

**THE PERSISTENT OFFENDER:
A LONGITUDINAL ANALYSIS**

by

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ABSTRACT

Much research has been conducted in the area of criminal careers and related topics such as persistence. In the study of persistence it is clear from the number of varying definitions that there is no consensus on how criminologists should define persistence, and for that matter, persistent behaviour. In anticipation of further work in the area of persistence and ultimately, crime reduction, this study is an explorative attempt at providing an understanding of the term persistence. Definitions of persistence in the literature are dependent on official data, such as information on arrests, to examine offender behaviour over time. This quantification of behaviour creates a de facto definition of criminal persistence as essentially a measure of continued crime over time. In this study, prior definitions of persistence are applied to a dataset of arrest information on 17,685 juveniles released from California Youth Authority institutions between 1988 and 1998, and followed through 2003. Findings indicate that regardless of how persistence is defined, slightly varying samples of persistent offenders can be found within the same dataset. The findings support previous research in that this analysis reveals that even among a population of persistent offenders, some percent of offenders account for a larger proportion of all arrest charges. The author discusses how the term persistence may be categorical rather than typical and there may exist therefore, varying types of persistent criminal behaviour.

Keywords: persistent offender; repeat offender; persistence; criminal career

Subject Terms: crime; criminal; criminals; criminology

For Kelly.

I will forever appreciate your support of this goal. Your love, understanding and patience enabled me to realize a dream. You are still the best person I have ever met.

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May you be inspired to dream and motivated to achieve whatever you desire.

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“What lies behind us and what lies before us are tiny matters,
compared to what lies within us.”

- Ralph Waldo Emerson

TABLE OF CONTENTS

Approval	ii
Abstract.....	iii
Dedication	iv
Acknowledgements	v
Quotation	vi
Table of Contents	vii
List of Figures.....	x
List of Tables	xi
Chapter 1: INTRODUCTION	1
Chapter 2: ENVIRONMENTAL CRIMINOLOGY AND CRIME PATTERN THEORY	5
2.1 Introduction	5
2.2 Routine Activities Theory	8
2.3 Rational Choice Theory.....	11
2.4 Crime Pattern Theory	14
2.4.1 Introduction	14
2.4.2 Distance to crime	20
2.4.3 Offender mobility	28
2.4.4 Spatial analysis and crime analysis	29
2.5 Summary.....	33
Chapter 3: LITERATURE REVIEW OF PERSISTENT CRIMINALITY AND CRIMINAL CAREER RESEARCH.....	35
3.1 Introduction	35
3.2 Introduction to Criminal Career Research.....	40
3.3 Life-Course Criminology	44
3.3.1 Moffit's taxonomy	48
3.4 Gottfredson, Hirschi & the General Theory of Crime.....	50
3.5 Onset.....	52
3.6 Specialization and Versatility	56
3.7 Criminal Lambda.....	61
3.8 Desistence.....	64
3.9 Definitions of Persistence.....	70
3.9.1 Definitions in research: the 1970s	75
3.9.2 Definitions in research: the 1980s	75
3.9.3 Definitions in research: the 1990s	75

3.9.4	Definitions in research: the 2000s	76
3.9.5	Definitions in statute: the habitual offender	79
3.10	Selective Incapacitation.....	83
3.11	Summary.....	87
Chapter 4: METHODOLOGY		90
4.1	The Data	90
4.2	Persistence Issues	92
4.2.1	Onset.....	93
4.2.2	Age-crime curve	93
4.2.3	Career length and desistence	94
4.2.4	Specialization and versatility.....	95
4.3	Testing Definitions of Persistence.....	96
4.3.1	Definition 1: Wolfgang, Figlio & Sellin (1972)	97
4.3.2	Definition 2: Haapanen (1990)	97
4.3.3	Definition 3: Horney & Marshall (1991).....	98
4.3.4	Definition 4: Moffit (1993).....	98
4.3.5	Definition 5: Piquero, Paternoster, Mazerolle, Brame, & Dean (1999).....	99
4.3.6	Definition 6: Piquero (2000b).....	99
4.3.7	Definition 7: Berg & DeLisi (2005)	99
4.4	Prolific Offenders: The Most Persistent of the Persistent	100
Chapter 5: FINDINGS		101
5.1	Descriptive findings.....	101
5.1.1	Distribution of arrest charges.....	101
5.1.2	Committal offence	105
5.1.3	Age at admission.....	105
5.1.4	Time duration to re-offend.....	107
5.2	Persistence Issues	109
5.2.1	Onset.....	109
5.2.2	Age-crime curve	110
5.2.3	Career length and desistence	112
5.2.4	Specialization and versatility.....	112
5.3	Testing Definitions of Persistence: Results.....	115
5.3.1	Definition 1: Wolfgang, Figlio & Sellin (1972)	115
5.3.2	Definition 2: Haapanen (1990)	116
5.3.3	Definition 3: Horney & Marshall (1991).....	116
5.3.4	Definition 4: Moffit (1993).....	117
5.3.5	Definition 5: Piquero, Paternoster, Mazerolle, Brame & Dean (1999).....	119
5.3.6	Definition 6: Piquero (2000b).....	119
5.3.7	Definition 7: Berg & DeLisi (2005)	119
5.3.8	Summary of definitions	120
5.4	Further Findings On Definition Testing.....	121
5.5	Prolific Offenders: The Most Persistent	122

