

PATTERNS OF SPECIALIZATION AND ESCALATION IN THE CRIMINAL CAREERS OF  
GANG AND NONGANG HOMICIDE OFFENDERS

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## **ABSTRACT**

### **PATTERNS OF SPECIALIZATION AND ESCALATION IN THE CRIMINAL CAREERS OF GANG AND NONGANG HOMICIDE OFFENDERS**

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Although it has been established that homicide offenders are clearly well versed in the criminal world, there is limited knowledge as to what the specific types of offenses they engage in leading up to the homicide are and if patterns of specialization or escalation exist.

Additionally, little research on homicide offenders has differentiated between gang and nongang homicide offenders, which is surprising considering the vast amount of research that has established that gang members tend to be frequent serious offenders. In order to add to the body of knowledge regarding specialization and escalation in the criminal careers of serious offenders, this study seeks to examine the arrest histories of homicide offenders in Newark, New Jersey.

The study finds that homicide offenders in Newark are heavily involved in violent and drug crimes prior to the homicide. Gang members tend to commit and specialize in drug crimes.

Nongang members tended to commit more violent crimes and had the highest probability of specializing in drug crimes, then escalating to violence. Policies targeting drug offenders might be beneficial in reducing homicide. An additional intervention should take place once offenders escalate to violence.

## **DEDICATION**

Para mi luz y mi inspiración, mi mama, quién me enseñó que puedo prevalecer sin hacer caso de los dificultades y las tragedias de la vida.

For my light and inspiration, my mom, who taught me that I can prevail regardless of the difficulties and tragedies of life.

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## INRODUCTION

Although homicide is a crime that is often the focus of attention in the media, it is a rare event. While nationally overall violent crimes occur at a rate of 441.9 per 100,000 citizens, homicides occur at a rate of 5.9 (Federal Bureau of Investigation, 2009). Despite its rarity, homicide creates severe physical, financial, and emotional consequences for offenders, their families, the families of victims, and the public (Corso, Mercy, Simon, Finkelstein, & Miller, 2007; DeLisi, Kosloski, Sween, Hachmeister, Moore, & Drury, 2010; Holmes, 2010). The estimated average cost per homicide is more than 17.25 million dollars; costs related to the victim exceeded 4 million dollars, costs to the justice system was more than 307,000 dollars, and over 12 million dollars in estimated costs related to homicide prevention efforts (DeLisi et al., 2010). Not only are the economic costs significant, but the loss to families and friends due to the death or incarceration of a loved one is devastating (Holmes, 2010). In order to minimize losses resulting from homicide, it is important to examine what leads a person to become a homicide offender or victim. One strategy that researchers have turned to in order to address this issue is the criminal career paradigm.

Although several studies have recognized that most homicide offenders have a criminal history, often with prior violent offenses (i.e. Broidy, Daday, Crandall, Sklar & Jost, 2006; Cook, Ludwig, & Braga, 2005), few studies have specifically looked for patterns in the types of offenses committed, such as patterns of specialization and escalation (i.e., DeLisi & Scherer, 2006; Trojan & Salfati, 2010; Wright, Pratt, DeLisi, 2008). Furthermore, even fewer studies have looked at the population of homicide offenders who are also gang members (Drury & DeLisi, 2008). This is surprising considering that gang members are typically involved in more serious offending than their nongang counterparts, and are responsible for a substantial



percentage of homicides in large cities (Chicago Police Department, 2005; Dukes, Martinez, & Stein, 1997; Egley, Jr., 2002; National Gang Intelligence Center, 2009; Los Angeles Police Department, 2008; Thornberry, 1998). Additionally, millions of dollars are invested in gang violence prevention programs and anti-gang police units every year (Bonner, McLean, & Worden, 2008; Cardenas, 2008; Langton, 2010). Research on the offending patterns of gang and nongang homicide offenders could help identify key points in the criminal career where interventions might be most needed and effective in preventing the commission of serious violent crime.

In order to supplement the body of knowledge on criminal careers of homicide offenders, this study examines arrest data from a sample of adult males that committed homicide in Newark, New Jersey from 1999 to 2005. The offense types committed by each offender across successive arrests are analyzed in order to determine whether offenders show a tendency to specialize (repeating similar offenses), escalate, or de-escalate in seriousness (switching to more or less serious crime types) in their criminal activities.

The remainder of this thesis consists of five chapters. The first two chapters summarize relevant literature regarding criminal career research, especially research regarding specialization, escalation, and the sequence of offense types, and the theoretical framework that has been used to explain differences in these patterns of offending. The third chapter presents an explanation of the data and methods of analysis used to document patterns of specialization, escalation, and the differences between the criminal careers of gang and nongang homicide offenders. The fourth chapter discusses the findings of the analysis. In the fifth and final chapter, implications for theory, policy, and future research will be discussed.

## **CHAPTER 1: LITERATURE REVIEW**

### **The Criminal Career Paradigm**

The criminal career has been the focus of criminological research for decades (See table 1 for a summary of relevant literature). Blumstein, Cohen, Roth, and Visser (1986) defined the criminal career as “the characterization of the longitudinal sequence of crimes committed by an individual offender” (p.12). In other words, individuals who engage in criminal behavior over the course of time might exhibit patterns that define the course of their offending. One aspect of the criminal career that researchers have examined is defining who participates in criminal offending. Males and minorities typically engage in significantly more criminal activity than females and Caucasians (Blumstein et al., 1986; Zimmerman & Messner, 2010). Although minorities tend to be overrepresented in criminal participation research, it appears that they are more likely to be exposed to important factors that have been found to increase the propensity to commit crime (i.e. poverty, family influences, substance abuse) (Blumstein et al., 1986; Lee, 2000; Polk & White, 1999; Roe-Sepowitz, 2009; Schwartz, 2006; Williams & McGee, 1994; Wright & Younts, 2009).

Criminal career researchers have also examined the initiation of offending, the frequency of offending over time, career length, and termination of offending (Blumstein et al., 1986). Delinquency is usually initiated during adolescence and peaks during the teen years, and then tapers off (Farrington, 1986; Moffitt, 1993; Sampson & Laub, 2003). Early research on career length estimated criminal careers to be short (around 5 years); however, more recent studies have estimated the average career lengths of offenders to be from 10 to 20 years (Blumstein et al., 1986; Farrington, Lambert, & West, 1998; Piquero, Brame, and Lynam, 2004). Although offending frequency is typically at its highest during teen years, earlier age of onset, drug use,

unemployment, and prior criminal history are typically associated with higher rates of offending frequency (Blumstein et al., 1986). In other words, individuals that engage in more extensive offending earlier in life offend more frequently. In addition, depending on their life circumstance, individuals who are unemployed and/or use drugs also offend more frequently (Blumstein et al., 1986).

Research has also sought to identify and define the patterns that emerge regarding the tendency to switch, or not to switch, between types of offenses throughout the course of their criminal career. One such dimension is the level of specialization or versatility that is present in a criminal career. Specialization is defined as “the tendency to repeat the same offense type on successive arrests” (Blumstein et al., 1986, p. 81). Versatility in the criminal career, which has also been termed “cafeteria style” offending by Klein, is quite the opposite (1984). Proponents of versatility argue that offenders engage in a variety of types of offenses and that no particular pattern can be established (Blumstein et al., 1986; Brame, Paternoster, & Bushway, 2004; Cohen, 1986; Klein, 1984; McGloin et al., 2007). Research has examined the extent to which offenders exhibit escalation or de-escalation in their criminal careers. Escalation is “the tendency for offenders to move to more serious offense types as offending continues” (Blumstein et al., 1986, p.84). Research has also looked for patterns in the chronological sequence of crime types over the course of offending (Blumstein et al., 1986; Elliot, 1994; LeBlanc & Frechette, 1989; LeBlanc et al., 1991; Loeber et al., 1993). Research on specialization, escalation, and the sequence of offense types are discussed in further detail in the following sections.

## **Specialization in Offending Careers**

Specialization research has resulted in mixed findings, which appear to depend on the population being studied. Juveniles typically exhibit versatility in their offending patterns (Blumstein et al., 1986; Brame, Paternoster, & Bushway, 2004; Britt, 1994; Kempf, 1987; LeBlanc & Frechette, 1989; Rojek & Erickson, 1982; Wolfgang et al., 1972). For example, Brame, Paternoster, and Bushway (2004) examined police contact data of a sample of male juveniles born in 1945 that lived in Philadelphia, Pennsylvania. They found these juveniles to be versatile in their offending patterns, regardless of whether they are high or low rate offenders. Although a few studies have found specialization among juveniles in status and property offenses, the level of specialization found was small (Farrington et al., 1988; Lattimore et al., 1994; Williams & Arnold, 2002).

