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**DELINQUENCY: A TRAJECTORY ANALYSIS OF AFRICAN-AMERICAN
MALES**

By

Wyatt Brown

B.S., University of Alabama at Birmingham, 2008

A Thesis

**Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
In Partial Fulfillment of the Requirements
for the Degree of**

Masters of Science in Administration of Justice

Department of Justice Administration

University of Louisville

Louisville, Kentucky

May 2011

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Delinquency: A Trajectory Analysis of African-American Males

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A Thesis Approved on

April 14, 2011

By the following Thesis Committee:

Thesis Director (George Higgins)

Richard Tewksbury

Linda Bledsoe

DEDICATION

This thesis is dedicated to my mother

Theresa Brown

whose life lessons have proved invaluable.

ACKNOWLEDGMENTS

I would like to thank my professor and mentor, Dr. George Higgins for his guidance and cooperation throughout this study. I would also like to thank my mentor, Dr. J. Heith Copes, for his input and guidance. I would like to thank my committee members Dr. Richard Tewksbury and Dr. Linda Bledsoe for their dedication and service. Finally, many thanks to my family in Fairhope, Alabama: Charles Brown, Joseph Brown, Jonathan and Erin Brown, Heather Brown, Drew and Julieanna Baggett.

ABSTRACT

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MALES

Wyatt Brown

April 14, 2011

The initial goals of this study include locating and identifying the taxonomic groups mentioned in Moffitt's (1993) (i.e. life-course persistent offenders, adolescent-limited offenders) using data from the National Longitudinal Survey 1997 (NLSY97). Further, this study compares the social demographics with the predictions of Moffitt (1993, 1994) as her theory describes race, particularly those of African-American offenders. This study also examines the role of parental and peer relationships and their effect on the offender disparity among the typologies defined by Moffitt (1993). This study explores one hypothesis: there is a relationship between social bonds, particularly peer association and admittance into Moffitt's (1993) trajectory groups. The results of this study find that of the variables tested, peer relationships are particularly influential in predicting criminality. These findings support prior research on delinquent peer group association and criminality (Bjerregard & Lizotte, 1995; Dishion, Patterson, & Griesler, 1994; Patterson, 1993; Patterson, Dishion & Yoerger, 2000; Lacourse et al., 2003).

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CHAPTER 1: INTRODUCTION

In the United States, the racial disparity in criminal behavior has and continues to be a criminological issue among researchers and policy makers alike. Dating back to the beginning of the 20th century, racial and ethnic differences in the rates of both juvenile delinquency and adult crime have repeatedly been observed (Hawkins, Laub, & Lauritsen, 1998). In 2008, African-American men were over represented in the jail population as follows: the total jail population consisted of 42.5 percent White men and 39.3 percent African-American men while in the total U.S. population only about 6 percent were African-American men and 28 percent were white men (Jung & Yamatani, 2010). According to Mauer (2006), almost one-third of African-American males born in the beginning of the twenty-first century will spend some time behind bars, compared to 6% of White males.

In self report data, African-Americans continue to be overrepresented among those involved in both criminal offending (Piquero, Farrington, & Blumstein, 2003, Wilson & Herrnstein, 1985) and criminal victimization (Walker, Sphon, & DeLone, 2004). According to the Federal Bureau of Investigation (1999), African-American youths are also overrepresented in official crime data. The arrests of white juveniles (under age 18) constituted 71 percent of all juvenile arrests compared with 26 percent for black youth. African-American youths are overrepresented given the fact that they make up 15 percent of the juvenile population compared with 79 percent white and 5 percent other races.

Despite these findings, the subject of racial disparity among criminal offenders is still very controversial. Sampson and Wilson (1995) point out there is limited research on the topic of race as it relates to criminal behavior because scholars fear they could be labeled racist or be accused of blaming the victim due to social injustices. Other have researched the topic and have found the crime race disparity is loosely related to social constructs/cultural differences (Bursik, 1988; Byrne and Sampson, 1986), lack of developed relationships (Sampson & Wilson, 1995), or institutionalized racism (Moffitt, 1994). Little research explains the race-crime disparity while offering substantial support toward any single criminological theory (Sampson & Wilson, 1995). Because African-Americans are largely overrepresented among criminal offenders and the research related to racial-disparity is inconclusive, there exists need further study. Further research of typologies in race and criminal offending may enable policy makers to implement programs focused on racial discrepancies that affect criminality (e.g., social constructs, relationships, and institutionalized racism).

The goals of the present study include identifying the taxonomic groups mentioned in Moffitt's (1993) taxonomy among a sample of African-American males, and examining whether social bonds and peer relationships are correlates of the trajectory groups. The idea of defining distinctive trajectory groups is an intriguing concept for both developmental criminologists as well as policy makers (Sampson & Laub, 2003). These various groups (i.e., typologies) are founded on the idea that various factors at different ages in life point to a particular criminal trajectory. In theory, this would allow criminal trajectories to be identified early, utilizing various methods or tests, to recognize the causes or "risk factors" of a

particular trajectory and if needed, early intervention may begin. A result of a successful intervention could impact a group's criminal trajectory thus, possibly reducing the likelihood of deviant behavior. Gibbons (1985) recognizes that typologies may also be useful in identifying the best way to manage various groupings of established offenders. Moffitt (1993) argued that two types of offenders may be present in longitudinal data (i.e., life-course persistent, adolescent-limited). Life-course persistent offenders are likely to offend over the span of their lives, and adolescent limited offenders are likely to offend only during adolescence.

Gottfredson and Hirschi (1990) concluded that a strong criminological theory should be able to address the three strongest correlates of criminal behavior: age, race, and gender. As crime relates to age, the typical offender's criminal life-course is consistent with the aggregated age-crime scale in that one's criminal career begins and increases steadily during the early teens peaking from 17-21 and declines to almost nonexistent by thirty (Gottfredson & Hirschi, 1990). Most studies show that males commit significantly more crimes than females (Cernkovich & Giordano, 1979; Gottfredson & Hirschi, 1990). Finally, race is a strong correlate for criminal behavior because African-Americans are highly overrepresented among both criminal offenders and victims (Piquero & Brame, 2008). With these issues, the present study uses data from the National Longitudinal Survey of Youth 1997 (NLSY97). This period of life is significant because it provides an opportunity for the respondents to begin to follow the age-crime curve. That is, some offenders (i.e., adolescent limited) around the age of

20 to 25 years will begin to desist from crime, while life-course persistent offenders will continue to commit crime (Moffitt, 1993; 2003). Thus, this period allows this study to examine the beginning, apex, and decline of the age-crime curve. Further, this study intends to compare the social demographics with the predictions of Moffitt (1993, 1994) as her theory describes race, particularity roles of parental and peer relationships and their effect on the offender disparity among the typologies defined by Moffitt (1993, 1994, 2003). This expands Moffitt's (1994) original proposal that explains how social bonds (i.e., parental relationships) and peer relationships are only directly related to life-course persistent offenders.

