to replicate these results in different areas of the country would improve the generalizability of the results.

A second limitation is no females were included in the study. Females and males may differ greatly on these measures and should be included whenever possible to get a more thorough understanding of the relationship between these three constructs. A comparison of males to females based on these three constructs would build on the current findings and allow for more generalizations to be made.

A third limitation is associated with the measure used for psychopathy. Ideally, a number of measures would be included to have more valid measure of this construct or a newer measure of psychopathy would have been ideal. Some may argue that the cut-off score of a T-score of 76 or above used to represent high psychopathy was too high, but theoretical support was found to justify this classification (Graham, 1990). Also, there are newer measures with higher validity and reliability that could be substituted for this measure of psychopathy. One example of such a measure is the Psychopathy Checklist-Revised. Future studies should attempt to measure psychopathy with one of these measures.

A fourth limitation of this study was the modest predictor of variance found within each of the logistic regression models. Unfortunately, the present study did not have much predictive power in explaining the variance of those who are career criminals compared to those who are not; of those who score markedly high on a Psychopathic Deviate (Pd) scale compared with those who do not; and predicting those who continue to offend despite enduring repeated jail time. One possible explanation for the small amount of variance accounted for could be the limited number of persons who were categorized as non-career criminals. Although we had a large sample, the sample consisted mostly of career criminals. This problem, however, is not uncommon and has been an issue with career criminality.

Binary logistic regression has some limitations and assumptions that must be addressed. However, this method was chosen because of the exploratory nature of the present study. In addition, classification into either group membership or not is similar to present classification systems for control strategies. This type of classification systems has the most practical application for risk assessment. Even though this method does not stringent assumptions that must be met, it is not without its limitations. The ratio of cases to variables included in binary logistic regression must be proportionate. This, however, does not seem to be a problem with this study due to the large number of individual cases in the analysis. Second, if any of the cells within each of the variables has too small of frequencies, the analysis may have little power. This again, does not seem to be violated in the current analysis, however there was a small percentage of the sample not categorized as career criminals which may have influenced the results. A third problem associated with logistic regression is multicollinearity among predictor variables. Correlation matrices were ran for each of the models. There were no correlations between the variables entered into each of the

models that would suggest a large correlation (Cohen, 1987) and therefore, it is assumed multicollinearity is not greatly influencing the results. Last, logistic regression models are quite sensitive to outliers. Therefore, the data were screened for outliers with values three standard deviations from the mean. No such cases were found and therefore no cases were removed based on this limitation.

The final limitation is the analysis methodology. Secondary data analysis did allow for the utilization of a longitudinal data set that would have been expensive, time-consuming, and difficult to collect. Because much of the data collection was done, more time was allotted for rigorous data analysis. In addition, secondary data analysis permitted comparisons across groups and time and allowed for the data to be used in a way that may not have been thought of by the original researchers. However, if time and cost were not an issue, preference a cross-sectional snapshot of current offenders and then use of official data records to retrospectively study their arrest and incarceration history would be preferred. This type of research plan would have allowed for the inclusion of more recent psychological measures such as the Psychopathy Checklist-Revised and possibly a clinical interview yielding in-depth psychological information. Furthermore, more sociological variables would have been included for better control and possibly more explanation of variance. Examples of additional sociological measures would include greater assessment of environment such as parental supervision and socioeconomic status. Last, more thorough measures of offending persistence would be included such as measures of exact length of jail time, amount of time in between multiple incarcerations, and what types of crimes were committed to receive jail time. Each of these measures would allow for a more complete view of who the persistent

offender is and how the individual differs from the career criminal who does not serve jail time.

Despite the limitations, there is still great potential for future exploration with this data set. For example, there are numerous psychological scales measuring personality and intelligence which could contribute to the current literature. Several more areas could be addressed to expand upon the current study. For example, several additional techniques could help better fit each of the models to each dependent variable. These techniques would require more model assessment, which may be possible with such a large data set. Detection of interaction effects would be an area of analysis that would improve upon my current analysis of main effects; however, preliminary analysis indicates interaction effects are not significantly influencing the current results. Further research should attempt to improve upon the limitations of this study. Researchers should consider the potential additional analysis available using this same data set. More improved, more reliable, and more valid measures of psychopathy, career criminality, and offending persistence would strengthen this study.