Even though researchers have found evidence of specialization among adults, the types of offenses have been inconsistent. This could be due to differences in the sample populations used in each study due to culture (i.e. United States, the Netherlands, England), demographic make-up (differences in range of ages, inclusion or exclusion of females in study sample), or the type of criminal career data used (self report or official) (Blumstein et al., 1988; Britt, 1996; Davis, 1992; Lo, Kim, and Cheng, 2008; Nieuwebeerta et al., 2011; Stander et al., 1989). For example, Davis (1992) studied a sample of delinquent and nondelinquent males from Boston for an 18 year period, and found that in adulthood the strongest evidence of specialization was seen in alcohol offenses. Conversely, Lo, Kim, and Cheng (2008) studied male and female adult arrestees in urban and rural county jails, and found the strongest evidence of specialization with violent and drug offenses.

Studies of specialization seem to support the idea that specialization increases over time (Blumstein et al., 1988; Farrington et al., 1988; Nieuwbeerta et al., 2011; Piquero, Paternoster, Mazerolle, Brame, & Dean, 1999; Stander et al., 1989; Tracy et al., 1990). These findings are consistent with the notion that juveniles tend to exhibit versatility and adults tend to exhibit specialization (Blumstein et al., 1986; Blumstein, Cohen, Das, & Moitra, 1988; Brame, Paternoster, & Bushway, 2004; Davis, 1992; Lo, Kim, and Cheng, 2008; Nieuwbeerta, et al., 2011; Stander et al., 1989). For example, Piquero and colleagues (1999) used data from a sample of male juveniles born in 1958 that resided in Philadelphia. They sought to examine the effect that age of onset would have on the level of versatility or specialization over time, and found that specialization in violent, property, and other miscellaneous offenses increased over time regardless of the age of onset of offending (Piquero et al., 1999). This is consistent with prior findings that suggest an increase in specialization in a variety of different offenses (i.e. motor vehicle theft, drugs, disorderly conduct, curfew violations, fraud) over successive arrest transitions (Blumstein et al., 1988; Farrington et al., 1988).

More recent studies have found offender characteristics to be related to levels of escalation and specialization. Britt's (2000) study of youths under the supervision of the California Youth Authority showed some specialization that increased over successive arrests; however, the effect was greatly reduced after controlling for offender background characteristics. He concluded that age, race, family background, group or individual context in commission of crimes, and social psychological assessment are important in predicting crime types. For example, as age at time of arrest increased, the probability of being arrested for a violent, drug, or alcohol offense also increased. Armstrong and Britt (2002; 2004) also found that accounting for offender background characteristics such as family environment, school performance, age,

race, aggression, and substance abuse greatly decreased evidence of specialization with the exception of property offenses, particularly burglary. Similarly, McGloin and colleagues (2007) found that life events and routine activities such as marriage, community supervision, and alcohol and drug use have a significant impact on levels of specialization in one's offending. Marriage and being under community supervision are associated with increases in specialization in offending while alcohol and drug use are associated with high levels of offending versatility.

### **Escalation and De-escalation in Offending Careers**

Research on escalation and de-escalation has also shown mixed findings. Evidence suggests that juveniles are more likely than adults to exhibit escalation of seriousness in their offending careers (Ayers et al., 1999; Blumstein et al., 1988; Davis, 1992; Farrington et al., 1988; LeBlanc & Frechette, 1989; LeBlanc et al., 1991). For example, using the average age of onset for different types of delinquent activities, LeBlanc and Frechette (1989) found that Canadian juveniles initiated offending with minor delinquency during adolescence and escalated to more serious property and violent crimes in their mid and late teens. Two years later, LeBlanc and colleagues (1991) administered a self report survey at two different times to a random sample of Canadian adolescents and compared their results to those obtained from a sample of delinquents who had been identified as such by official records. Although both samples exhibited some levels of escalation in seriousness, the results indicated that the delinquent sample exhibited higher levels of stability in the seriousness of offense types committed while the general adolescent sample showed higher levels of escalation to more serious offenses the second time the survey was administered. In another study, Davis (1992) found evidence supporting escalation at the beginning of juvenile criminal careers, especially for chronic offenders, and then de-escalation over time. In a more recent study, Ayers and colleagues (1999)

conducted a longitudinal study with adolescent students from Seattle, Washington. The students were classified into levels based on their self reported delinquent behavior prior to the study. They ranged from Level 0 (no past delinquency) to Level 3 (has committed serious delinquent acts, i.e. property and weapons crimes). They found a moderate amount of offense escalation. Specifically, twice as many youths escalated compared to youths that exhibited de-escalation.

Conversely, little to no evidence of escalation or de-escalation has been found with adult offenders (Blumstein et al., 1988; Britt, 1996; Davis, 1992; Farrington et al., 1988). For example, Davis (1992) found a small amount of de-escalation over time. With the exception of transitioning to a robbery offense from a less serious offense, Britt (1996) also did not find support for escalation in his study of Michigan felony offenders. Much like research on the relationship between specialization and offender background characteristics, recent research on escalation has found that family environment, substance abuse, age, and race is related to escalation. Britt (2000) found that factoring in offender background characteristics such as age, race, and family background greatly reduced escalation in offending patterns. He also found that black offenders were more likely to escalate to more serious crimes (particularly to robbery from a property offense) than white offenders over time. White offenders that did exhibit escalation were most likely to transition to substance related (i.e. drugs or alcohol) or property offenses from less serious miscellaneous offenses (Britt, 2000). Armstrong and Britt (2002; 2004) also found that factoring in offender background characteristics significantly reduced evidence of escalation in offending patterns.

School performance, antisocial behaviors, association with antisocial peers, and family environment have also been found to be associated with escalation and de-escalation in the delinquency of juveniles (Ayers et al., 1999; Loeber et al., 1991). Specifically poor academic

achievement, antisocial behaviors, beliefs favoring deviance, and negative family environments were associated with escalation while academic success and positive social skills were associated with de-escalation (Ayers et al., 1999; Loeber et al., 1991). More recently, Liu, Francis, and Soothill (2010) studied a 1953 birth cohort of English offenders for ten years and found age to be associated with de-escalation while increased exposure and experience to the criminal justice system (measured by number of convictions) was associated with escalation.

### **Escalation and the Chronological Sequence of Offense Types**

A few studies have attempted to determine if there is a sequence of offending behaviors that can be established. These studies suggest that youths typically begin committing minor forms of delinquency and status offenses and eventually escalate to more serious behavior such as drug use, alcohol use, and index crimes (Elliot, 1994; LeBlanc & Frechette, 1989; LeBlanc et al., 1991; Loeber et al., 1993). For example, LeBlanc and Frechette (1989) used the average age of onset and average age of termination for different offense types to determine if a sequence could be established. Using self-report and official data from a sample of Canadian youths, they found three major stages characterized by different crime types. First, delinquency began with the commission of shoplifting and vandalism between the ages of 11 and 14, then progressed to the commission of theft (i.e. burglary, common theft, personal larceny, and/or motor vehicle theft) between the ages of 14 and 17, and then escalated to more serious crime types (personal attacks, armed robbery, drug trafficking, and/or sex crimes) between the ages of 16 and 19 (LeBlanc & Frechette, 1989). LeBlanc and colleagues (1991) later established several common pathways found among Canadian adolescents. They observed that youths typically started out committing status offenses, then moved to minor thefts, vandalism, and drugs, and then escalated to aggression and major thefts.



Loeber and colleagues (1993) also proposed 3 pathways based on his sample of male youths from Pennsylvania. The first involved minor delinquent behaviors starting with stubbornness and defiance, escalating to truancy, curfew violations, and running away. The second pathway involves minor delinquency (shoplifting, lying) then escalates to property damage, and then moves on to moderate and serious forms of delinquency, such as stealing, joy riding, fraud, and burglary. The last pathway is the most serious and starts with minor aggressive behaviors (i.e. bullying), then moves to physical fighting, and escalates to major violent acts (i.e. rape, assault). The majority of subjects in the study followed one or more of the proposed pathways indicating that there may be a pattern in the sequence of offense types that can be established.

### **Criminal Careers and Homicide**

Although numerous studies have examined the criminal lifestyles of homicide offenders (e.g., Broidy et al., 2006; Cook et al., 2005; Dobash et al., 2007; Nieuwbeerta, 2003; Soothill, Francis, Ackerley, & Figelstone, 2002; Wolfgang, 1958), examination of their criminal trajectories is scant. To date, only three studies have examined the criminal trajectories of homicide offenders (i.e., Dobash et al., 2007; Loeber, LaCourse, & Homish, 2005; Nieuwbeerta, 2003). Nieuwbeerta (2003) found three trajectory types when examining the offending patterns of 2,546 convicted homicide offenders. He found that half of the sample belonged to a low offending trajectory where offenders engaged in little or no offending prior to the homicide, an intermediate offending group with a moderate number of convictions at age 20 that contained 34 percent of the sample, and a high offending group with high levels of offending throughout their life course that contained 16 percent of the sample. Perpetrators of domestic homicides belonged to the low offending group as well as females and non-Dutch offenders. Those who committed

their homicides in public places tended to be in the high offending trajectory. Similarly, Dobash and colleagues (2007) found an early onset group that started offending prior to age 13, a late onset group that began offending after age 13, and a group that had no offenses prior to the homicide. Consistent with Nieuwbeerta (2003), offenders belonging to the no offending group tended to be perpetrators of intimate partner homicide while early onset offenders were typically chronic offenders throughout childhood and adulthood.