Empirical tests of Moffitt's dual taxonomy have directly tested the role of race. To date, when studies have examined the role of race, they have used it as a control measure and not as a central feature of the study. For instance, two studies show that this is an issue (Donnellan, Ge, & Wenk, 2000; Piquero, Moffitt, & Lawton, 2005). Piquero, Moffitt, and Lawton (2005) provide two cogent rationales why this is the case. First, few of the dominant theories of crime adequately explain the cause of racial discrepancies. Second, racial information has tended to be omitted in longitudinal data collected on criminal activity over the life course creating a gap in the literature.

Thus, the present study is important for two reasons. First, this study will help fill the gap in the literature pertaining to understanding the trajectories of offending of African-American males. Second, Cohen, Piquero, and Jennings (2010) found that the introduction and implementation of programs aimed at

reducing the number of high-rate life-course persistent offender groups would reduce government spending on law enforcement by more than \$200 million. In other words, this study will have policy implications.

The next chapter defines and summarizes Moffitt's (1993) original dual taxonomy. This chapter further reflects the evolution of her theory to encompass causes for racial disparity in criminal offending. Finally, the next section explains the role of social bonds in deviant behavior, particularly the variation among races.

CHAPTER 2: THEORETICAL PERSPECTIVE

Moffitt (1993) argued that two types of offenders are possible--life-course persistent and adolescent-limited. Moffitt (1993) argued that close to 5 percent of the population are responsible for the majority of criminal offending. Further, Moffitt (1993) concludes that traits of this small portion of society are similar to the offender typology she refers to as life-course persistent offenders. Life-course persistent offenders have neurological psychological deficits (e.g., low birth weight, malnutrition, attachment disorder, etc.), and they reside in environments that are stressful. Their caretakers are unlikely to seek the treatment needed to overcome their neurological problems and develop properly; thus, resulting in an individual who struggles with socialization which often leads to failures in many life domains such as education, romantic-relationships and employment (Moffitt, 1993). Life-course persistent offenders exhibit both antisocial and criminal behavior early during the life-course and continue throughout life. Furthermore, they will offend at a high rate, and be responsible for more serious and violent behaviors, and desistance is unlikely. The behavior and causal factors of Moffitt's second typology, adolescent-limited, are different.

Moffitt (1993) proposed that adolescent-limited offenders describe the majority of criminal offenders. This group, labeled adolescent-limited is defined by those that commit a small number of crimes during adolescence.

Adolescence-limited offending is the product of peer social context not pre-natal factors and failed socialization. Moffitt (1993) proposes that adolescents naturally seek a more mature status, and because of various societal constraints the adult social status sought after arrives at a much later age. This lapse creates a “maturity gap” where teens that are biologically capable of being adults are asked to refrain from many of the positive features of adult life. Typically, during the High School years, the “maturity gap” is entered where adolescents are surrounded by peers with a similar dilemma. This peer-social context helps facilitate coping with the maturity gap. Deviant acts, often symbolic of adult social status, are common for adolescence-limited offenders including smoking, drinking alcohol, drug use, sexual behavior, etc. Once reaching adulthood, most adolescence-limited teens begin to decrease their involvement in delinquent activities because they now have full access to the adult behaviors that they did not before. Further, adolescent-limited offenders do not encounter the neuropsychological problems that are characteristic of life-course persistent offenders thus, learned social and verbal skills help facilitate their desistance.

Since the introduction of Moffitt’s dual taxonomy, other typologies have been considered (e.g., abstainers (Moffitt et al. 1996), low-level chronic offenders (Moffitt, 2003). The low-level chronic offender was first identified by Nagin et al. (1995) to account for a trajectory group that exhibited extreme antisocial behavior during childhood, but surprisingly only a low level of deviant behavior during adolescence (Moffitt, 2003). The rates of offending for low-level chronic offenders during adolescence and adulthood are too low to be granted admission into life-

course persistent offenders but do not seem to follow the aging out trait of the adolescent-limited offenders. Many studies have detected low-level chronics but the personality characteristics of this rogue group have rarely been explored (Moffitt, 2003).

Moffitt (1994) confronted the issue of racial disparities in criminal behavior and explained how her taxonomy applies to both Whites and African-Americans. Further, African-Americans are at an increased risk for life-course-persistent offending due to institutionalized racism and poverty (Moffitt, 1994). Poor African-American families in the United States are less likely to receive prenatal care, therefore, infant nutrition is lower, and exposure to infectious or toxic agents is greater, all of which increase the risk for neuropsychological problems. Parental bonds may also be weaker in poor African-American families due to stress caused by undesirable living environments, which could result in poor parenting practices.

The lack of these familial bonds could also inhibit proper socialization. The prevalence of adolescent-limited offenders among African-Americans may also be caused by the overexposure to others whose lifestyles are consistent with the life-course persistent typology (Moffitt, 1994). This exposure may motivate African-Americans not prone to deviance to mimic delinquent ways of others to gain status or respect. Moffitt (1994) goes on further explaining that on average the “maturity gap” is greater for African-Americans than for Whites. Reasons listed for this are tied to societal constraints possibly caused by institutionalized racism such as the exposure to a desirable jobs (Moffitt, 1994). Better explained,

the inability to attain a desirable job will in turn inhibit the likelihood of achieving the desired adult social status therefore extending the window for adolescent-limited offending. This potential “maturity gap” may also contribute to some vagueness between the offender groups of African-Americans (Moffitt, 2003). Moffitt (2003) explains that because African-American adolescent limited offenders may be misrepresented in the life-course persistent group because their criminal career extends further into adulthood than other population groups.