Career criminals are a detriment to society and have a destructive effect on those who encounter them. It is especially important to understand what factors determine career criminality. This research begins to identify a few possible factors that influence offending such as high psychopathy and high offending persistence. While it is important to predict career criminality, it is equally important to understand the relationship between career criminals, offending persistence and those with high psychopathy. As a result, further extensive investigation of this topic is crucial to understand how these and other variables influence offending patterns.

TABLES

Table 1: Descriptive Statistics

Variables	N	%
Educational Attainment		
8 th Grade or Lower	239	9.6
9 th to 11 th grade	1729	69.5
At least High School	520	20.9
History of Brain Damage or Epilepsy		
None known	2468	99.2
History of brain damage, epilepsy, or both	21	0.8
History of Drug Use		
None known	2108	84.7
Insignificant isolated experimentation	156	6.3
Moderate involvement-more than experimentation	197	7.9
Severe involvement-long use/addiction	28	1.1
History of Neurosis		
None known	2458	98.8
Present, previous, or both present and previous diagnosis	31	1.2
History of Personality Pattern Disturbance		
None known	2411	96.9
Present, previous, or both present and previous diagnosis	78	3.1
History of Personality Trait Disturbance		
None known	2314	93.0
Present, previous, or both present and previous diagnosis	175	7.0
History of Psychosis		
None known	2462	98.9
Present, previous, or both present and previous diagnosis	27	1.1
History of Sociopathic Personality Disturbances		
None known	2417	97.1
Present, previous, or both present and previous diagnosis	72	2.9
History of Violence		
None known	1496	60.1
History of violence or committing an aggressive crime	993	39.9
Level of Integration		
Poor to below average integration	1850	74.4
Average integration	398	16.0
Above average to superior integration	238	9.6
Marital Status		
Single	1950	81.3
Married or Remarried	275	11.5
Divorced/Separated/Widowed	97	4.0
Common-law	78	3.3
Onset of Offending		
Juvenile Onset	1509	60.6
Adult Onset	979	39.3
Parental Death		
Yes	464	18.6
No	2025	81.4
Parental Marital Status		
Single	122	5.8
Married or Remarried	1205	56.8
Divorced/Separated/Widowed	78	37.2
Common-law	5	.2

Table 1. Continued

Variables	N	%
Race/Ethnicity		
Caucasian	1427	57.3
Mexican American	406	16.3
African American	604	24.3
Other	52	2.1
Personality Type		
Alpha (external, norm-favoring)	315	12.7
Beta (internal, norm-favoring)	471	18.9
Gamma (external, norm-doubting)	552	22.2
Delta (internal, norm-doubting)	1148	46.2
Work Experience		
< 6 Months Experience	1132	53.8
> 6 Months Experience	974	46.2

Table 2. Comparison of Group Membership¹

		Career Criminality	
		Career Criminal (n = 2111)	Not a Career Criminal (n = 332)
Psychopathy	Psychopath (n = 1173)	87.4	12.6
	Not a Psychopath (n = 1270)	85.5	14.5
<hr/>			
		Career Criminality	
		Career Criminal (n = 2111)	Not a Career Criminal (n = 332)
Offending Persistence	Persistent Offender (n = 852)	99.8	0.2
	Not a Persistent Offender (n = 1591)	79.3	20.7
<hr/>			
		Psychopathy	
		Psychopath (n = 1173)	Not a Psychopath (n = 1270)
Offending Persistence	Persistent Offender (n = 852)	53.5	46.5
	Not a Persistent Offender (n = 1591)	45.1	54.9

¹ Cut-off scores for each of the variables is as follows: **Career Criminal** = 5 or more arrests; **Psychopath** T-score of 76 or higher on the Psychopathic Deviate (Pd) scale of the MMPI; **Offending Persistence**: Arrested and jailed with parole at least two times