In another study, Loeber, LaCourse, and Homish (2005) examined the violence trajectories of violent youths, and found that 81.8 percent of homicide offenders in their study followed the two most serious violence trajectories. When comparing homicide to other types of violent offenders, those who engaged in homicide are more likely to carry a weapon, suffer from conduct disorder, and sell hard drugs. They also found that homicide offenders also had a higher number of risk factors. These findings; however, are limited by the very small sample of homicide offenders (i.e., n=11).

Only two studies have examined patterns of specialization among homicide offenders. Wright, Pratt, and DeLisi's (2008) study of the criminal careers of incarcerated homicide offenders found moderate amounts of specialization. After comparing the diversity indices for multiple and single homicide offenders, they found that each group exhibited similar patterns of versatility and specialization in their offending careers. Trojan and Salfati (2010) also differentiated between multiple and single victim homicide offenders. They found that equal proportions of single victim homicide offenders specialized in instrumental and violent offenses while multiple homicide offenders were more likely to specialize in instrumental offenses.

Despite the vast amount of studies dedicated to examining the criminal career, findings of specialization and escalation across studies have been inconsistent. This could be a result of the

populations of offenders studied. Research that has found evidence of specialization and escalation do not clearly define the magnitude of evidence needed to establish the existence of these patterns in the criminal career. The current state of criminal career research is still in need of robust findings regarding patterns of specialization and escalation.

## **CHAPTER 2: THEORETICAL EXPLANATIONS FOR CRIMINAL CAREER PATTERNS**

Three major criminological theories have been applied to explain offending patterns in criminal career research: the general theory of crime, the developmental perspective, and the age-grade theory of informal social control. The main premise of the general theory of crime is that crime is the result of low self control; individuals who have low self control will engage in criminal and analogous behavior. Self-control is learned through the socialization process when one is a child (Gottfredson & Hirschi, 1990). Individuals who lack self-control are characterized as being impulsive, risk-seeking, act without thinking of the long-term consequences, and typically express themselves in a non-verbal manner (Gottfredson & Hirschi, 1990). Their desire for immediate gratification drives them to commit crime because it is easy, provides immediate results, and requires less skill than other avenues, such as seeking employment, attending school, or resolving conflicts peacefully.

Following the logic of the general theory of crime, one would predict that individuals with low self-control are more likely to initiate offending at earlier ages, commit crime more frequently, and continue to offend well into adulthood (Hirschi & Gottfredson, 2001; Piquero et al., 1999). This theory also indicates that offenders are likely to exhibit more versatility in their offending patterns than specialization because the offender would commit different crimes depending on his or her needs and the opportunities that are available (Gottfredson & Hirschi, 1990; Hirschi & Gottfredson, 2001). Specialization would only occur if the same opportunities continued to present themselves over time since life events have no effect on patterns of offense types (Gottfredson & Hirschi, 1990; Hirschi & Gottfredson, 2001).

The developmental perspective proposed by Moffitt (1993) attempts to describe patterns of stability or change in the criminal career and has also been applied to findings regarding

patterns of offending over time (Armstrong, 2008; Lo et al., 2008; Loeber et al., 1993; Nieuwbeerta et al., 2011; Williams & Arnold, 2002). Moffitt (1993) suggests that there are two types of offenders: life-course-persistent offenders and adolescent-limited offenders. Life-course-persistent offenders suffer from neuropsychological deficiencies that result in the initiation and persistence of delinquent and criminal activity throughout an individual's life (Moffitt, 1993). These offenders initiate problem behavior at early ages (i.e. biting or hitting at age 4) and escalate into much more serious criminal behavior as they age, such as shoplifting at age 10 and moving on to selling drugs in the teen years. This implies that there may be a sequence of offense types that emerge when examining life-course-persistent offenders' criminal careers (Moffitt, 1993; Loeber et al., 1993).

Conversely, adolescence-limited offenders engage in delinquency temporarily in order to fulfill their desires for adult status (Moffitt, 1993). These offenders desire autonomy and independence, yet they are still financially and socially dependent on their families. They observe life-course-persistent offenders, who appear independent from their families, and more mature, so they mimic their behaviors in order to fulfill their need to obtain adult status. As the environment changes and new events and opportunities for maturity present themselves over time, adolescence-limited offenders desist from criminal activity (Moffitt, 1993).

Moffitt (1993) posits that life-course-persistent and adolescence-limited offenders will have different patterns of offending. She suggests that life-course persistent offenders will have an earlier age of onset and a much longer criminal career; they are likely to exhibit versatility and escalation throughout the course of their criminal career (Moffitt, 1993; Nieuwbeerta et al., 2011; Williams & Arnold, 2002). They will offend more frequently and engage in more serious violent offenses due to their neuropsychological deficiencies and inadequate upbringing (Lo et

al., 2008; Moffitt, 1993; Nieuwbeerta et al., 2011; Williams & Arnold, 2002). Conversely, adolescence-limited offenders will offend for a short period of time. They are more likely to engage in minor offenses, particularly property crimes, in order to fulfill their desire for maturity and independence (Moffitt, 1993; Nieuwbeerta et al., 2011; Williams & Arnold, 2002).

The third theoretical framework employed by scholars to explain criminal careers is the age-graded theory of informal social control, also known as the life course perspective, developed by Sampson and Laub (1993). Sampson and Laub (1993) posit that stability and change in offending patterns is the result of variation in informal social controls throughout the life course of an individual, such as marriage, job stability, or positive family relationships (Sampson & Laub, 1993; Sampson & Laub, 2005). Individuals gain social capital by having socially invested in informal bonds or social relationships, such as money or emotional gain from a marriage, enjoyable employment, or hobby. The more social capital an individual gains from a particular bond (e.g., marriage, job, family), the more invested the individual is in maintaining that bond (Sampson & Laub, 1993; Sampson & Laub, 2005). Thus, individuals will engage in or refrain from deviant activity depending on the strength of and social capital gained from informal bonds. Researchers have recently applied the principles of the life course perspective to criminal career research by examining the effects of important life events, also called local life circumstance, on offending patterns (Horney, Osgood, & Marshall, 1995; McGloin et al., 2007). This theory implies that changes in informal social bonds over time, such as marriage, will influence the levels of specialization/versatility and escalation in offending patterns. The social capital gained from these relationships will affect the types of offenses, if any, that an offender engages in (Sampson & Laub, 1993; Sampson & Laub, 2005; McGloin et al., 2007). For example, McGloin and colleagues (2007) found marriage and being under community

supervision to be related to higher levels of specialization while drug use was associated with higher levels of versatility in offending.

## **CHAPTER 3: THE CURRENT STUDY**

### **Research Questions & Hypotheses**

Despite the multitude of studies that have been conducted regarding the criminal careers of offenders, few studies have examined the patterns of specialization or escalation in the criminal careers of homicide offenders or the differences between gang members who kill versus nongang members who kill. This differentiation is important because gang members are known to commit significantly higher rates of crime than nongang members and are responsible for a disproportionate amount of homicides in large cities (Curry, 2000; Curry & Decker, 2003; Decker & Pyruz, 2010; Egley Jr. & O'Donnell, 2009; National Gang Intelligence Center, 2009). Understanding the course of the criminal career for homicide offenders and the differences in patterns of offending for gang and nongang members can help policy makers identify appropriate points of intervention in criminal behavior for preventative criminal justice policies (Blumstein et al., 1986; LeBlanc et al., 1991; Piquero et al., 2003). These points of intervention might be different for gang and nongang members since research has established that there are dissimilarities in the patterns of offending between gang and nongang members in terms of frequency and seriousness (Dukes et al., 1997; Curry & Decker, 2003; Esbensen & Huizinga, 1993; Esbensen et al., 1993; Thornberry, 1998). Additionally, there is evidence that gang violence is unique in that it is often collective and, due to its retaliatory nature, acts as a contagion that spreads within gang social networks (Decker, 1996; Papachristos, 2009; Pizarro & McGloin, 2006). Therefore, this research could be helpful in developing policies tailored to each type of offender and his or her offending patterns. Such research might also be beneficial in formulating policies related to preventing particular types of crime and be targeted towards



particular types of offenders, such as gang members (Armstrong & Britt, 2002; Blumstein et al., 1988; Cohen, 1986).

In order to contribute to the body of knowledge on criminal careers, this study examines the arrest histories of adult male homicide offenders.<sup>1</sup> It determines whether patterns of specialization or escalation are present leading up to the homicide event, and if a chronological sequence of offense types emerges. This study also differentiates between gang and nongang homicide offenders to see if there are differences in their patterns of offending. The primary research question is: Are there significant differences in patterns of specialization, escalation or de-escalation of seriousness between gang and nongang members prior to committing homicide? Based on prior research, it is hypothesized that gang members will exhibit versatility, escalation and de-escalation in their offending patterns while nongang members exhibit specialization. Although there is little research on specialization and escalation in the criminal careers of gang members, gang researchers tend to support that gang members exhibit versatility in their offending patterns despite their tendency to engage in more serious offending (Klein, 1995; Klein et al., 1997; Loeber & Farrington, 1998; Maxson & Klein, 2006). This hypothesis is also in line with Sampson and Laub's (1993) age graded theory of social control. Research has shown that gang members tend to lack stable social bonds in their life (Hill et al., 1999; Hill et al., 2001; Li et al., 2002; Maxson et al., 1998; Thornberry, 1998). Therefore, we would expect results for gang members to emulate those individuals that lacked social bonds in McGloin and colleagues' (2007) study of local life circumstances and versatility.