Chapter 6: DISCUSSION	127
6.1 Findings: Demographics.....	127
6.2 Findings: Persistence Issues	128
6.2.1 Onset.....	128
6.2.2 Age-crime curve	129
6.2.3 Career length and desistence	129
6.2.4 Specialization and versatility.....	130
6.3 Findings: Definition Testing.....	130
6.4 Findings: Prolific Offenders.....	131
6.5 Comments on Definitions of Persistence and Prolific Offenders.....	132
6.6 Persistent Offenders and Resistance.....	135
6.7 Persistent Offenders and Crime Opportunity	136
6.8 Persistent Offenders and the Criminal Justice System.....	137
6.9 Limitations of the Study	139
6.10 Future Research	140
Reference List.....	143

LIST OF FIGURES

Figure 5.1:	Count of youth by number of arrest charges.	102
Figure 5.2:	Count of youth with highest number of arrest charges by number of arrest charges. (Ninety-fifth percentile and above for arrest charges).	103
Figure 5.3:	Distribution of youth by age of first admission to CYA.	107
Figure 5.4:	Age-Crime Curve: Number of arrest charges by offender's age.	111
Figure 5.5:	Calculated career length of youth.....	112

LIST OF TABLES

Table 4.1:	Count of youth by year of release.	92
Table 5.1:	Summary statistics for youth.	101
Table 5.2:	Summary statistics of pre-admission arrest information for youth.	104
Table 5.3:	Count of youth by committal offence.	105
Table 5.4:	Age at first admission to CYA.	106
Table 5.5:	Count of youth by number of months prior to first arrest charge following first release from CYA.	108
Table 5.6:	Age at first arrest charge.	109
Table 5.7:	Percent of offenders by number of different offenses by number of arrest charges (20 or less unique arrests).	114
Table 5.8:	Summary of offenders identified by definition used by Wolfgang, Figlio & Sellin (1972).	116
Table 5.9:	Summary of offenders identified by definition used by Haapanen (1990).	116
Table 5.10:	Summary of offenders identified by definition used by Horney & Marshall (1991). Low-rate offender group.	117
Table 5.11:	Summary of offenders identified by definition used by Horney & Marshall (1991). High-rate offender group.	117
Table 5.12:	Summary of offenders identified by definition used by Moffit (1993). Adolescent limited persistent offenders.	118
Table 5.13:	Summary of offenders identified by definition used by Moffit (1993). Life-course persistent offenders.	118
Table 5.14:	Summary of adult onset offenders.	118
Table 5.15:	Summary of offenders identified by definition used by Piquero, Paternoster, Mazerolle, Brame & Dean (1999).	119
Table 5.16:	Summary of offenders identified by definition used by Piquero (2000b).	119
Table 5.17:	Summary of offenders identified by definition used by Berg & DeLisi (2005).	120
Table 5.18:	Summary of offenders identified by definition.	120
Table 5.19:	Count of offenders by number of definitions identifying persistence.	122
Table 5.20:	Percent of arrest charges attributed to specified percentages of offenders.	124
Table 5.21:	Percent of arrest charges attributed to specified percentages of offenders. Adult onset compared to data exploration.	125

CHAPTER 1: INTRODUCTION

A long and widely held fact about criminal offending is that a small group of offenders is responsible for a larger percentage of crime. The focus of this study is inspired by previous research findings indicating that a majority of all crimes are indeed committed by a small percentage of all offenders.

A review of the literature on persistent offenders reveals that previous research has produced a number of labels that have been applied to the busiest, high volume offenders. This study adopts the terms persistent offender, in discussing offenders who offend at higher rates than most offenders, and prolific offender, as identifying the most active of persistent offenders.