Table 3. Reference Categories

Variable	Reference Category
Race	Caucasian
Drug Misuse	None known
Personality Type	Delta (internal, norm-doubting)
Level of Integration	Below average to poor integration
History of Personality Trait Disturbance	None known
History of Sociopathic Personality Disturbance	None known
History of Neurosis	None known
History of Violence	None known
Work Experience	< 6 months experience

Table 4: Significant Chi-Square Statistics for Dependent and Independent Variables

Variables		Career Criminality	
		Career Criminal	Not a Career Criminal
Race	Caucasian (n = 1427)	81.3	18.7
	Mexican American (n = 406)	93.1	6.9
	African American (n = 604)	93.9	6.1
	Other (n = 52)	90.4	9.6
	Career Criminal Total (n= 2486)	86.4	13.6
		Psychopathy	
		Psychopath	Not a Psychopath
	Caucasian (n = 1427)	52.4	47.6
	Mexican American (n = 406)	41.1	58.9
	African American (n = 604)	42.3	57.7
	Other	46.2	53.8
	Psychopathy Total (n = 2443)	48.0	52.0
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
	Caucasian (n = 1427)	30.2	69.8
	Mexican American (n = 406)	57.7	42.3
	African American (n = 604)	42.4	57.6
	Other (n = 52)	25.0	75.0
	Offending Persistence Total (n = 2486)	35.0	65.0
		Career Criminality	
		Career Criminal	Not a Career Criminal
Onset of Offending	Onset age 17 and under (n = 1507)	94.3	5.7
	Onset age 18 and over (n = 978)	74.3	94.3
	Career Criminal Total (n = 2485)	86.4	13.6
		Psychopathy	
		Psychopath	Not a Psychopath
	Onset age 17 and under (n = 1474)	51.4	48.6
	Onset age 18 and over (n = 968)	42.9	57.1
	Psychopathy Total (n = 2442)	48.0	52.0
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
	Onset age 17 and under (n = 1507)	47.6	52.4
	Onset age 18 and over (n = 978)	15.5	84.5
	Offending Persistence Total (n = 2485)	35.0	65.0

Table 4: Continued

Variables		Career Criminality		
		Career Criminal	Not a Career Criminal	
Personality Type	Alpha ¹ (n = 315)	12.0	16.9	
	Beta (n = 471)	18.6	21.4	
	Gamma (n = 552)	22.7	19.3	
	Delta (n = 1148)	42.4	46.8	
	Career Criminality Total (n = 2486)	86.4	14.6	
			Psychopathy	
			Psychopath	Not a Psychopath
		Alpha ¹ (n = 311)	8.0	17.1
		Beta (n = 461)	12.2	25.0
		Gamma (n = 543)	26.4	18.3
	Delta (n = 1128)	53.4	39.5	
	Psychopathy Total (n = 2443)	48.0	52.0	
		Offending Persistence		
		Persistent Offender	Not a Persistent Offender	
	Alpha ¹ (n = 315)	10.7	13.7	
	Beta (n = 471)	15.6	20.7	
	Gamma (n = 552)	25.6	20.4	
	Delta (n = 1148)	48.0	45.2	
	Offending Persistence Total (n = 2486)	35.0	65.0	
		Career Criminality		
		Career Criminal	Not a Career Criminal	
Marital Status	Single (n = 1950)	86.1	13.9	
	Married or Remarried (n = 225)	85.8	14.2	
	Divorced/Separated/Widowed (n = 97)	84.5	15.5	
	Common-law (n = 78)	97.4	2.6	
	Career Criminality Total (n = 2400)	86.4	13.6	
			Offending Persistence	
		Persistent Offender	Not a Persistent Offender	
	Single (n = 1950)	34.5	65.5	
	Married or Remarried (n = 225)	30.5	69.5	
	Divorced/Separated/Widowed (n = 97)	27.8	72.2	
	Common-law (n = 78)	55.1	44.9	
	Offending Persistence Total (n = 2400)	65.6	34.4	