### **The Study Site**

The city of Newark, New Jersey has a population of over 277,000 with over 100,000 households (U.S. Census Bureau, 2010). More than 80 percent of the population is non-white

with the predominant racial groups being African American (over 49.8 percent) and Hispanic (33.8 percent). In 1967, Newark experienced one of the most destructive riots in the history of the United States; these riots are cited as the major historical turning point that has led to the concentration of disadvantage in the city (Mumford, 2007; Stummer, 1994). The median household income in 1999 was 26,913 dollars, and approximately 25 percent of families earned an income that was below the poverty line (U.S. Census Bureau, 2000).<sup>2</sup> In terms of crime, Newark is one of the most violent cities in the State of New Jersey with a homicide rate of 28.7 per 100,000 inhabitants (Federal Bureau of Investigation, 2009). Over the last decade, Newark has had an average homicide rate of 29.4 per 100,000 which is approximately seven times the average rate for the state of New Jersey and more than five times the national average rate (Federal Bureau of Investigation, 1999-2009). Several contributing factors have been discussed in relation to the occurrence of homicides in Newark including a growing gang subculture, the prevalence of drug markets, and the increasing availability of weapons (Pizarro, 2008; Queally & Mascarenhas, 2010).

## **Data**

The data from this study was collected as part of a violence reduction initiative called the Greater Newark Safer Cities Initiative [GNSCI] (Pizarro & Sousa, 2008). The GNSCI sought to determine the underlying causes of homicide in Newark by examining data collected from past homicide case files investigated by the Newark Police Department's Homicide Unit (see Pizarro & Sousa, 2008 for a detailed description). Data was collected for 1999 to 2005 and includes a wealth of information regarding the details surrounding each incident (i.e. date, time, location, circumstances, victim-offender relationship, weapons, motives) and background information of the victims and offenders (i.e. demographics, gang affiliation). Official criminal histories were

also collected and coded by researchers; information collected included the dates of arrest and the types of offenses committed (Pizarro & Sousa, 2008).

In order to ensure the reliability of the data, data collection protocols and instruments were utilized to make certain that the same information was collected from each homicide investigation file (Pizarro & McGloin, 2006). Additionally, all research assistants underwent extensive training regarding data coding and collection prior to their examination of the homicide files. Each homicide file was coded by two research assistants. Inconsistent coding was discussed with a senior member of the research team, and sometimes the investigating detective, in order to reach a consensus.

### **The Sample**

The sample consists of 140 male homicide offenders that committed at least one homicide during the 1999 to 2005 study period in Newark, New Jersey.<sup>3</sup> This includes 81 nongang members and 59 gang members. Descriptive statistics are listed in Table 2. The mean age of the sample at the time of the homicide is 27.37 although nongang members were found to be significantly older than gang members (i.e. average age for gang members = 23.88; average age for nongang members = 29.91;  $t = 5.217, p < .001$ ). The majority of offenders were between the ages of 19 and 28 at the time of the homicide (64.3 percent). The mean number of arrests for the sample is 9.01 (SD = 4.075). The sample is predominantly African American (97.9 percent). Gang and nongang members did not differ significantly in their racial composition or number of arrests (see Table 3).

### **Methodology**

This study's analysis method is modeled after Armstrong and Britt's (2004) study on specialization and escalation. In order to answer the research questions, four steps are taken.

First, the individual time series arrest data is pooled into a master database for the computation of multinomial logit models using PASW Statistics Version 18.0. Second, these models are used to calculate the predicted probability of a particular offense type being committed at each arrest. In order to calculate these probabilities, the dependent variable of each model must be offense type at each arrest. Thus, the unit of analysis is arrests. Third, the predicted probabilities are used to calculate the transition probabilities, or the probability of switching from one offense type to another across successive arrests. Fourth, the transition probabilities are placed into tables and examined to determine the tendency to specialize, escalate, and de-escalate leading up to the homicide.

## **Measures**

*Dependent Variable* The dependent variable is *offense type* (See Table 4 for coding schema). Offense type refers the offense type that is recorded for each arrest in each offender's criminal history. For each arrest, offense type is coded based on the most serious offense for each arrest which is consistent with prior research (Blumstein et al., 1988; Miethe, Olson, & Mitchell, 2006; Lo et al., 2008). Following previous research (i.e., Armstrong, 2008; Armstrong & Britt, 2004; Blumstein et al., 1988; Britt, 2000) crime type is divided into four categories: violent, property, drug, and miscellaneous (see Table 4 for description of offenses coded into each category).<sup>4</sup>

*Independent Variables* The models include two independent variables (see Table 5 for coding schema). The main independent variable is gang affiliation. Individuals were considered to be gang affiliated if they were identified by the police as a gang member.<sup>5</sup> Arrest number is a ratio level variable and represents an arrests' position in the sequence of the criminal career (i.e.

first arrest, second arrest, third arrest, etc.). It was necessary to include arrest number in order to calculate the predicted probability of a particular crime type at each arrest.

### **Analysis Strategy**

The current study utilizes multinomial logistic regression in order to identify patterns of specialization and escalation (Long, 1997). The benefit of multinomial logistic regression is that the outcome variable can have more than two categories. It also allows for the examination of the effects that independent variables might have on the offense types committed at each arrest. This method has been used in recent studies that have examined specialization and escalation in criminal careers (Armstrong and Britt, 2002; Armstrong and Britt, 2004; Britt, 2000; Lo et al., 2008).

The analysis includes offenders with at least five arrests<sup>6</sup> and examines the patterns of the last five arrests leading up to the homicide event.<sup>7</sup> A multinomial logit model labeled as Model 1 is estimated for the sample with arrest number as the independent variable and offense type as the dependent variable.<sup>8</sup> This model generates the predicted probabilities of committing a particular offense type at each arrest for the entire sample. Next, a multinomial logit model labeled as Model 2 is computed that adds gang membership as an independent variable. This model calculates the predicted probabilities of committing a particular offense type at each arrest for gang and nongang members. These probabilities are used to compute the probability of transitioning from one offense type to another across arrests.

The probability of specializing, or repeating an offense type is calculated by multiplying the probability of committing an offense type at a particular arrest by the probability of committing the same offense type at the following arrest (Armstrong & Britt, 2004). For example, in order to calculate the predicted probability of specializing in property crimes during

Transition Four (the transition between Arrest Four and Arrest Five), the probability of committing a property crime at Arrest Four is multiplied by the probability of committing a property crime at Arrest Five. In order to calculate the probability of escalating, the probability of committing a particular offense type at an arrest is multiplied by the probability of committing a more serious crime at the next arrest (Armstrong & Britt, 2004). For example, to calculate the probability of escalating from a drug crime to a property crime during Transition Four, the probability of committing a drug crime at Arrest Four is multiplied by the probability of committing a property crime at Arrest Five. The probability of de-escalating is found by multiplying the probability of committing a particular offense type at an arrest by the probability of committing a less serious offense type at the next arrest (Armstrong & Britt, 2004). For example, to find the probability of de-escalating from a violent to a miscellaneous crime during Transition Four, the probability of committing a violent crime at Arrest Four is multiplied by the probability of committing a miscellaneous crime at Arrest Five.

## CHAPTER 4: FINDINGS

Model fit statistics are listed in Table 6. In Model 1, including arrest number significantly improves the model ( $\chi^2 = 12.362, p < .001$ ). This model is used to generate the predicted probabilities of committing each offense type at each arrest. These probabilities are shown in Figure 1 in order to illustrate the trends of committing each offense type across arrests. Drug crime has the highest probability overall and decreases steadily across the last five arrests preceding the homicide. Violent crime has the second highest probability of occurring overall and increases sharply across the last five arrests. Property crime was the third most likely to occur and declined steadily across arrests. Miscellaneous crimes had the lowest probability of occurring and stayed steady across arrests.

Table 7 lists the predicted probabilities of specialization, escalation, and de-escalation across the last four transitions preceding the homicide for the sample. The mean probability of specializing in any offense across the four transitions is .327.<sup>9</sup> This indicates that there is still a considerable switching between different offense types across arrests in the criminal career. Specialization in drugs had the highest probability of occurring across all four transitions leading up to the homicide although this probability did decrease across transitions (see Table 7). Escalating from a drug to a violent crime had the next highest probability of occurring and these probabilities increased across transitions. De-escalating from violence to drugs had the third highest probability of occurring and this also increased across transitions (see Table 7). Another trend worth noting is the increase in the probability of specializing in violence across transitions. Probabilities of escalation or de-escalation involving violence tended to increase across arrests overall while probabilities of escalation or de-escalation involving property crimes tended to decrease across transitions. Escalating from property to violent crime and de-escalating from

violent to property crime decreased slightly across transitions (see Table 7). Arrest transitions that involved specialization in, escalation from, or de-escalation to miscellaneous offenses had probabilities that remained relatively stable across arrests.