One unexplored area in Moffitt’s taxonomy may be differences in parental bonding. In Moffitt’s (1993) dual taxonomy, parental bonds are mentioned infrequently, but further revisions seem to highlight how they may be a significant factor in explaining racial disparity among criminal offenders among adolescent limited offenders (Moffitt, 2003). Social bonds, as they relate to Moffitt’s (1993) taxonomy have rarely been explored directly. Moffitt (1993:693) explains:

Control theories of delinquency point to weak social controls, such as lax supervision by adults or weak bonds to parents, as the causes of burgeoning delinquency (e.g., Hirschi, 1969). The database for control theories is a cross-sectional correlation between measures of delinquency and supervision in adolescent samples. Research has yet to demonstrate that parenting practices change before teen’s interest in problem behavior begins. More critical, control theories do not explain why antisocial behavior per se is the outcome of weakened social control systems. Why do unsupervised teens not mow lawns for the elderly? Why don’t weakly attached youths gather in groups to do more algebra homework? In answer, social control theories rely on the philosophical assumption that all humans are inherently antisocial; crime must thus emerge spontaneously, by default, whenever social controls are weakened. A taxonomic theory cannot afford the luxury of this philosophical premise about the universal mainsprings of human behavior. I offer instead an answer that links individual motivation for crime to its ecological context: Algebra homework does not make a statement about independence; it does not assert that a youth is entitled to be taken seriously. Crime does. How do pubescent teens come to know about antisocial behavior and its effects? I have suggested that they vicariously observe the life-styles of

the life-course persistent youths in their midst. Control theories assert that, in the absence of any such models, innocents would invent delinquency.

Controversially, Moffitt (1993) later explains that family attachment bonds could be used as a measure in assessing life-course persistent offenders (Moffitt, 1993:695). Further, Moffitt (1994) explains that racial disparity in crime is related to weakened family and attachment bonds among African-American families due to institutionalized racism. Moffitt's (1993, 1994) inquiries regarding social bonds in both adolescent limited and life-course persistent offenders is a rarely explored topic and part of the base for this study.

Another aspect to consider is how peer association effects both adolescent-limited and life-course persistent offenders. Moffitt (1993) maintains that peer association may only be relevant to adolescent onset offenders because the cause of life-course persistent offending is created much earlier during child development. Moffitt (2003) further recognizes that the adolescent-limited path is strongly related to delinquent peers.

Much research has lead to support for Moffitt's typologies but a few studies have shown some inconsistencies while analyzing one of the known major crime correlates, race. Although the importance of strong familial relationships has been mentioned in Moffitt's theory, little has been written on the strength, importance, and role of these familial bonds of both adolescent-limited and life-course persistent offenders. The next chapter reviews prior studies conducted employing Moffitt's (1993) taxonomy, social bonds, or peer association.

CHAPTER 3: LITERATURE REVIEW

Moffitt's Dual Taxonomy

As with most leading theories of criminology, the introduction of Moffitt's dual-taxonomy of criminal offending has enticed many research studies testing various tenets of the theory (for a review, see Moffitt, 2003). Several researchers have evaluated the role of neuropsychological deficits or cognitive abilities in relation to Moffitt's theory (Donnellan et al., 2000; Ge, Donnellan, & Wenk, 2001; Lipsitt, Buka, & Lipsitt, 1990; Lynam et al., 1993; Moffitt, 1997; Moffitt et al., 2001; Moffitt, Lynam, & Silva, 1994; Piquero, 2001; Sigurdsson, Gudjonsson, & Peersen, 2001; White, Moffitt, & Silva, 1989). Many of the studies conducted often conclude in support of her theory, particularly the existence of her defined typologies.

Moffitt, Lynam, and Silva (1994) conducted the first longitudinal study testing if neuropsychological status can predict antisocial behavior. This study was conducted on several hundred (n=1037) New Zealand males ages 13-18 using various sources, including self-report, police and courts. The data were part of Dunedin Multidisciplinary Health and Development Study. This study concluded that poor neuropsychological scores do have a relationship with the early onset of delinquency. They found that poor neuropsychological scores were positively correlated to persistent male offending. Particularly, life-course-

persistent antisocial development emerges from early neurodevelopment issues and family adversity risk factors (Moffitt et al. 1996; Moffitt et. al. 2001; Moffitt, Lynam, & Silva, 1994; Piquero, 2001; Tibbetts & Piquero, 1999). Specifically, neuropsychological status predicted male offending that began before age thirteen and continued throughout but no relationship was found to offenses committed after the age of 13. Also with the Dunedin data they found high levels of neuropsychological defect in a small group of males whose childhood development bears some resemblances to the life-course-persistent offender group (Henry, Moffitt, & Silva, 1992). Although significant conclusions can be formed, this study avoided various components critical to properly evaluating Moffitt's taxonomy (i.e. biosocial interactions, violent offences) (Piquero, 2001).

Piquero (2001) employed data from the Philadelphia biosocial correlates of crime study (Denno, 1990) to build upon the limitations of prior studies focusing on neurological risk and various manifestations of life-course persistent offending. This study examined how low scores on intelligence tests predicted early offending, violent offending, serious offending, and chronic offending. In conclusion, this study offered strong support that low intelligence, particularly verbal scores, was significantly related to the four predictors of life-course persistent criminal behavior as proposed by Moffitt (1993). One limitation in this study was the potential racial bias of using intelligence testing as a measure.

Employing data from three samples drawn from the Longitudinal Study of Biosocial Factors Related to Crime and Delinquency in Pennsylvania (Denno, 1990), Tibbetts and Piquero (1999) were able to find support for two tenets of

Moffitt's taxonomy as they relate to biosocial environments. First, low birth weight combined with an undesirable familial environment has a relationship with early onset delinquency. Secondly, low socioeconomic status and low birth weight are also predictors for early onset delinquency. Both of these findings are characteristic of factors in biological/familial relationship used to predict life-course persistent offending.

The first longitudinal study evaluating the shaping of criminal activity as it is related to cognitive ability was presented by Donnellan et. al. (2000). Data from the California Youth Authority (CYA), found that cognitive abilities identified differences between adolescence-limited and life-course-persistent offenders, but no relationship was found between cognitive abilities and crime types among African-Americans (Donnellan et al. 2000). Using the same data Ge, Donnellan, and Wenk (2001) examined patterns of chronic offenders within the CYA offenders. Ge et al. (2001) found a relationship between adverse familial environments and juvenile delinquency which is consistent with other longitudinal studies (Farrington, 1995; Loeber, Stouthamer-Loeber, Kammen, & Farrington, 1991; Wolfgang et al., 1972). Further, Ge et al. (2001) found that cognitive abilities were influential on long term criminal careers but not to juvenile delinquency. This finding is supportive of Moffitt's (1993) assertion that during the juvenile years it may be difficult to distinguish between life-course persistent and adolescent limited offenders.