Table 4: Continued

Variables		Career Criminality	
		Career Criminal	Not a Career Criminal
History of Drug Use	None known (n = 2105)	85.2	14.8
	Insignificant isolated experimentation (n = 156)	91.7	8.3
	Moderate involvement-more than experimentation (n = 197)	94.4	5.6
	Severe involvement-long use/addiction (n = 28)	96.4	3.6
	Career Criminality Total (n = 2486)	86.4	13.6
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
	None known (n = 2105)	32.8	67.2
	Insignificant isolated experimentation (n = 156)	37.2	62.8
	Moderate involvement-more than experimentation (n = 197)	51.8	48.2
	Severe involvement-long use/addiction (n = 28)	67.9	32.1
	Offending Persistence Total (n = 2486)	35.0	65.0
		Career Criminality	
		Career Criminal	Not a Career Criminal
History of Personality Pattern Disturbance	None known (n = 2409)	86.1	13.9
	Present, previous, or both present and previous diagnosis (n = 77)	96.1	3.9
	Career Criminality Total (n = 2486)	86.4	13.6
		Psychopathy	
		Psychopath	Not a Psychopath
Work Experience	< 6 Months Experience (n = 1162)	50.9	49.1
	> 6 Months Experience (n = 962)	42.4	57.6
	Psychopathy Total (n = 2074)	52.0	48.0
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
	< 6 Months Experience (n = 1132)	37.9	62.1
	> 6 Months Experience (n = 974)	29.0	71.0
	Offending Persistence Total (n = 2106)	66.2	33.8

Table 4: Continued

Variables		Psychopathy	
		Psychopath	Not a Psychopath
History of Personality Trait Disturbance	None known (n = 2269)	46.9	37.4
	Present, previous, or both present and previous diagnosis (n = 174)	53.1	62.6
	Psychopathy Total (n = 2443)	52.0	48.0
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
	None known (n = 2312)	33.0	67.0
	Present, previous, or both present and previous diagnosis (n = 174)	61.5	38.5
	Offending Persistence Total (n = 2486)	35.0	65.0
		Psychopathy	
		Psychopath	Not a Psychopath
History of Sociopathic Personality Disturbances	None known (n = 2372)	47.5	52.5
	Present, previous, or both present and previous diagnosis (n = 71)	66.2	33.8
	Psychopathy Total (n = 2443)	52.0	48.0
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
History of Neurosis	None known (n = 2455)	34.5	65.6
	Present, previous, or both present and previous diagnosis (n = 31)	74.2	25.8
	Offending Persistence Total (n = 2486)	35.0	65.0
		Offending Persistence	
		Persistent Offender	Not a Persistent Offender
History of Violence	None known (n = 1495)	31.0	69.0
	Aggressive crime, no violence (n = 426)	35.2	64.8
	History of violence (n = 565)	45.5	54.5
	Offending Persistence Total (n = 2486)	35.0	65.0

Note: Chi-Square significance at $p < .05$, percentages are reported for each
¹ Alpha (external, norm-favoring), Beta (internal, norm-favoring), Gamma (external, norm-doubting),
Delta (internal, norm-doubting)

Table 5. Significant T-Tests Statistics for Independent and Dependent Variables

Independent Variables	Dependent Variables	Mean	T	Sig.
Age at first arrest	Career Criminal (n = 2148)	16.40	16.429	.000
	Non-Career Criminal (n = 337)	18.49		
	Persistent Offender (n = 870)	15.52	20.672	.000
	Non-persistent offender (n = 1615)	17.31		
	Psychopath (n = 1173)	16.53	3.382	.001
	Non-psychopath (n = 1269)	16.85		
Responsibility (Re) Score	Career Criminal (n = 2149)	18.43	4.983	.000
	Non-Career Criminal (n = 337)	20.15		
	Persistent Offender (n = 870)	17.80	5.796	.000
	Non-persistent offender (n = 1616)	19.12		
	Psychopath (n = 1173)	17.60	9.492	.000
	Non-psychopath (n = 1270)	19.67		
Self-control (Sc) Score	Persistent Offender (n = 870)	17.49	3.835	.000
	Non-persistent offender (n = 1616)	18.53		
	Psychopath (n = 1173)	16.76	10.652	.000
	Non-psychopath (n = 1270)	19.49		
Dominance (Do) Score	Psychopath (n = 1173)	15.98	2.853	.004
	Non-psychopath (n = 1270)	16.69		
Sociability (Sy) Score	Psychopath (n = 1173)	18.66	2.563	.010
	Non-psychopath (n = 1270)	19.17		

Note: Only those comparisons significant at $p < .05$ are listed.