Much research has been done on persistence, most of it within the area of criminal career research. In reviewing that research it became clear what persistence means in a broad, generic sense but, as one begins to conceptualize a definition for persistence and moves toward specificity, imagining operational definitions of persistence becomes a difficult task. One quickly learns that definitions of persistence as used in prior research are not applicable to other populations, samples, or datasets. For instance, the realities of differing criminal justice systems or even the process of administering justice within a single justice system, affects offending, offenders, and ultimately the data that represents those events and persons. Quite possibly, no single definition could be used across jurisdictions.

The study of persistence seems a straight forward endeavour toward answering such questions as, what percent of offenders are persistent, at what ages do persistent offenders begin offending, how much crime do persistent offenders commit, or, for how long do persistent offenders continue to offend? In considering the persistence topic however, one quickly realizes that in order to understand *who* is persistent, one must understand *what* is persistence. In order to respond to such questions as those suggested above, or to investigate further issues of persistence, or even begin to conceptualize what types of analysis to consider let alone perform, one must understand what is meant by the term *persistence*.

The purpose of this study is to provide an understanding of what is meant by persistence. Only once persistence is understood can its integral topics be studied and research findings presented in a synthesized and complementary manner to produce conclusions that are not only relevant but practical and contribute to the topic of persistence and criminology in general. Too often issues and topics within the area of persistence are studied without regard for their implications or relevance to the broader subject of persistence. Research should not focus simply on the research question or idea at hand but researchers should strive to consider what the implications and contributions are for the broader area of study.

Such it is that this study moved away from examining any single issue within persistence. This study as presented is an examination of persistence from which further research can be conducted from any number of perspectives, with any number of designs or types of analyses. This study provides the information necessary to understand what is meant by persistence and as such, provides a foundation for further research. Armed with

a comprehensive understanding of persistence, further research can examine topics within the area of persistent offending from the abstract to the pragmatic, from theory to computation, from process to practice. With an in-depth knowledge of persistent offenders and offending, one can apply a variety of frameworks and techniques for analysis that advances the understanding of persistence along a path toward the pragmatic effect of reducing crime.

In its attempt to gain and provide an understanding of persistence, this study applies various analyses to data on a population of offenders. The analyses are focused in three main areas. First, the research examined and reports findings on certain demographics and offence characteristics of the offender population within the data. The literature on persistence and criminal careers identifies commonly examined topics such as the ages when offenders begin offending, the relationship between age and offending, as well as the duration of offending. Through the application of some definitions operationalized in prior research, the second major analysis examined differing definitions of persistence with two purposes in mind. The first purpose was to develop a thorough understanding of persistence, and the second purpose was to examine how the application of different definitions may identify different offenders as persistent. With consideration for prior findings reporting that a small percentage of offenders account for a larger proportion of offences, the third analysis examines whether this phenomenon holds true for the offenders included in the data.

The remainder of this study is presented in six chapters. Chapter Two ties the research to environmental criminology and discusses crime pattern theory as a theoretical base for further examination of persistence and persistent offenders. Chapter Three is a

review of the literature on persistent offenders and criminal career research. Chapter Four outlines the methodology used in the analyses. Chapter Five presents the findings and Chapter Six discusses the findings and concludes the dissertation.

CHAPTER 2: ENVIRONMENTAL CRIMINOLOGY AND CRIME PATTERN THEORY

2.1 Introduction

Crime pattern theory is one of three theoretical perspectives within a branch of criminology referred to as environmental criminology. The two other theoretical perspectives included in environmental criminology are rational choice theory and routine activities theory. A related topic, situational crime prevention, is a response strategy of environmental criminologists to preventing and reducing crime, and is included in the field of environmental criminology. In the few decades since the initial presentation of routine activities theory in the late 1970s, environmental criminology theories and concepts have been subjected to rigorous testing and, as a field, have been strongly supported (P.J. Brantingham & P.L. Brantingham, 1991a).

The field of environmental criminology furthers positions presented in a number of earlier works in criminology and sociology. For instance, some propositions of rational choice theory are consistent with concepts such as free will, rational choice and pleasure versus pain as presented in the earliest writings of Cesare Beccaria. The environmental criminology field as a whole can be aligned with Burgess and Park and the Chicago School of Criminology, and to the social ecological work of Shaw and McKay who found the existence of crime patterns in their famous study of delinquency in the Chicago area (P.J. Brantingham & P.L. Brantingham, 1991b; Harries, 1974; LaVigne & Groff, 2001; Pyle, Hanten, Williams et al., 1974; Williams & McShane, 1999). In its

brief history, environmental criminology has approached crime in general from a similar social ecological position as those works mentioned above, while sometimes focusing on specific crimes such as auto theft or on repeat offenders, with the goal of developing pragmatic strategies for reducing crime (Forensic Logic, 2005).