Aguilar, Sroufe, Egeland, and Carlson (2000) conducted a 20 year longitudinal prospective study examining antisocial behavior within a sample of

culturally diverse youth from a low socioeconomic background. This study focused on neuropsychological measures using a variety of tests designed to measure intellectual functioning, temperament, and socioemotional background. The study concluded that temperament and neuropsychological measures were not significant factors in differentiating the early-onset persistent offenders from adolescent-onset youth during early years but supported the idea of two separate offender trajectories in other areas tested. Furthermore, other findings suggested that environmental factors may affect the relationship between neuropsychological abnormalities and offender typologies. The results offered some support Moffitt's taxonomy suggesting the possibility of offender trajectories, and these trajectories are expected in this study.

The studies above have supported Moffitt's (1993) taxonomy, but less research has been used to examine race differences in offending over time. Race is a significant factor to Moffitt's theory because she claims that African-Americans are overrepresented in both adolescent-limited and life-course persistent offenders (Moffitt, 1994). Because African-Americans are more criminogenic than other races there is a need for understanding racial differences. According to Piquero, Moffitt, & Lawton (2005) longitudinal research has been very slow to examine the influences of antisocial behavior across race for two reasons. First, few of the dominant theories of crime adequately explain the cause of racial discrepancies. Second, racial information has tended to be omitted in longitudinal data collected on criminal activity over the life course. The massive inconsistency of criminal behavior between races alone identifies the

need for a strong criminological theory that will account for and provide insight to a better understanding of this sociological phenomenon.

Elliott (1994) employed data from the National Youth Survey and found that almost twice as many African-Americans as Whites continued violent offending after age 21. In attempting to understand the causes to this observation Elliott (1994) suggested that African-Americans have fewer opportunities to transition into adult roles than Whites; African-Americans are somewhat stuck in adolescence and reflect behaviors consistent with adolescence. The cause for this delay could be from attachment disorder. Those able to make the transition into adult roles (i.e. desirable work, family roles) tend to stray away from delinquency and crime with age. This idea is consistent with Moffitt (1994) in that it reinforces Moffitt's idea that African-Americans experience a larger maturity gap than whites.

In a study conducted using 2,000 California Youth Authority inmates, Donnellan, Ge, and Wenk (2000) designated the typologies of Moffitt's dual taxonomy. They found on numerous cognitive ability measures life-course persisters scored lower than adolescent-limited offenders in both Whites and Hispanics but not in African-Americans. The findings for Whites and Hispanics are consistent with Moffitt's hypotheses but African-Americans are not. One possible explanation is that even African-Americans with high cognitive ability may deviate if alternative opportunities are not achieved. Put differently, an educated African-American male unable to find desirable work may experience

various social or economy restrains, characteristic to being African-American, may cause one to resort to deviant behavior.

The Baltimore sample of the National Collaborative Perinatal Project tested for race differences in the developmental process suggested that trigger life-course-persistent offending (Piquero, Moffitt, & Lawton, 2005). This study concluded that although African-Americans experienced a higher level of risk factors, the two predicting factors, low birth weight and adverse familial environments were the same across races. This study reinforces Moffitt's prediction that African-Americans experience the same developmental factors as Whites but the greater exposure of African-Americans to certain risk factors explains the inflation of criminal behavior (Higgins et al., 2010).

The prior studies conducted exploring Moffitt's (1993) typologies and race have found some support for the aspects mentioned in Moffitt (1994). The aspects mentioned in Moffitt (1994) are that African-Americans are overrepresented in a life-course persistent typology as well as adolescent-limited. Unfortunately, these studies did not take into account the parental relationships (i.e., social bonds) and peer relationships.

Moffitt's (1993) taxonomy does identify social bonds as correlates for deviant behavior in both offender typologies but the strength of social bonds as a criminogenic factor in typologies has been rarely tested. Some later studies have revealed the presence of weak familial bonds among the life-course persistent offenders convicted of violent crimes (Jeglum–Bartusch et al., 1997; Moffitt et al., 1996). Jeglum–Bartusch et al. (1997) was a study conducted using a sample

from the Dunedin cohort to compare modern developmental theories versus Gottfredson and Hirschi's (1990) general theory. Moffitt et al. (1996) was a longitudinal study testing the differences in the onset of adolescent-limited and life-course persistent offenders. Neither Jeglum–Bartusch et al. (1997) or Moffitt et al. (1996) were performed in the context of race, therefore they cannot speak to the relevance of social bonds for African-Americans in the context of trajectory analysis.

Researchers have found that the effectiveness of these turning points is dependent on the type of offender (Moffitt et al., 2002). Life-course persistent offenders appear to be more resistant to the social bonds attached to these turning points (Wright, Caspi, Moffitt, & Silva, 2001). Other research has examined this connection. For instance, Higgins, Jennings, and Mahoney (2010) is the only study that has examined the link between parental bonds and delinquency using trajectory-based analysis. Using data from the Gang Resistance Education and Training (GREAT) program they identified the possibility of five distinct groups that varied by parental attachment. One trajectory showed little to no parental attachment, another trajectory displayed little parental attachment that increased with age, a third trajectory showed high levels of parental attachment that declined over age, while the last two groups showed high levels of attachment that stayed relatively stable over time. These findings supported the idea of prior studies that as parental attachment increases the likelihood for offending decreases.

Based on this literature, an underexplored area is the role of social bonds in the context of race and trajectories of offending. Therefore, the present study

expects social bonds (i.e., peer association and parental attachment) to be a correlate between both offender typologies suggested by Moffitt (1993).

Much research suggests that an association with a delinquent peer group will facilitate or enhance delinquent or antisocial behaviors (Bjerregard & Lizotte, 1995; Dishion, Patterson, & Griesler, 1994; Patterson, 1993; Patterson, Dishion, & Yoerger, 2000). From a developmental standpoint, one interesting attribute of peer association is its parallels with the age-crime curve. As with the age-crime curve, association with delinquent peers tend to increase during mid-adolescence and begins to decline after age 15 (Elliott & Menard, 1996; Warr, 1993). Some researchers have sided with the facilitation aspect of delinquent peers. Further studies also found that by reducing contact with delinquent peers individuals experience long term reductions in delinquency, police arrest, and substance abuse (Chanberlain & Reid, 1998; Vitaro, Brengden, & Tremblay, 2001).

Lacourse et al. (2003) tested Moffitt's (1993) assertion that late on-set delinquents (adolescent-limited offenders) are more effected by peer association than early on-set delinquents (life-course persistent offenders). In a sample of 969 Canadian males, assessed between the ages of 11 and 17, Lacourse et al. (2003) found support for Moffitt's (1993) theory. Further, the study also found that greater exposure to delinquent peers lead to more instances of antisocial behavior. This finding also reinforces the facilitation aspect of peer association, but the problem is that race was not taken into account.