Table 6. Regression Coefficients for Model 1: Career Criminality

Independent Variables	<i>B</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Race					
Mexican American	0.872	12.158	1	.000	2.392
African American	1.324	26.854	1	.000	3.760
Other	1.899	4.050	1	.044	6.676
Drug Misuse					
Insignificant isolated experimentation	0.501	2.025	1	.155	1.650
Moderate involvement-more than experimentation	0.988	5.623	1	.018	2.685
Severe involvement-long use/addiction	0.992	0.897	1	.344	2.696
Sociability Scale	0.040	6.809	1	.009	1.041
Responsibility Scale	-0.048	10.631	1	.001	0.953
Age of onset	-0.490	98.610	1	.000	0.613
Constant	10.121				
Nagelkerke R ²	.238				
Coding of the dependent variable is as follows: 0= Not a Career Criminal 1= Career Criminal					

Table 7. Regression Coefficients for Model 2: Psychopathy

Independent Variables	<i>B</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Race					
Mexican American	-0.465	11.805	1	.001	0.628
African American	-0.375	9.768	1	.002	0.687
Other	-0.225	0.482	1	.487	0.799
Personality Type					
Alpha (external, norm-favoring))	-0.853	27.016	1	.000	0.426
Beta (internal, norm-favoring))	-0.612	18.319	1	.000	0.542
Gamma (external, norm-doubting)	-0.177	1.801	1	.180	0.838
Level of Integration					
Average integration	-0.633	10.784	1	.001	0.531
Above average to superior integration	-0.210	1.181	1	.277	0.810
Self-control Scale	-0.049	19.917	1	.000	0.952
Responsibility Scale	-0.048	14.386	1	.000	0.953
Age of onset	-0.054	5.893	1	.015	0.984
History of Personality Trait Disturbance	0.391	4.249	1	.039	1.479
History of Sociopathic Personality Disturbance	0.686	5.677	1	.017	1.986
Constant	3.431				
Nagelkerke R ²	.134				
Coding of the dependent variable is as follows: 0= Low to moderate Psychopathy 1= High to marked Psychopathy					

Table 8. Regression Coefficients for Model 3: Offending Persistence

Independent Variables	<i>B</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Race					
Mexican American	0.362	5.871	1	.015	1.437
African American	0.286	4.437	1	.035	1.331
Other	-0.024	0.004	1	.951	0.977
Work Experience	-0.295	7.035	1	.008	0.745
Age of onset	-0.409	171.388	1	.000	0.664
History of Personality Trait Disturbance	0.741	12.195	1	.000	2.098
History of Personality Pattern Disturbance	0.863	7.095	1	.008	2.369
History of Neurosis	2.035	10.563	1	.001	7.650
Drug Misuse					
Insignificant isolated experimentation	0.186	0.781	1	.377	1.204
Moderate involvement-more than experimentation	0.436	4.887	1	.027	1.546
Severe involvement-long use/addiction	1.805	12.390	1	.000	6.077
Sociability Scale	0.039	9.902	1	.002	1.040
Responsibility Scale	-0.030	7.333	1	.007	0.971
Constant	5.667				
Nagelkerke R ²	.245				
Coding of the dependent variable is as follows: 0= Low persistence 1= High persistence					

Table 9. Variables Included in the Multivariate Analysis

	Career Criminality Model	Psychopathy Model	Offending Persistence Model
Dominance (Do) Scores			
Educational Attainment			
History of Brain Damage or Epilepsy			
History of Drug Use	X		
History of Neurosis			X
History of Personality Pattern Disturbance		X	X
History of Personality Trait Disturbance			X
History of Psychosis			
History of Sociopathic Personality Disturbances		X	X
History of Violence			
Level of Integration		X	
Marital Status			
Parental Death			
Parental Marital Status			
Psychopathic Deviate (Pd) Score			
Onset of Offending	X	X	X
Race/Ethnicity	X	X	X
Responsibility (Re) Score	X	X	X
Self-control (Sc) Score		X	
Sociability (Sy) Score	X		X
Personality Type		X	
Work Experience			X

Note: Those marked with "X" indicate significance p<.05.