In Model 2, gang membership is added. The model fit statistics in Table 6 indicate that including arrest number and gang membership significantly improves the model ( $\chi^2 = 32.269$ ,  $p < .001$ ). The predicted probabilities of committing each offense type at each arrest for gang and nongang members are listed in Figures 2 and 3. The probability of committing a violent crime increases across arrests while the probability of drug crime decreases across arrests for nongang members (see Figure 2). Drug crime has the highest probability for the first two arrests, then violent crime crosses over at the third transition and becomes the most likely to occur in the last two arrests for nongang members. Nongang members overall have higher probabilities of committing violent crimes across arrests than gang members. Conversely, drug crime has the highest probability of occurring for gang members and exhibits some decline between the second and fourth arrests for gang members (see Figure 3). Gang members have higher probabilities of committing drug crime across arrests than nongang members. Property crime declines across arrests for both groups although the decrease is more prominent for nongang members. The probability of committing a miscellaneous crime stays steady overall, although there is a slight decline from the second to third arrests and then increases again at the fourth arrest for both gang and nongang offenders.

The transition probabilities are listed in Table 8. The mean probability of specializing in any offense was .305 for nongang members and .376 for gang members. Specializing in drug crimes has the highest probability across the last four transitions preceding the homicide for gang members; these probabilities decrease across transitions. Escalating and de-escalating between



drug and violent crimes across transitions had the next highest probabilities of occurring. For nongang members, specialization in drugs had the highest probability of occurring during the first transition. In the second transition, escalation to violence had the highest probability of occurring. This was followed by specialization in violence during the last two transitions immediately preceding the homicide. For both gang and nongang members, switching between drug and violent crime across all four transitions had the next highest probability of occurring. The probability of specializing in violence increases across transitions for both groups; however, nongang members have higher probabilities of repeating violent crimes than gang members overall. Nongang members had higher probabilities of specializing in property crimes across the last four arrest transitions than gang members; however, both groups experienced decreases in these probabilities across transitions overall.

The odds ratios computed by Model 2 are listed in Table 9 to give further understanding to the effects that gang status and arrest number have on offense type. Nongang members were 34.6 percent less likely to be arrested for drug crimes compared to a miscellaneous crime than gang members. Nongang members were also 53.2 percent more likely to be arrested for property crime and 24.0 percent more likely to be arrested for violent crime relative to miscellaneous crime than gang members. Drug crimes and property crimes were more likely to occur earlier on in the arrest sequence while violent crimes became more prevalent towards the end of the arrest sequence. For instance, going from the first to the second arrest decreased the odds of committing a drug crime by .016 percent, decreased the odds of committing a property crime by .131 percent, and increased the odds of committing a violent crime by 14.9 percent. The odds ratios are consistent with the trends found in the predicted probabilities computed by Model 2.

## **CHAPTER 5: DISCUSSION AND CONCLUSION**

This study sought to determine the types of offenses that homicide offenders commit leading up to the homicide event and if there are differences between gang and nongang members who kill. More specifically, the study examined whether patterns of specialization (repeating the same offense type over time), escalation (switching to more serious offense types over time), or de-escalation (switching to less serious offense types over time) emerged leading up to the homicide for gang and nongang members. Multinomial logistic regression models were used to generate predicted probabilities of committing a particular offense type at each arrest for a sample of 140 offenders in order to answer this question.

It was hypothesized that nongang members would exhibit specialization while gang members would be more versatile based on prior research that found gang members tend to engage in a variety of offense types and have fewer prosocial bonds that would limit them to a specific crime type. The findings do not support the hypothesis. Indeed, the findings of this study are not similar to the evidence presented in prior research. This could be the result of the population studied. This study focused on one of the most serious types of offenders: those who have committed homicide. Few past studies on specialization and escalation have examined this unique population and have differentiated between groups of offenders (DeLisi & Scherer, 2006; Trojan & Salfati, 2010; Wright, Pratt, DeLisi, 2008).

Overall, the results suggest that the sample engaged in a considerable amount of versatility in their offending leading up to the homicide; however, some evidence of specialization was found. Both groups were heavily involved in drugs and violence, yet gang members were more likely to be arrested for drug crimes while nongang members were more likely to commit violent offenses. This is contrary to research that proposes that gang members

engage in more serious offenses than nongang members (Dukes et al., 1997; Esbensen et al., 1993; Hill et al., 1999; National Gang Intelligence Center, 2009; Thornberry, 1998).

Specializing in drugs across all four arrest transitions was most likely for gang members based on the predicted probability that a gang member would repeat a drug crime from one arrest to another (probability ranges from .251-.320). A possible explanation of this could be related to the changing nature of gangs. Decker, Katz, and Webb (2008) recently found that increases in gang organization are related to increases in gang member involvement in drug sales. Thus, it is possible that gangs in Newark are more organized resulting in a higher tendency for gang members in Newark to engage in drug crimes. In other words, a gang member's bond to an organized gang (group of antisocial peers) could influence his or her involvement in drugs (Sampson & Laub, 1993).

Conversely, nongang members had the highest probability of specializing in drugs for the first arrest transition (probability = .161), escalate to violence in the second transition (probability = .157), and then specializing in violence over the last two transitions (probability ranges from .143-.172). While the probability of specializing in drugs decreases across transitions for gang members, the probability of escalating to or specializing in violence increases across transitions for both groups. The increase in violence across transitions was more pronounced for nongang members than gang members. This could be due to a lack of social bond to any prosocial or antisocial institution (Sampson & Laub, 1993). Another alternative could be that nongang members suffer from neurological deficiencies in an absolute or relative sense compared to gang members (Moffitt, 1993). These neurological deficiencies would make it difficult for nongang members to resolve conflicts or deal with other problems in a nonviolent way. Thus, violent crime serves an expressive purpose for nongang members

throughout their criminal careers, and the resulting homicide is yet another act of expressive violence. Gang members' participation in violence might not be the result of neurological deficiencies but could have an instrumental role in protecting their drug business activities. This does not mean that none of the gang members suffered from neurological deficiencies, but research has shown that the duration of membership for a typical gang member lasts about one year or less (Battin et al., 1998; Esbensen & Huizinga, 1993; Hill et al., 2001; Peterson et al., 2004). This implies that many gang members could be adolescent limited offenders.

Although most researchers focus on the developmental perspective, the age graded theory of social control, and general theory of crime in order to explain patterns of specialization and escalation, other theoretical perspectives might be beneficial in understanding these patterns. For example, there could be something inherently different about the lifestyles and routine activities of gang and nongang members that could explain the differences in their patterns of specialization and escalation (Cohen & Felson, 1979; Hindelang et al., 1978). Unfortunately, detailed information regarding the routine activities of this sample was not readily available for analysis.

It is clear that the sample in this study was heavily involved in drugs and violence leading up to the homicide. While gang members have a higher tendency to commit drug crimes leading up to the homicide event, nongang members are involved in drugs initially and then escalate to violence. Thus, formulating an intervention that would target drug offenders, especially gang drug offenders, would be beneficial. Although an intervention targeting drug offenders might be beneficial if implemented early enough for nongang members, an additional step needs to be taken once those individuals have escalated to violence. Escalating from drugs to violence should serve as a warning sign that violence might escalate into a more lethal form.

This study is not without its limitations; however. First, the study utilized official data provided by the Newark Police Department for its analysis. Relying on official data alone can be problematic. For example, there is evidence that a substantial amount of crime, particularly less serious crime, is not reported to police (Skogan, 1977; Kirk, 2006). In addition, some crime that is reported is not officially recorded (Thornberry & Krohn, 2000; Kirk, 2006). Also, due to the discretionary nature of police work, one could argue that official arrest data is a reflection of police activity rather than an indicator of an individual's criminal activities (Bursik, 1980; Kirk, 2006). Some researchers may argue that gang members are not as heavily involved in drugs as official data sometimes implies (Bjerregaard, 2010; Klein, Maxson, & Cunningham, 1991). The patterns found could be the result of differential enforcement of drug laws against gang and nongang members. Thus, what appears to be specialization in drugs for gangs could actually be heavier enforcement of drug laws against gang members compared to nongang members. Gang specialization in drugs could also be a reflection of law enforcement recording practices limiting the reporting of gang-related offenses to only a few categories that are believed to be stereotypical of gang members (Klein & Maxson, 2006). Despite the criticisms of official data, Elliot (1994) argues that both self-report and official data has its strengths and weaknesses and that both are important to understanding delinquency. Having access to self-report data in addition to the official arrest records of the sample could increase the validity of the study. Future studies should utilize both types of data in order to comprehend the timeline and extent of offending in a group of offender's criminal careers.