In a self-report study looking at gun ownership and street gang membership Bjerregard & Lizotte (1995) found peer association and peer delinquency were strong factors in determining individual antisocial behavior. Dishion, Patterson, & Griesler (1994) found that delinquent peer association is reinforced within a social learning framework. Further, that the rejection of an antisocial individual by non-delinquent peers and acceptance by like delinquents facilitates the antisocial behavior. In a developmental study of 206 families involved in the Oregon Youth Study, Patterson (1993) also found that involvement with delinquent peers increases the likelihood of deviant behavior. In a study using similar data Patterson, Dishion, & Yoerger (2000) found that there is some relationship between antisocial behavior, school failure, and peer rejection. These studies offer support for the hypothesis that peer relationships play a key role in determining delinquency.

The prior studies regarding peer association and Moffitt's taxonomy have found peer association to be a correlate for offending. Following their course, it is expected that the current study will also find peer association to be a correlate for criminal behavior.

The Present Study

This study examines the predictions of Moffitt (1993, 1994) as her theory describes race, particularly those of African-American offenders. The purpose of this study is focused on African-American males because it is a modest first step into an unexplored area of Moffitt's (1993) theory. This study also examines the role of parental and peer relationships and their effect on the offender disparity

among the typologies defined by Moffitt (1993). This study explores the hypothesis that the admittance into trajectory groups shares some relationship with various social bonds particularly peer association and parental support. Finally, this study expands Moffitt's (1994) original proposal which is centered on how social bonds are related to life-course persistent offenders. It is expected that Moffitt's offender trajectories will be found in this sample and social bonds be a correlate for antisocial behavior.

CHAPTER 4: METHODS

The data for this study comes from the National Longitudinal Survey of Youth 1997 (NLSY97). This study is a secondary data analysis (Maxfield & Babbie, 2006). This means that the data were collected by someone else and made available for others to use in their studies. The primary data collection method in this study is self-report data. Self-report data has the ability to capture data where other forms of surveys fall short (Maxfield & Babbie, 2006). For example, they are useful for studying sensitive behaviors such as crimes or deviant acts that may often go unreported in official crime studies (Maxfield and Babbie, 2006). Self-report data are also considered the dominant method for studying the causes of crime in criminology (Levinson, 2002).

Self-report data have some drawbacks. Many critics feel that there are many methodological defects in using self-report data (Levinson, 2002). First, respondents may exaggerate in their responses. Secondly, respondents may not remember certain delinquent acts particularly trivial offences. Third, self-report questionnaires are often centered on minor offenses and the more serious or violent offenses are left out. Fourth, many times the sample is not representative of the population. These drawbacks cast doubt on self-report studies (Levinson, 2002). Maxfield and Babbie (2006) note if proper techniques are utilized then these threats may be minimized. The NLSY97 takes steps to reduce these issues.

The NLSY97 documents the transition of young Americans from school to work and consequently the change from adolescence to adulthood. The sample represents U.S. residents in 1997, born during the years of 1980-1984. The NLSY97 focuses on ten main topics including: employment, schooling, vocational training, socioeconomic status, family structure, family background, future endeavors, attitudes, behaviors, and time management. Some attributes for the data that make it appealing to sociologists and criminologists is a series of questions asked regarding behavior and personality.

The original sample of 8,984 respondents were asked questions regarding individual attitudes, behaviors, and time management. They were also asked about their perception of school, teachers, and peers. Further, they were asked about their mental health, sexual activity, drug and alcohol use, crimes committed, and how much time they devoted to school and television. The survey includes information related to the youths' family and community as well as race and gender demographics. Although the survey was originally designed to explore various transitional periods during early adulthood many lifestyle and demographic measures are included which are relevant to this study.

The sample for this study was derived from a series of steps. The first step was to identify the age range of 16 to 22 years of age. The second step isolated African-Americans. Race is significant because Moffitt (1994) proposes that African-Americans should prove more prominent in both adolescent-limited and life-course persistent offenders. The third step isolated biological sex of males. An all male sample was selected to magnify deviancy because males are more prone to criminal behavior than females (Gottfredson & Hirschi, 1990; Moffitt,

1993, 2003). These steps reduce the sample size to 283 African-American males ages 16 to 22 years. This data will allow for the estimation of Moffitt's (1993, 2003) trajectories.

Crime Measures

Crime was an additive measure of five items. These five items were "Have you purposely destroyed property in [during the current year]?", "Have you stolen anything under 50 dollars [during the current year]?", "Have you stolen anything over 50 dollars [during the current year]?", "Have you committed a property crime [during the current year]?", and "Have you attacked to hurt someone or fight with them [during the current year]?". The responses indicated whether they had or had not, (1) yes or (0) no. The internal consistency of the scale for each of the years was between .60 and .75 that is acceptable, and via Cronbach's alpha the test-retest reliability is addressed in the results. The scale resulted in a range of 0 to 5 with higher scores indicating that the individual had participated in more activity that is criminal during the year in question.

Social Bond Measure

A single item measure was used to capture social bonding. In this study, the measure of maternal support was used. The measure of maternal support was: When you think about how she [your mother] acts toward you, in general, would you say she is very supportive, somewhat supportive, or not very supportive? The answer choices were coded so that 1 = not very supportive, 2 = somewhat supportive, and 3 = very supportive. Higher scores indicated more support.

Peer Association Measures

The peer measure was an additive measure of the six items. These items were a reflection of the percentage of peers that: smoked, got drunk once a month, belonged to a gang, used illegal drugs, cut classes, and had sex. The internal consistency for these items was satisfactory via Cronbach's Alpha (0.85). Each of these items were coded so that higher scores indicated a higher percentage of association with these peers (i.e., 1=almost none, 2=about 25%, 3=about 50%, 4=about 75%, 5=above 75%).

Missing Data

Missing data is a problem for longitudinal research for several reasons such as: death, disappearance of participants, or participant refusal to continue (Brame & Paternoster, 2003; Brame & Piquero, 2003). In research missing data is commonly regarded as a statistical nuisance which reduces sample size. The reduction in sample size could in turn become a threat to statistical reliability. Particularly to longitudinal research, random missing data is less threatening than systematic missing data, unless the data missing is related to the variable of interest (Nagin, 2005). Missing data in this study was only 2 percent, this is not significant or substantive enough to bias the results.