Table 10. Regression Coefficients for Shared Variables in all Three Models

Independent Variables	<i>B</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Model 1: Career Criminality					
Race					
Mexican American	0.980	19.106	1	.000	2.664
African American	1.067	30.696	1	.000	2.907
Other	1.437	4.477	1	.000	4.206
Responsibility Scale	-0.037	10.182	1	.001	0.964
Age of onset	-0.468	131.947	1	.000	0.626
Constant	10.336				
Nagelkerke R ²	.219				
Model 2: Psychopathy					
Race					
Mexican American	-0.618	26.926	1	.000	0.539
African American	-0.588	32.301	1	.000	0.555
Other	-0.359	1.535	1	.215	0.698
Responsibility Scale	-0.077	92.773	1	.000	0.926
Age of onset	-0.063	10.992	1	.000	0.939
Constant	2.644				
Nagelkerke R ²	.075				
Model 3: Offending Persistence					
Race					
Mexican American	0.300	5.544	1	.019	1.350
African American	0.275	6.104	1	.013	1.316
Other	-0.377	1.147	1	.284	0.686
Responsibility Scale	-0.027	9.834	1	.002	0.973
Age of onset	-0.470	312.010	1	.000	0.625
Constant	7.487				
Nagelkerke R ²	.232				
Coding of the dependent variables is as follows: 0= Not a Career Criminal 1= Career Criminal, 0= Low to moderate Psychopathy 1= High to marked Psychopathy, 0= Low persistence 1= High persistence					

Table 11. Regression Coefficients for Career Criminality Model: Comparing Psychopaths with Non-Psychopaths

Independent Variables	<i>B</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Model 1: Psychopaths					
Level of Integration					
Distinctly below average	0.394	1.485	1	.223	1.483
Below average	0.858	6.036	1	.014	2.357
Average integration	1.204	7.954	1	.005	3.334
Above average integration	-0.135	0.086	1	.770	.873
Distinctly above average integration	2.111	3.719	1	.054	8.257
Superior integration	0.515	.243	1	.622	1.674
Race					
Mexican American	0.530	2.174	1	.140	1.699
African American	1.794	14.421	1	.000	6.011
Other	2.965	2.171	1	.141	19.392
Self-control Scale	-0.048	4.515	1	.034	0.953
Age of onset	-0.500	47.120	1	.000	0.607
Constant	10.543				
Nagelkerke R ²	.245				
Model 2: Non-Psychopaths					
Race					
Mexican American	1.240	10.695	1	.001	3.457
African American	1.045	10.959	1	.001	2.842
Other	1.673	2.529	1	.112	5.141
Sociability Scale	0.045	4.276	1	.039	1.046
Responsibility Scale	-0.095	13.497	1	.000	0.910
Self-control Scale	0.050	6.435	1	.011	1.051
Age of onset	-0.528	54.573	1	.000	0.590
Constant	10.820				
Nagelkerke R ²	.259				
Coding of the dependent variables is as follows: 0= Not a Career Criminal 1= Career Criminal					

Table 12. Regression Coefficients for Offending Persistence Model: Comparing Psychopaths with Non-Psychopaths