Second, the analysis only focuses on the last five arrests preceding the homicide. The individuals in the sample varied in the number of offenses they committed prior to the homicide (range 5-25). Therefore, the last five arrests for some individuals was their entire criminal career

while for others it was only a small proportion. It is possible that looking beyond five arrests would uncover more patterns regarding how the criminal career progresses up to the homicide. However, in order to preserve a larger sample size in this study, it was necessary to limit the number of arrests examined. The analysis looks at the sequential order of offenses rather than the proportion of the criminal career that fell into a certain arrest category. It was necessary to examine the sequential order of arrests to view possible patterns of escalation or de-escalation, considering the entire criminal career could have affected how much specialization was observed and the types of offenses that the sample specialized in.

The findings of this study could be elaborated in future studies. For example, future studies might benefit from examining specialization and escalation separately since each aspect might be better analyzed with different methods. Researchers have suggested multiple different ways to improve the methods of studying specialization and escalation in the criminal career (Armstrong & Britt, 2004; Farrington et al., 1988; Blumstein et al., 1988; Britt, 1996; Liu et al., 2010; Nieuwbeerta et al., 2011; Osgood & Schreck, 2007). It is difficult to look at both aspects simultaneously since escalation requires information on crime types to be in chronological order while specialization, depending on how it is defined (i.e. sequential specialization refers to repeating the same offense across adjacent time periods vs. probabilistic specialization which considers how often an offender repeats the same offense over the course of the entire criminal career regardless of order), does not (Lo et al., 2008). By considering both the proportion of offenses that are classified as a particular crime type and the sequence of those offenses, one could get a more accurate estimate of the degree of specialization and escalation that exists over the course of the criminal career.

Researchers should also consider both broad and narrow categories of crime in order to obtain more detailed information regarding the patterns of specialization, escalation, and de-escalation. Even though researchers have pointed out that having too many categories could make it difficult to find patterns, having too few categories also has its difficulties. This study only considered four crime types in its analysis. It is possible that individuals specialize in even more specific types of crime (i.e. aggravated assaults rather than violent crimes) or escalated/de-escalated within a crime category (Armstrong & Britt, 2004; Blumstein et al., 1988).

Another important consideration is the threshold for specialization and escalation. What degree of specialization or escalation must exist in order to identify that an important pattern is emerging? This question still has not yet been addressed satisfactorily in research. For example, although Farrington and colleagues (1988) and Blumstein and colleagues (1988) formulated a method for measuring the degree of specialization and escalation in a criminal career, neither defines how large each coefficient needs to be in order to state that either phenomena exists. Studies that have used probabilities (i.e. transition matrices or predicted probabilities) have not discussed how large or small a probability should be in order to consider a trend as important. Kempf (1987) classified individuals as specialized if more than half (50 percent) of the offenses committed fell into the same category. However, if 40 percent of an individual's criminal career consists of drug offenses, 30 percent of his or her offenses are violent, and the remaining 30 percent is property, is the individual still not considered a specialist in drugs? This issue should be addressed in further research.

In conclusion, this study supports that differences do exist between different types of offenders in their patterns of offending; thus, it would be beneficial to continue to study specific groups of offenders in order to formulate policies that will work more effectively for each type of

offender. Some evidence of specialization and escalation was found among gang and nongang homicide offenders. It is important to examine specialization and escalation separately and better define the magnitude of evidence needed to confirm that a pattern of specialization or escalation exists. Further research on aspects of the criminal career is needed in order to uncover the patterns of offending and inform policy makers on what strategies might be best to combat crime.



## **APPENDIX**

<b>Table 1: Summary of Specialization and Escalation Literature</b>				
<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
Wolfgang, Figlio, & Sellin	1972	Specialization	Juveniles, Pennsylvania	Supports versatility; most common was non-index or theft regardless of the preceding offense.
Rojek & Erickson	1982	Escalation	Juveniles, Arizona	Found versatility in offending, no evidence of escalation.
Kempf	1987	Specialization	Juveniles, Pennsylvania	Evidence supports versatility in offending.
Blumstein, Cohen, Das, & Moitra	1988	Specialization and Escalation	Adult offenders, Michigan	Small amount of specialization in burglary, larceny, and drugs. No support for escalation.
Farrington, Snyder, & Finnegan	1988	Specialization	Juveniles, Arizona and Utah	Small amount of specialization found in status offenses, property offenses, and drugs.
Stander, Farrington, Hill, & Altham	1989	Specialization	Adults, England	Some specialization found. Sex offenders exhibited the highest tendency to specialize.

**Table 1 Continued: Summary of Specialization and Escalation Literature**

<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
LeBlanc & Frechette	1989	Specialization, Escalation, and Sequence of Offense Types	Juveniles, Canada	Found versatility and escalation in offense seriousness over time. Established a sequence of offense types starting with petty crimes/property crimes and escalating to serious violent crimes.
Tracy, Wolfgang, & Figlio	1990	Specialization	Juveniles, Pennsylvania	Evidence supports versatility in offending.
LeBlanc, Cote, & Loeber	1991	Escalation & Sequence of Offense Types	Juveniles, Canada	Found evidence of escalation from less serious (minor thefts/status offenses) to more serious offense types (aggression/vandalism/major thefts)
Davis	1992	Specialization and Escalation	Juveniles and Adults, Massachusetts	Some specialization found among youths in auto theft. Adults show some escalation in alcohol offenses. Juveniles exhibit escalation at beginning of offending careers.

**Table 1 Continued: Summary of Specialization and Escalation Literature**

<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
Loeber	1993	Escalation and Sequence of Offense Types	Juveniles, Pennsylvania	Established three sequential pathways starting with minor behaviors (stubbornness, minor thefts and minor aggression) and moving to more serious behaviors (status offenses, moderate delinquency, physical violence).
Britt	1994	Specialization	Adults and Juveniles, United States	Data supports versatility in offending.
Elliot	1994	Sequence of Offense Types	Juveniles, United States	Found multiple sequences often starting with minor delinquency and then escalation to drug, alcohol, or index crimes.
Lattimore, Visser, & Lister	1994	Specialization	Juveniles, California	Small amount of specialization found for burglary.
Britt	1996	Specialization and Escalation	Adults, Michigan	Weak support for specialization and escalation.

**Table 1 Continued: Summary of Specialization and Escalation Literature**

<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
Britt	1996	Specialization and Escalation	Adults, Michigan	Weak support for specialization and escalation.
Ayers, Williams, Hawkins, Catalano, Abbott	1999	Escalation	Juveniles, Washington	Moderate percentage of juveniles exhibited escalation. Different correlates for escalation and de-escalation found for males and females.
Piquero, Paternoster, Mazerolle, Brame, & Dean	1999	Specialization	Juveniles, Pennsylvania	Found increases in specialization in violent, property, and miscellaneous offenses over the course of criminal careers.
Britt	2000	Specialization & Escalation	Juveniles, California	Little support for specialization and escalation found after controlling for offender background characteristics.

**Table 1 Continued: Summary of Specialization and Escalation Literature**

<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
Britt	2000	Specialization & Escalation	Juveniles, California	Little support for specialization and escalation found after controlling for offender background characteristics.
Williams & Arnold	2002	Specialization	Juveniles, Canada	Small amount of specialization found in burglary and property offenses early in criminal career. Specialization in theft and violence increase as number of arrests increases.
Armstrong & Britt	2002	Specialization & Escalation	Juveniles, California	Little support for specialization and escalation after controlling for offender background characteristics.
Armstrong & Britt	2004	Specialization & Escalation	Juveniles, California	Little support for specialization and escalation after controlling for offender background characteristics.
Brame, Paternoster, & Bushway	2004	Specialization	Juveniles, Pennsylvania	Supports versatility in offending.

**Table 1 Continued: Summary of Specialization and Escalation Literature**

<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
Brame, Paternoster, & Bushway	2004	Specialization	Juveniles, Pennsylvania	Supports versatility in offending.
McGloin, Sullivan, Piquero, & Pratt	2007	Specialization	Adults, Nebraska	Marriage and community supervision are associated with higher levels of specialization while alcohol or drug use are associated with high levels of versatility.
Lo, Kim, & Cheng	2008	Specialization	Adults, Ohio	Evidence supports specialization; highest level of specialization seen with violent and drug crimes.
Wright, Pratt, & DeLisi	2008	Specialization	Adult Homicide Offenders, United States	Moderate amount of specialization found among single and multiple victim homicide offenders.
Liu, Francis, & Soothill	2010	Escalation	Juveniles and Adults, Great Britain	Increases in age associated with de-escalation while increase in criminal experiences is associated with escalation.

**Table 1 Continued: Summary of Specialization and Escalation Literature**

<i>Authors</i>	<i>Year</i>	<i>Focus</i>	<i>Sample</i>	<i>Findings</i>
Trojan & Salfati	2010	Specialization	Adult Homicide Offenders, United States	Found evidence of specialization among homicide offenders. Serial homicide offenders were more likely to specialize in instrumental than violent offenses.
Nieuwbeerta, Blockland, Piquero, & Sweeten	2011	Specialization	Juveniles and Adults, the Netherlands	Found evidence supporting a diversity curve with increasing diversity/versatility during youth and increasing specialization in adulthood.