CHAPTER 5: ANALYSIS

The analysis for this study elects several stages of statistical tests. In the first stage, univariate analyses are used to illustrate the dispersion of each variable independently. This is performed by measuring the mean, standard deviation, skewness and kurtosis. The mean is defined as the sum of values for all observations divided by the number of observations (Thompson, 2008). The mean can also be used to describe the central tendency or general trends of the data. The standard deviation is used to measure the amount of dispersion around the mean (Thompson, 2008). Better put, the standard deviation measures the how widely the data is dispersed around the mean. In a normal distribution (distribution of the data resembles a perfect bell-shaped curve), 68.3 percent of observations fall within +/- 1 standard deviation of the mean, 95.4 percent is within +/- 2 standard deviations of the mean, and 99.7 percent fall within +/- 3 standard deviations of the mean. Because it is extremely rare to find a "normal distribution" it is necessary to measure skewness and kurtosis to check for asymmetry. Skewness is used to describe whether the majority of the data is clustered at one end of the distribution (Thompson, 2008). A positive value reflects that the peak is off to the left and a negative reflects that it is off to the right. Kurtosis measures the extent to which data is concentrated to the peak of a distribution versus the tails (Mardia, 1970). Kline (2010) argued that skewness less than 3 and kurtosis less than 10 are acceptable.

In the second stage, bivariate correlations are used to examine the association between social bonding, peer association and crime across different waves of data (e.g., 1997-2003). Specific to this study, Pearson's r correlation is utilized to detect any dependence that exists between social factors and crime. Bivariate correlations also allow an opportunity to examine the test-retest reliability of the measures.

The third stage incorporates a relatively new method unique to testing group based theories. This study utilizes Nagin's (2005) Semi Parametric Group-based Modeling (SPGM) to examine the developmental trajectories of crime and social influence. As mentioned above, this method enables researchers to discover if qualitatively similar groups of individuals are following similar developmental trajectories (Nagin, 2005). Observing and understanding the development of human behavior over time is equally if not more important than studying static behavior. Topics such as psychopathology, crime over life stages, the interaction of human behavior and medical research all rely on studies conducted longitudinally. These longitudinal studies provide a base for the study of developmental trajectories. Prior to the last few decades the standard statistical analysis of longitudinal data was defined by the variability of individual means. One problem with this traditional method is that it does not offer much support for the taxonomic theories which maintain that there may be certain sub-groups of a population which share multiple similar characteristics, thus similar trajectories. Often times researchers are forced to create theorized groups based on analysis and insight which is extremely subjective (Nagin, 2005). This lack of

statistical stability will inevitably lead to the risk of creating groups whose relationships are based solely on random variation and failing to properly identify unique but important developmental patterns (Nagin, 2005). SPGM remedies this problem.

The proper shape and number of the trajectories is then determined by several statistics that SPGM produces. The first is the Bayesian information criterion (BIC) which allows researchers to choose the best model. When the BIC is maximized the proper model that best describes the data has been found (Nagin, 2005). This means that the proper number of groups and shape of the trajectories have been identified. The second is the measure for precision using posterior probabilities. If the posterior probabilities measure is at least .7, then memberships in the groups are relatively precise (Nagin, 2005).

Two alternative approaches for modeling developmental patterns are hierarchical modeling (Byrk and Raudenbush, 1987, 1992; Goldstein, 1995), and latent curve analysis (McArdle and Epstein, 1987; Meredith and Tisak, 1990; Muthen, 1989; Willett and Sayer, 1994). Similar to group based modeling approaches these alternatives are designed to statically explain differences among population members over a length of time (Nagin, 2005). Group-based modeling differs from these two approaches because it assumes that there are clusters or groupings that in themselves that may statistically detect distinctive trajectories rather than assuming that all trajectories vary continuously across the population (Nagin, 2005). One reason group-based modeling is useful to developmental researchers is because by singling out by groups it is possible to

uncover relationships that are unique to that cluster which otherwise may go unnoticed (Lacourse, Nagin, Vitaro, Claes and Tremblay 2003). Group-based modeling may also credit or discredit development theories that define trajectory groups (e.g., Moffitt, 1993).

SPGM uses a multinomial approach to define the developmental trajectory of each individual based on age and membership into a latent group which approximates a continuous population distribution (e.g., censored normal, logistic, or Poisson distributions) (Hay & Forrest, 2006). To insure the accuracy of the groups the Bayesian Information Criteria (BIC) can be used to help verify the proper model that most closely and efficiently describes patterns in the data (Jones, Nagin, and Roeder, 2001; Nagin, 2005). Estimations are then made regarding the trajectory of each group, the post probabilities of the group memberships for each individual included in the analysis, and the estimated percentage of the population in each trajectory group (Nagin, 2005).

The fourth stage of the analysis utilizes multinomial logistic regression to illustrate the best fitting model to describe the relationship between crime and social relationships. Better put, regression is a statistical tool used to see how the dependent variable (antisocial behavior) is affected by the independent variables (social bonds) when there are multiple variables that may effect the dependent variable (Thompson, 2008). Multinomial logistic regression is appropriate when the dependent variable in question is nominal (a set of categories that cannot be ordered in any logical way) (Thompson, 2008). Further, multinomial logistic

regression compares the likelihood of being assigned to a specific trajectory group.

CHAPTER 6: RESULTS

Stages I and II

The results in Table 1 reflect the descriptive statistics and the bivariate correlations for crime and peer association. The mean level of crime is decreasing for the entire sample. Table 1 shows test-re-test reliability with correlations ranging from 0.06 to 0.29 for crime. This indicates that the measures have proper reliability for analysis. This table also shows a relationship between mother support and crime in '97 and '98. As crime increases mother support decreases. Illustrated in this table is also a correlation between peer pressure and crime in '97, '99, '00, and '01. As crime increases so does peer pressure. These results support social bond theory in that a relationship between peer association, mother support and criminal behavior does exist.