Independent Variables	<i>B</i>	<i>Wald</i>	<i>df</i>	<i>p</i>	Odds Ratio
Model 1: Psychopaths					
History of Drug Use					
Insignificant isolated experimentation	-0.129	0.167	1	.683	0.879
Moderate involvement-more than experimentation	0.408	1.842	1	.175	2.504
Severe involvement-long use/addiction	2.102	6.577	1	.010	8.183
History of Neurosis	1.777	4.561	1	.033	5.941
History of Personality Pattern Disorder	1.062	5.467	1	.019	2.893
Sociability Scale	0.047	7.057	1	.008	1.048
Responsibility Scale	-0.047	8.642	1	.003	0.954
Age of onset	-0.511	113.378	1	.000	0.600
Constant	7.623				
Nagelkerke R ²	.281				
Model 2: Non-Psychopaths					
History of Drug Use					
Insignificant isolated experimentation	0.344	1.369	1	.237	1.410
Moderate involvement-more than experimentation	0.468	3.246	1	.072	1.596
Severe involvement-long use/addiction	1.409	4.468	1	.035	4.093
History of Violence					
Aggressive crime, no violence	0.407	3.981	1	.046	1.503
History of violence	0.390	4.485	1	.034	1.476
History of Neurosis	2.025	5.235	1	.022	7.572
History of Personality Pattern Disorder	0.976	8.498	1	.004	2.655
Age of onset	-0.371	77.717	1	.000	0.690
Constant	4.981				
Nagelkerke R ²	.199				
Coding of the dependent variables is as follows: 0= Not a Persistent Offender 1= Persistent Offender					

Table 13: Outcomes of Individual Hypothesis Tests

Hypothesis	Supported	Partially Supported	Not Supported
H1: Age of onset, race, and history of violence will significantly predict career criminality but not psychopathy		X	
H2: Age of onset, race, and history of violence will significantly predict persistence and career criminality		X	
H3: Personality type, level of integration, history of personality trait disturbance, history of personality pattern disturbance, and history of sociopathic personality will significantly predict psychopathy but not offending persistence		X	

Career Criminality Correlation Matrix

	Age of onset	Mexican American	African American	Other
Age of onset	1.000			
Mexican American	0.022	1.000		
African American	-0.016	0.109	1.000	
Other	-0.060	0.030	0.028	1.000
Insignificant isolated experimentation	0.011	0.011	0.013	-
Moderate involvement-more than experimentation	-0.009	-0.045	0.032	0.029
Severe involvement-long use/addiction	0.035	-0.032	0.002	0.002
Sociability Scale	-0.042	0.015	-0.108	0.016
Responsibility Scale	-0.043	0.052	0.089	0.013
	Insignificant isolated experimentation	Moderate involvement-more than experimentation		
Insignificant isolated experimentation	1.000			
Moderate involvement-more than experimentation	0.043	1.000		
Severe involvement-long use/addiction	0.015	0.015		
Sociability Scale	-0.028	-0.005		
Responsibility Scale	0.010	-0.023		
	Severe involvement-long use/addiction	Sociability Scale	Responsibility Scale	
Severe involvement-long use/addiction	1.000			
Sociability Scale	0.046	1.000		
Responsibility Scale	-0.026	-0.381	1.000	

Psychopathy Correlation Matrix

	Alpha (external, norm-favoring)	Beta (internal, norm-favoring)	Gamma (external, norm-doubting)
Alpha (external, norm-favoring)	1.000		
Beta (internal, norm-favoring)	0.274	1.000	
Gamma (external, norm-doubting)	0.289	0.165	1.000
Distinctly below average integration	0.049	0.102	-0.107
Below average integration	0.051	0.167	-0.151
Average integration	0.022	0.142	-0.197
Above average integration	-0.034	0.137	-0.192
Distinctly above average integration	-0.043	0.144	-0.180
Superior integration	-0.020	0.055	-0.141
Mexican American	-0.040	-0.008	-0.052
African American	-0.130	0.009	-0.180
Other	-0.008	0.007	-0.036
At least 6 months work experience	-0.026	-0.052	-0.006
History of personality trait disorder	0.034	0.013	-0.002
History of sociopathic personality disorder	-0.022	-0.026	-0.042
Responsibility Scale	-0.287	-0.240	-0.117
Self-control Scale	0.112	-0.222	0.421
	Distinctly below average integration	Below average integration	Average integration
Distinctly below average integration	1.000		
Below average integration	0.593	1.000	
Average integration	0.542	0.640	1.000
Above average integration	0.428	0.525	0.547
Distinctly above average integration	0.345	0.439	0.465
Superior integration	0.234	0.306	0.330
Mexican American	0.040	0.067	0.074
African American	0.063	0.098	0.141
Other	0.073	0.043	0.078