**Table 2: Descriptive Statistics**

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***Gang Affiliation***

No	57.9%
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Yes	42.1%
-----	-------

***Race***

Black	97.9%
-------	-------

Nonblack	2.1%
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***Age at the Time of Homicide***

Range: 16-59
Mean: 27.37
Standard Deviation: 7.891

***Number of Arrests***

Range: 5-25
Mean: 9.01
Standard Deviation: 4.075

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**Table 3: Descriptive Comparison of Gang/Nongang Members**

Variables	Gang Members	Nongang Members
<i>Mean Age</i>	23.88*	29.91*
<i>Mean Number of Arrests</i>	8.66	9.27
<i>Race</i>		
<i>Black</i>	96.6%	98.8%
<i>Nonblack</i>	3.4%	1.2%

\*Statistically significant,  $p < .001$ .

**Table 4: Dependent Variable*****Offense type***

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1 = Miscellaneous

Alcoholic beverage under legal age, attempt to elude police, bail jumping, contempt, conservation violation, criminal mischief/simulation/trespassing, disorderly conduct, escape, failure to appear/possess motorvehicle certificate, false application/public alarms/report to police, fraud or impersonation, harassing communication, harassment, hindering apprehension, intimidation, obstructing administration of the law/justice/public passage, parole violation, promoting gambling, prostitution, resisting arrest, riot/failure to disperse, sale of alcoholic beverages without a license, solicit to prostitution, threaten to commit a crime, unsworn falsification, using false identification, false alarm.

2 = Drugs

Controlled substance on school property, conspiracy to commit a drug crime, dangerous drugs, drug offense, possess controlled substance or analog/drug paraphernalia/hallucinogen/marijuana/narcotics equipment, loitering to obtain/sell controlled substance in public, manifest purpose to obtain controlled substance, manufacture/distribute controlled substance, possess/sell cocaine/heroine, possessing/distributing a controlled substance within 500 feet of a school, possess/distribute hypodermic needles, possessing/using a controlled substance

3 = Property

Attempt to commit vehicle theft, burglary, counterfeiting, fraudulent/illegal use of a credit card, larceny, possess/manufacture burglary tools, possess stolen property/vehicle, puse snatching (no force), receiving stolen property, shoplifting, theft, theft of moveable property, theft of

**Table 4 (cont'd)**

services, vehicle theft

4=Violent

Aggravated assault, aggravated assault of a police officer, attempt to commit sexual assault, carjacking, carrying prohibited, conspiracy to commit criminal homicide/robbery, criminal attempt to commit carjacking, criminal sexual contact, homicide, manslaughter, person not to have weapons, possess certain weapons or bullets/defaced firearm/firearms/handgun/sawed-off shotgun/weapon, possess firearm or weapon for unlawful purpose, purposely cause death, robbery, sexual assault, simple assault, terroristic threats, threaten to kill

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**Table 5: Independent Variables Coding**  
***Gang Affiliation***

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0 = No

1 = Yes

***Arrest Number***

Ratio level variable

Range: 1-5

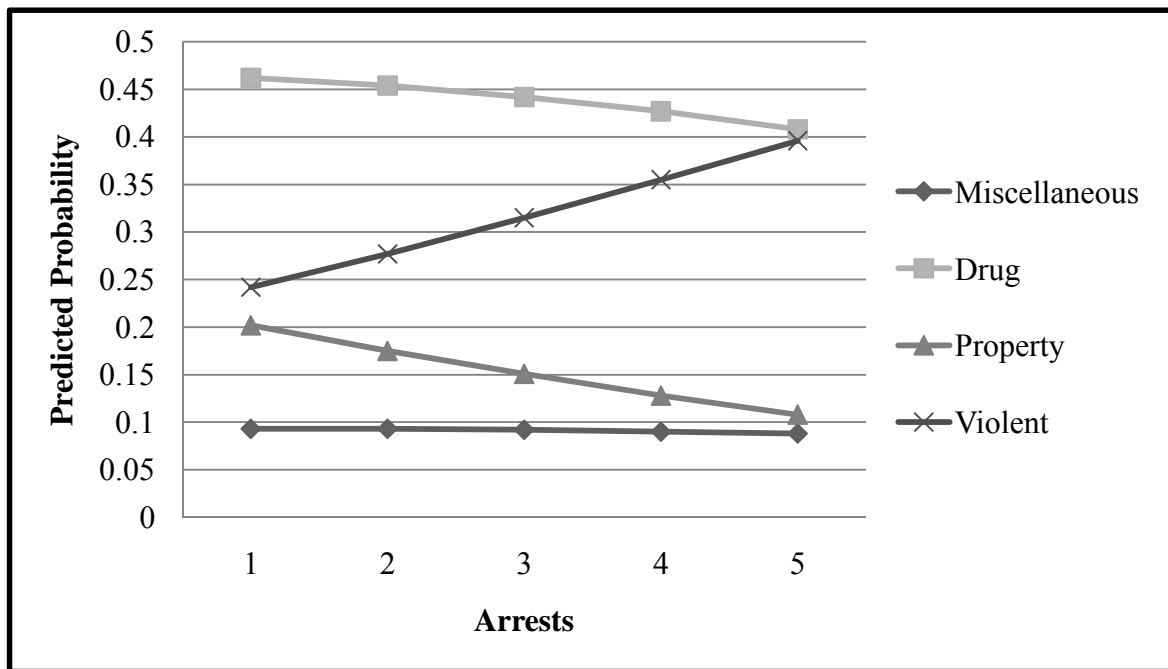
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**Table 6: Model Fit Statistics**

<i>Model</i>	<i>-2 Log Likelihood</i>	<i><math>\chi^2</math></i>
<i>Model 1</i>		
Intercept Only	88.978	
Arrest No.	76.616**	12.362**
<i>Model 2</i>		
Intercept Only	169.059	
Gang + Arrest No.	136.790**	32.269**

\*\*Statistically significant,  $p < .001$

**Figure 1: Predicted Probabilities for Type of Offense Across Arrests (Model 1)**



**Table 7: Transition Probabilities for Specialization, Escalation, and De-escalation for Last Four Arrest Transitions Preceding Homicide (Model 1)**

<i>Specialization</i>	<i>Transition 1</i>	<i>Transition 2</i>	<i>Transition 3</i>	<i>Transition 4</i>
Miscellaneous	0.009	0.009	0.008	0.008
Drug	0.210***	0.201***	0.189***	0.174***
Property	0.035	0.026	0.019	0.014
Violent	0.067	0.087	0.112	0.141
<i>Escalation</i>				
Miscellaneous-Drug	0.042	0.041	0.039	0.037
Misc-Property	0.016	0.014	0.012	0.108
Misc-Violent	0.026	0.029	0.033	0.036
Drug-Property	0.081	0.069	0.057	0.046
Drug-Violent	0.128**	0.143**	0.157**	0.169**
Property-Violent	0.056	0.055	0.054	0.051
<i>De-Escalation</i>				
Violent-Property	0.042	0.042	0.040	0.038
Violent-Drug	0.110*	0.122*	0.135*	0.145*
Violent-Miscellaneous	0.023	0.025	0.028	0.031
Property-Drug	0.092	0.077	0.064	0.052
Prop-Misc	0.019	0.016	0.014	0.011
Drug-Misc	0.043	0.042	0.040	0.038