Table 1 Descriptive Statistics and Bivariate Correlations

Crime	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Crime '97	1.00								
2. Crime '98	0.17**	1.00							
3. Crime '99	0.34**	0.20**	1.00						
4. Crime '00	0.36**	0.28**	0.46**	1.00					
5. Crime '01	0.34**	0.06	0.23**	0.4**	1.00				
6. Crime '02	0.30**	0.17**	0.13*	0.29**	0.37**	1.00			
7. Crime '03	0.09	0.16**	0.21**	0.19**	0.29**	0.20**	1.00		
8. Mother Sup. '97	-0.13*	-0.18**	-0.03	-0.06	-0.06	-0.06	0.05	1.00	
9. Peer Assoc. '97	.24**	0.11	0.19**	0.20**	0.15*	0.10	0.12	-0.05	1.00
Mean	0.84	0.29	0.25	0.24	0.19	0.13	0.11	2.81	18.19
Standard Deviation	1.12	0.73	0.62	0.68	0.57	0.46	0.45	0.40	5.45
Skewness	1.44	3.54	3.53	3.86	4.38	4.11	6.11	-1.75	-0.15
Kurtosis	1.81	15.69	16.66	17.44	26.33	18.86	52.45	1.6	-0.50

p< .10* p< .05** n= 283

Stage III

The BICs that were found during the model search for crime are illustrated in Table 2. The BICs indicate that a four group model is the best representation for crime. These results reflect that four qualitatively distinct trajectories have materialized from these measures of criminal activity in this data. This supports Moffitt's (1993) predictions and the first expectation of this thesis that more than one trajectory of offending exists in longitudinal criminological data. In addition, these results support Moffitt's (1994) assumption that the trajectories would materialize for African-Americans.

Table 2. Bayesian Information Criterion

Number of Groups	BIC
2	-1215.74
3	-1205.53
4	-1203.15
5	-1206.82

Table 3 presents the posterior probabilities for crime trajectory groups. This table shows that all of the posterior probabilities are above 0.70 that indicate that the groups for crime have been reliably depicted. This is further evidence that multiple groups are found in the data and offers additional support for the expectation in this thesis that multiple offending groups would be found in a sample of African-Americans.

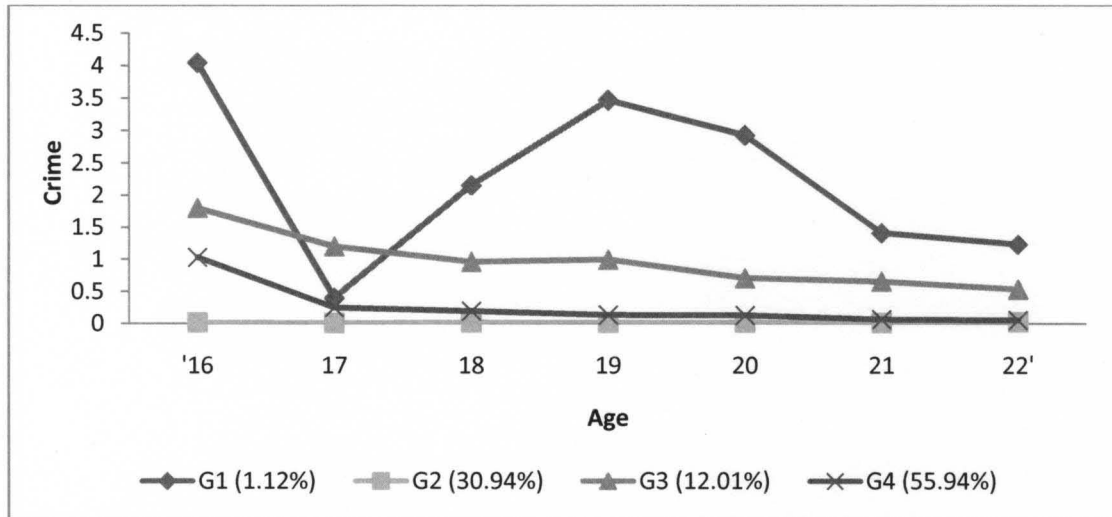
Table 3. Posterior Probabilities for Criminal Trajectory Groups

Number of Groups	Posterior Probabilities
1	0.85
2	0.75
3	0.87
4	0.91

Figure 1 shows the developmental of trajectories of crime from ages 16 to 22 years. Crime trajectory group G1 describes 1.12 percent of the sample. This group follows the pathway which describes the group that produces the largest amount of criminal offences during the period studied and may reflect the life-course persistent offender typology described by Moffitt (1993). Crime trajectory group G2 describes 30.94 percent of the sample. This group follows the pathway that does not commit any criminal acts from ages 16 to 22 years. This group may describe a non-offender typology. Crime trajectory group G3 described 12.01 percent of the sample. This trajectory group follows a pathway that begins at two criminal offences, then levels out criminal offending at 19 years and remains relatively stable through age 22 years group G3 may represent Moffitt's (2003) low-level chronic offender typology. After the age of 22 years, the offending may increase, but this is beyond the reach of these data. Crime group G3 may represent Moffitt's (2003) low-level chronic offender typology. Crime trajectory group G4 described 55.94 percent of the sample. This group follows the pathway that begins at one offence at age 16 years and decreases to nil by age 22. This group may represent the adolescent-limited group described by Moffitt (1993).

The finding of the non-offender group is a surprise because it shows that Moffitt's (1993) three group predictions may not be sufficient in all data.

Figure 1. Developmental Trajectories of Crime.



Stage IV

Table 3 illustrates the multinomial logistic regression that compares the likelihood of being assigned to a specific trajectory group based on peer association and mother support. For this study crime group G1 was the reference group because it appeared to be the most unstable which would reflect greater disparity. For instance being assigned to G2 versus G1 is based on a negative peer association (Odds= 0.70, $p < .05$). Thus, supporting that peer associations have some effect on the admission into group G2. The results are not supportive of the expectation that social bonds are important to following a specific trajectory group. This may suggest that Moffitt's (1993, 1994,

2003) versions of the theory may need to be respecified as they do not account for African-American male trajectory group membership.

Table 3. Odds Ratios and Probabilities for Primary Socialization Measures and of delinquent group membership.

Measure	G1 vs. G2		G1 vs. G3		G1 vs. G4	
	Odds	Prob.	Odds	Prob.	Odds	Prob.
Mother Support	2.89	0.40	1.11	0.93	2.06	0.56
Peer Assoc.	0.70	0.02*	0.82	0.19	0.76	0.07

Model Diagnostics:

Chi- Square= 4.36

-2Log Likelihood= 210.44

McFadden R-Square= 0.05

Nagelkerke= 0.11

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

Note. Reference category is group 1 (the crime group).

CHAPTER 7: DISCUSSION

This study attempts to understand any relationship that exists among social bonds, peer association, and trajectory groups of offending for a sample of African-Americans ranging in age from 16 to 22 years. The main expectations in this study were to first identify trajectory groups defined by Moffitt (1993). The second main expectation was to see if social bonds influenced whether someone followed these trajectories. In addition, it was expected that peer association would be relevant to following a specific trajectory.