To view crime through the environmental criminology approach is to shift away from other criminological theories attempting to explain the causal factors that are assumed to propel an individual toward involvement in crime. Theories on crime causation have dominated criminology for some time (P.J. Brantingham & P.L. Brantingham, 1991b). Environmental criminologists accept as a given that there are multiple explanations for why people commit crime, and therefore those criminologists turn their focus away from causes and predicates of crime and onto the criminal act and other elements of crime (P.J. Brantingham & P.L. Brantingham, 1991a, 1991b; Cohen & Felson, 1979; Felson & Clarke, 1998; Lilly, Cullen & Ball, 2002; Wood, 1991).

Readers are cautioned not to assume that environmental criminology disregards crime causation but rather should understand that environmental criminology does not deny causal theory and factors, opting instead to accept criminal motivation as given (P.J. Brantingham & P.L. Brantingham, 1991b; Cohen & Felson, 1979). Further, environmental criminology does not abandon the offender as an element of crime. In the view of environmental criminology, offenders are focused on in the attempt to understand the elements of opportunity, motivation, movement, environment, etceteras, as related to crime and the criminal act (Smith, Frazee & Davison, 2000; Lilly, Cullen & Ball, 2002).

While the three environmental criminology theories may have different focal areas in the explanations of crime they offer, they have many common assumptions.

They each contribute important assertions about the criminal act. Routine activities theory focuses on the individual within the larger society and suggests that crime is a product of non-criminal activities for the reason that during normal, daily activities persons predisposed to commit a crime may search for favourable targets or opportunities and offenders may therefore, be present in most locations for non-criminal reasons (P.J. Brantingham & P.L. Brantingham, 1984, 1998; P.L. Brantingham & P.J. Brantingham, 1993; Cohen & Felson, 1979; Felson, 1987; Felson & Clarke, 1998; Rengert, 1989; Wiles & Costello, 1999). Thus it follows that as a result of individual offenders engaging in daily activities, in many cases crime is not planned but rather is a situation in which the offender takes advantage of an opportunity to hit an attractive target (P.L. Brantingham & P.J. Brantingham, 1998; Felson, 1979). As will be discussed later in the chapter, Cohen and Felson (1979) describe three necessary ingredients to produce the opportunity for a criminal act to take place: an actor, a target or victim, and the absence of a capable guardian.

Rational choice theory focuses on the individual (Felson & Clarke, 1998). Felson and Clarke (1998) state that rational choice theory builds on the rational man and pain and pleasure concepts of the earliest criminologists by suggesting that prior to committing the criminal act, an individual engages in a decision making process through which he or she weighs the costs and benefits of the crime opportunity at hand.

As the third theory to come about in the historical timeline of environmental criminology, crime pattern theory furthers the ideas presented by the earlier routine activities and rational choice theories. Whereas routine activities theory focuses on the individual within the larger society and rational choice focuses on the thought process of

an individual, pattern theory examines the individual offender's interaction within a smaller, local area (Felson & Clarke, 1998). In addition to the three aspects of crime offered by routine activities theory, pattern theory suggests there is a fourth aspect, spatial, which considers the movement and interaction of offenders and targets (victims) through time and place (space). When offenders and targets come together in time and space, an opportunity for crime exists. Crime pattern theory, with the addition of a spatial component, became a catalyst for investigations of crime focusing on the spatial analysis of crime, including patterns in crime location and the distance an offender travels to the crime location. Related to offender movement in time and space, P.J. Brantingham & P.L. Brantingham (1984) suggested that offenders operate within areas well known to the offender and travel between such areas using paths, also known to the offender, which are defined by physical (and more recently, psychological) boundaries or barriers.

This chapter discusses the three environmental criminology theories: routine activities theory, rational choice theory and crime pattern theory. Since the research in this dissertation is based primarily on crime pattern theory, the tenets and work stemming from that theory are examined in the most depth. The section on pattern theory, in addition to describing its propositions, includes subsections on topics related to or developing out of crime pattern theory such as residence location, distance to crime, spatial analysis, geographic mobility and crime analysis in general.

2.2 Routine Activities Theory

The work of Cohen and Felson (1979) has been heralded as 'groundbreaking' in its rise as a popular theory in criminology (Forensic Logic, 2004; Williams & McShane, 1999). Cohen and Felson (1979) define routine activities in the following:

[A]s any recurrent and prevalent activities which provide for basic population and individual needs, whatever their biological or cultural origins. Thus routine activities would include formalized work, as well as the provision of standard food, shelter, sexual outlet, leisure, social interaction, learning and childrearing (p, 593).