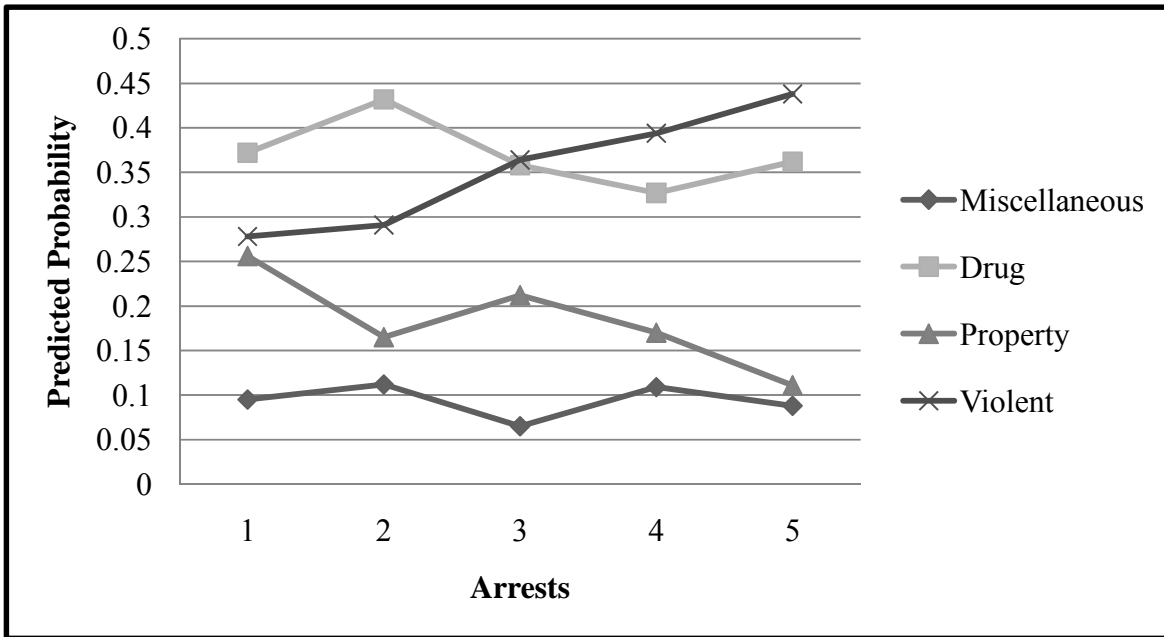
\*\*\*Highest Probability

\*\*Second Highest Probability

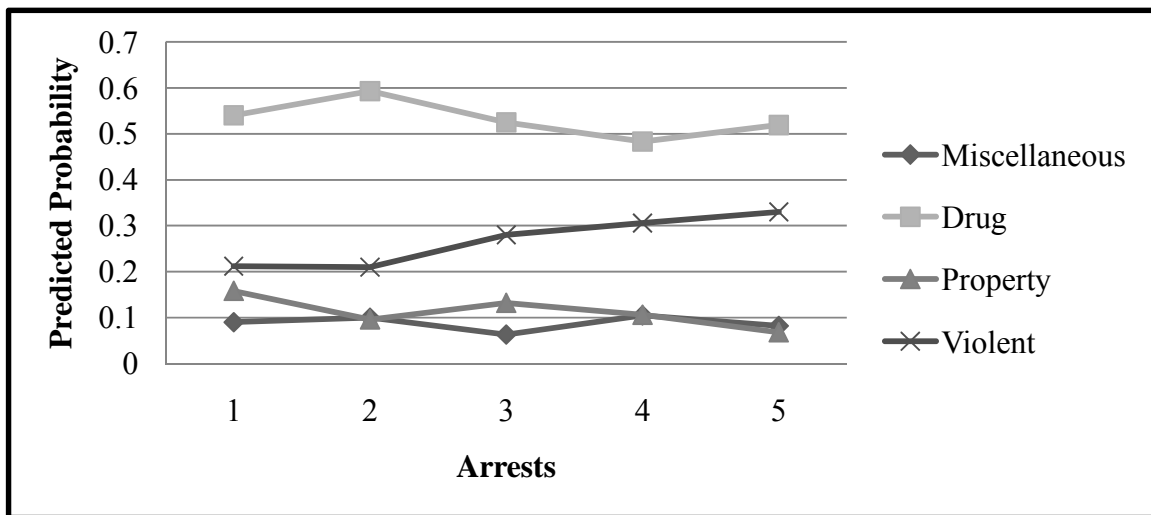
\*Third Highest Probability



**Figure 2: Predicted Probability of Offense Type Across Arrests (Nongang, Model 2)**



**Figure 3: Predicted Probability of Offense Type Across Arrests (Gang, Model 2)**



**Table 8: Transition Probabilities for Specialization, Escalation, and De-escalation for Last Four Arrest Transitions Preceding Homicide (Model 2)**

	<i>Nongang</i>				<i>Gang</i>			
<i>Specialization</i>	<i>Transition 1</i>	<i>Transition 2</i>	<i>Transition 3</i>	<i>Transition 4</i>	<i>Transition 1</i>	<i>Transition 2</i>	<i>Transition 3</i>	<i>Transition 4</i>
Miscellaneous	0.011	0.007	0.007	0.009	0.009	0.006	0.007	0.009
Drug	0.161***	0.155**	0.117	0.118*	0.320***	0.311***	0.253***	0.251***
Property	0.042	0.035	0.036	0.019	0.015	0.013	0.014	0.007
Violent	0.081	0.106*	0.143***	0.172***	0.044	0.059	0.086	0.101*
<i>Escalation</i>								
Miscellaneous-Drug	0.041	0.040	0.021	0.039	0.053	0.052	0.030	0.054
Misc-Property	0.016	0.024	0.011	0.012	0.009	0.013	0.007	0.007
Misc-Violent	0.028	0.041	0.026	0.048	0.019	0.028	0.019	0.035
Drug-Property	0.061	0.091	0.061	0.036	0.052	0.078	0.056	0.033
Drug-Violent	0.108	0.157***	0.141**	0.143**	0.113*	0.166**	0.161**	0.159**
Property-Violent	0.074	0.060	0.083	0.074	0.033	0.027	0.040	0.035
<i>De-Escalation</i>								
Violent-Property	0.046	0.062	0.062	0.044	0.020	0.028	0.030	0.021
Violent-Drug	0.120**	0.104	0.119*	0.143**	0.126**	0.110*	0.135*	0.159**
Violent-Miscellaneous	0.031	0.019	0.040	0.035	0.021	0.013	0.029	0.025
Property-Drug	0.110*	0.059	0.069	0.061	0.094	0.050	0.064	0.055
Prop-Misc	0.029	0.012	0.023	0.015	0.016	0.006	0.014	0.009
Drug-Misc	0.042	0.028	0.039	0.029	0.054	0.037	0.055	0.040

\*\*\*Highest Probability

\*\*Second Highest Probability

\*Third Highest Probability

**Table 9: Effect of Gang Status and Arrest Number on Offense Type**

<i><b>Offense Type</b></i>	<i><b>Odds Ratio</b></i>
<b>Drug</b>	
Nongang Member	.654
Arrest Number	.984
<b>Property</b>	
Nongang Member	1.532
Arrest Number	.869
<b>Violent</b>	
Nongang Member	1.240
Arrest Number	1.149

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## Notes

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<sup>1</sup> Arrest data was utilized rather than conviction data in order to avoid bias that may be introduced by the plea bargaining process (Sample & Bray, 2006). In response to critics of official data, Bursik (1980) explains how official data might be preferable to self report when studying specialization. He argues that official data “gives highly specific temporal information” regarding an individual’s offending patterns while self reported data is influenced by a person’s ability to accurately recall the timeline of their offending patterns (Bursik, 1980, p. 852).

<sup>2</sup> The data for the median household income and poverty status are not available yet from the 2010 Census.

<sup>3</sup> From 1999-2005, the Newark Police Department investigated 683 homicides. Of these homicides, 509 homicide cases were closed and 174 cases remain open. Open cases were eliminated from the analysis and female offenders were eliminated. The resulting sample consisted of 430 homicide offenders responsible for 478 homicides. In order to study crime switching patterns, offenders must have at least two arrests. Therefore all offenders that had fewer than two arrests were excluded from analysis (N=84). Homicide offenders with missing criminal histories were eliminated from the sample (N=122).

A binary logistic regression was used to determine how different the sample of offenders with known criminal histories was from offenders who had missing criminal histories. The analysis was limited to individuals with missing and available criminal histories that had at least five arrests. A limited amount of information was available on missing offenders. Therefore, the logistic regression included the homicide offenders’ age at the time of the homicide, race, gang status, and the number of prior miscellaneous, drug, property, and violent crimes committed by each offender. Number of priors and number of felony convictions were available, but were not



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included due to multicollinearity. None of the variables significantly predicted whether an offender has a missing or available criminal history.

In order to examine patterns of specialization, escalation, and de-escalation, it is necessary for offenders to have more than one arrest prior to the homicide (Lo et al., 2008). Armstrong and Britt (2004) also argue that individuals with three or fewer arrests are typically not defined as career criminals. Thus, the sample was limited to offenders with at least five arrests. Consequently, the final sample included in the analysis is 140 homicide offenders with 59 gang members and 81 nongang members.

<sup>4</sup> Broad offense categories are desirable in specialization and escalation research because too many offense categories can make it difficult for any significant patterns of specialization or escalation to emerge because there will be too few crimes in each category (Blumstein et al., 1988).

<sup>5</sup> Offenders were initially identified as gang members by the homicide detectives at Newark Police Department. In the few cases where gang status was uncertain, the research assistants verified an offender's status with detectives from the gang unit.

<sup>6</sup> An analysis was also conducted for the last three arrests (included individuals that had at least three arrests, N=192) and for the last two arrests (included individuals with at least two arrests, N=224). Thus, these analyses only examined the last and second to last transition preceding the homicide. The findings from these analyses are consistent with what is found for individuals that had at least five arrests.

<sup>7</sup> Armstrong and Britt (2004) limited their samples to individuals with at least ten arrests and only analyzed the first 9 arrest transitions for each offender regardless of their total number of

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offenses. This strategy would be inappropriate for answering the research questions of this study since the offenders in the current sample have varying numbers of arrests ranging from 2 to 25. Only examining the arrests at the beginning of each offender's criminal history would eliminate the arrest data most crucial to this analysis since the purpose is to examine the offending patterns leading up to the homicide event. Thus, the analysis will have focus on the last five arrests immediately preceding the homicide. The arrest for the actual homicide is excluded from the analysis in order to prevent bias towards escalation. In cases where individuals were responsible for more than one homicide from 1999-2005, the criminal history was examined only up until the first homicide.

<sup>8</sup> The reference category for all models is miscellaneous crimes.

<sup>9</sup> The mean probability of specializing in any offense across transitions was found by first adding together the probabilities of specializing in each offense type (i.e. miscellaneous, drug, property, violent) for each transition. The probability of specialization in any offense for each transition were then added together and divided by four.