As expected, multiple trajectories were found in these data. Specifically, four trajectories were found to represent the patterns of delinquency for African-American males. The identification of four groups supports Moffitt's (2003) assertion that more than two groups may be found in longitudinal data, but these data indicate that this may be more than just a low level chronic offending group. The crime trajectory group labeled G1 describes 1.12 percent of the sample. Group G1 follows the pathway describes the group that produces the largest amount of criminal offences during the period observed and reflects some attributes similar to those labeled life-course persistent offenders as described by Moffitt (1993). Crime trajectory group G2 describes 30.94 percent of the sample. This group follows the pathway that does not commit any criminal acts from ages 16 to 22 years. Group G2 exhibits the same characteristics mentioned which could be labeled the "non-offender" typology. Crime trajectory group G3

described 12.01 percent of the sample. This trajectory group follows a pathway that begins at two criminal offences, then levels out criminal offending at 19 years and remains relatively stable through age 22 years group G3 may represent Moffitt's (2003) low-level chronic offender typology. After the age of 22 years, the offending may increase, but this is beyond the reach of these data. Although the data in this study is limited (ends at age 22 years), the path of this trajectory may represent the group labeled "Low-level chronics" because they offend persistently at low-levels from adolescents into adulthood (D'Unger, Land, McCall, & Nagin, 1998). Crime trajectory group G4 described 55.94 percent of the sample. This group follows the pathway that begins at one offence at age 16 years and decreases to nil by age 22. This group represents the largest portion of the sample as well as many attributes consistent with the adolescent-limited group described by Moffitt (1993). The findings using SPGM therefore partially support Moffitt's (1993, 1994, 2003) theory regarding offender typologies. Although this study partially supports Moffitt's (1993, 1996) offending groups, a fourth group was found suggesting that Moffitt's (1993, 1996) three group theory may not be sufficient for all crime data. This may be an issue with using an all African-American male sample. This sample may behave differently.

Multinomial logistic regression was applied to this study which shows, as mentioned above, that there may be some relationship between peer association and following criminal trajectory group G2 or theoretically the non-offender typology. This finding reflects that although the effects of societal bonds were not significantly found to effect all trajectories it does show that peer association may

be relevant to those that are following a certain trajectory groups (i.e., non-offenders) as hypothesized by Moffitt (1993). Further, the present study of African-American males supports prior studies on peer association and its effects on antisocial behavior (Bjerregard & Lizotte, 1995; Dishion, Patterson, & Griesler, 1994; Patterson, 1993; Patterson, Dishion, & Yoerger, 2000). Peer pressure from delinquent peers according to this study does appear to be a factor in determining criminal behavior among African-American males. Consistent with this study, the relationship of peer pressure and delinquent behavior has been well documented (Bjerregard & Lizotte, 1995; Dishion, Patterson, & Griesler, 1994; Patterson, 1993; Patterson, Dishion, & Yoerger, 2000). How peer pressure affected the admittance into trajectory groups, on the other hand, is a unique finding and more research is needed to determine the exact role that social influences play among African-American males.

Policy makers are entrusted with the difficult decision to allocate funding to implement crime prevention and intervention programs that are often accessed on a cost-benefit analysis scale to measure their successes and likewise their failures. Because of the difficult decisions it is necessary to be cognizant of what programs may produce the best results. Due to the limitations (i.e., basic research rather than applied research) of this study these implications are limited to assumptions based on what the data was showing. With this in mind, there are some policy applications that this study reveals. To begin, a re-dispersion of resources targeted at identifying and treating young at-risk children and juvenile delinquency programs that have yielded little to no effective results in the past could be eliminated (e.g., DARE, Scared Straight, Juvenile Mentoring, and

Juvenile Boot Camps). The surplus gained could be aimed at specific research backed programs aimed at early prevention during the life-course (Cohen et al., 2010). Some examples of these could include early family-parenting training programs, mentoring, and supervised extra-circular afterschool activities. All of which have been found to improve to cognitive abilities and decision making among at risk youth (Cohen et al., 2010). Many studies have also found that by reducing contact with delinquent peers, individuals experience long term reductions in delinquency, police arrest, and substance abuse (Chamberlain & Reid, 1998; Vitaro, Brengden, & Tremblay, 2001). Programs designed to limit contact with deviant individuals could prove beneficial to inhibiting antisocial behavior.

The results of these programs may lead to lower delinquency and antisocial behavior. Put simply, this change may encourage the use of research backed programs aimed at children that display symptoms of life-course persistent offenders. It is possible some of those treated may not be or become a life-course persistent offender but improved socialization and parenting does not seem to be a counterproductive strategy (Cohen et al., 2010).

Although the result of the present study provides some insight pertaining to the role of peer association in the labeling of group trajectories, the results should be interpreted within the confines of their limits. This study used a measure of crime that is not very extensive. Only mother support as a social bond measure is also weak. Although this measure has limits, little research has been conducted specifically societal bonds and thus this study provides a small

first step into this unexplored area. Further, the measure for peer association could be more in-depth even though it does show that it plays a role among criminal trajectories. In general, this study should be used as a stepping stone to propel further research of this topic. Particularly, additional studies are needed describing criminal trajectories of the African-American population given their representation in the criminal justice system. Broader studies may be utilized to investigate specific social relationships are more deterministic than others. Such findings may produce some relevance as to specific policy implications aimed at controlling high-level offenders.

CHAPTER 8: CONCLUSION

The initial goals of this study included locating and identifying the trajectory groups mentioned in Moffitt's (1993). This study employed data from the National Longitudinal Survey 1997 (NLSY97). The demographics for this sample were African-American males ranging in age from 16 to 22 years. Further, this study intended to compare the social demographics with the predictions of Moffitt (1993, 1994) as her theory describes race, particularly those of African-American offenders. Further, this study examined the role of parental and peer relationships and their effect on the offender disparity among the typologies defined by Moffitt (1993). Particularly, this paper explored the hypothesis that the admittance into trajectory groups shares some relationship with various social bonds particularly peer association and parental support. Finally, this study attempted to expand Moffitt's (1994) original proposal which explains how social bonds are only directly related to life-course persistent offenders. Due to the limitations of this study, as mentioned above, the proper inference of policy implications is restricted to those of other studies regarding the relationship of social bonds and criminal behavior. In short, the formation of strong social ties may determine a decrease in deviant behavior. Thus, programs and policy aimed at creating or mending positive societal relationships may reduce the likelihood of criminal behavior.

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