Psychopathy Correlation Matrix: Continued

	Distinctly below average integration	Below average integration	Average integration
At least 6 months work experience	-0.018	-0.033	-0.039
History of personality trait disorder	0.004	-0.015	0.003
History of sociopathic personality disorder	0.030	0.030	0.019
Responsibility Scale	-0.143	-0.287	-0.367
Self-control Scale	-0.234	-0.348	-0.393
	Above average integration	Distinctly above average integration	Superior integration
Above average integration	1.000		
Distinctly above average integration	0.406	1.000	
Superior integration	0.287	0.253	1.000
Mexican American	0.076	0.074	0.087
African American	0.141	0.138	0.113
Other	0.074	0.042	0.016
At least 6 months work experience	-0.033	-0.012	0.016
History of personality trait disorder	-0.038	-0.040	0.001
History of sociopathic personality disorder	0.034	-0.015	0.028
Responsibility Scale	-0.357	-0.297	-0.203
Self-control Scale	-0.330	-0.338	-0.270
	Mexican American	African American	Other
Mexican American	1.000		
African American	0.288	1.000	
Other	0.100	0.188	1.000
At least 6 months work experience	0.002	0.006	0.021
History of personality trait disorder	0.035	0.012	0.015
History of sociopathic personality disorder	0.009	-0.010	0.026
Responsibility Scale	0.115	0.125	0.012

Psychopathy Correlation Matrix: Continued

	Mexican American	African American	Other
Self-control Scale	-0.194	-0.236	-0.045
	At least 6 months work experience	History of personality trait disorder	History of sociopathic personality disorder
At least 6 months work experience	1.000		
History of personality trait disorder	0.021	1.000	
History of sociopathic personality disorder	0.022	-0.067	1.000
Responsibility Scale	0.025	-0.013	-0.018
Self-control Scale	-0.003	-0.002	-0.009
	Responsibility Scale	Self-control Scale	
Responsibility Scale	1.000		
Self-control Scale	-0.210	1.000	

Offending Persistence Correlation Matrix

	Age of onset	Mexican American	African American	Other
Age of onset	1.000			
Mexican American	0.074	1.000		
African American	0.080	0.282	1.000	
Other	0.001	0.110	0.112	1.000
At least 6 months work experience	-0.012	-0.031	-0.035	0.033
Insignificant isolated experimentation	0.009	-0.003	0.008	-0.044
Moderate involvement-more than experimentation	0.054	-0.109	0.021	-0.103
Severe involvement-long use/addiction	-0.005	-0.019	0.012	0.008
History of neurosis	-0.007	0.022	0.017	0.014
History of personality trait disorder	0.081	0.078	0.066	0.022
History of personality pattern disorder	0.063	0.008	-0.013	-0.031
Sociability Scale	-0.012	0.038	-0.162	-0.015
Responsibility Scale	-0.039	0.033	0.150	0.029

	At least 6 months work experience	Insignificant isolated experimentation	Moderate involvement-more than experimentation
At least 6 months work experience	1.000		
Insignificant isolated experimentation	-0.010	1.000	
Moderate involvement-more than experimentation	-0.043	0.094	1.000
Severe involvement-long use/addiction	-0.044	0.032	0.040
History of neurosis	-0.015	0.023	0.010
History of personality trait disorder	0.003	0.030	0.001
History of personality pattern disorder	0.088	0.026	0.000
Sociability Scale	0.004	-0.017	0.002
Responsibility Scale	-0.015	0.031	0.009

Offending Persistence Correlation Matrix: Continued

	Severe involvement- long use/addiction	History of neurosis	History of personality trait disorder
Severe involvement-long use/addiction	1.000		
History of neurosis	-0.020	1.000	
History of personality trait disorder	0.003	0.006	1.000
History of personality pattern disorder	0.017	-0.002	-0.042
Sociability Scale	0.052	0.095	0.014
Responsibility Scale	-0.040	-0.023	-0.038
	History of personality pattern disorder	Sociability Scale	Responsibility Scale
History of personality pattern disorder	1.000		
Sociability Scale	0.047	1.000	
Responsibility Scale	0.000	-0.356	1.000

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