Lilly et al. (2002) clarify that routine activities consist of the mundane, everyday activities in which an individual engages on a daily basis. Much research has been conducted on criminal involvement and routine activities. In the sense of crime occurring during routine activities, the time when an individual is engaged in mundane, routine activities, the individual must be presented with or come upon an opportunity to offend. Upon recognizing the existence of an opportunity, the individual then initiates the decision process to commit or not commit the act.

Routine activity theory was initially presented by Cohen and Felson (1979) as an explanation of the crime rate trends experienced in the United States after World War II (WWII). A major point made in that seminal work suggested that crime is dependent on society's changing routine activities. Following WWII, the United States economy, and industries on which it was based, changed as more workers headed for major cities and more women became involved in the workforce. The new reality of post-WWII America forced American society to change its routine activities. More people, more automobiles and more homes in cities provided more victims and targets for crime, that is, more opportunities. At the same time, the rise of the automobile drastically affected how society engaged in routine activities, which is, by travelling more often and to locations at greater distances from the home. The cities themselves became more dispersed over larger areas sprawling away from the central core (Cohen & Felson, 1979). The fact that more women were involved in the workforce meant their roles were changing and more

homes were left vacant during the day, presenting more opportunities for crime (Cohen & Felson, 1979). Finally, Cohen and Felson, and later Felson (1987), suggest that as more modern and lighter materials became available and were used in the construction of durable goods, those goods themselves became increasingly popular crime targets for offenders.

Cohen and Felson (1979) suggest that in order for a crime to occur, three aspects must come together in space and time: a motivated offender; a target, later revised to include a victim in the event of crime against persons; and the lack of a capable guardian. Accepting that offenders come from varied backgrounds with different reasons and motivations to offend, motivated offenders are assumed to exist. Recall from earlier in the chapter that the focus of environmental criminologists is not on explaining why the offender is motivated. As such, the offender is essentially the starting point, the first aspect necessary for the crime to occur. A target is the target of the crime. For property crime, targets include such tangible items as automobiles, residences and their furnishings for example while in crimes against persons, the target is the person, the victim. The third aspect of crime is the lack of a capable guardian. A capable guardian could include private citizens, security forces, police officers, etceteras. The lack of a guardian capable of preventing or causing the cessation of a crime is the aspect which allows for the crime to occur. Finally, Cohen and Felson suggest that the absence of any one of these elements is sufficient to prevent the successful completion of a crime. Thus it follows that having two of three aspects is not enough for crime to occur. The existence of a motivated offender and a target or victim is not enough if there is a capable guardian, or at least something or someone the offender considers a capable guardian.

Cohen and Felson contend that for crime to occur, offender and target/victim must come together in time and space. A motivated offender cannot offend even where there is no capable guardian, if no target or victim is available. In such an instance, there is no opportunity for the individual to offend.

A primary assertion of environmental criminologists is that an opportunity must exist in order for an offender to engage in a criminal event. In fact, Felson & Clarke (1998) state that opportunity plays a role in causing all crime. The notion that opportunity exists in order for crime to occur is forwarded and supported by routine activity theory, rational choice theory and pattern theory (P.J. Brantingham & P.L. Brantingham, 1991c; Lilly et al., 2002). The fourth framework within the field of environmental criminology, situational crime prevention, upholds the idea that if you remove, limit or make less attractive opportunities for crime, crime is less likely to occur (Cullen et al., 2002; Jeffery, 1971). As mentioned above, if offender and target cannot come together, an opportunity cannot exist; no opportunity means no crime.

2.3 Rational Choice Theory

Since Cornish and Clarke first applied a rational choice model in 1986 as an explanation of the offender's involvement in the criminal event, rational choice has grown in popularity as a criminological theory. The decision process through which an individual decides to engage in the criminal event is the focus of rational choice theory. Since Beccaria's preliminary suggestions about crime and criminals, criminological theories have only limited consideration that an offender could be a rational, free-thinking individual acting on free-will, seeking pleasure and avoiding pain. The tenets of rational choice theory provide more evidence of the connection between environmental

criminology and earlier works by Beccaria and later what became known as the Chicago School of Criminology.

Consistent with the pleasure and pain concept of classical criminology is Felson's and Clarke's (1998) declaration that the act of offending is purposive in that its result will benefit the offender. Many authors have discussed that in an individual's decision process, benefits and risks of engaging in crime are considered with the benefit being the payoff or reward achieved by the crime and the risk being the risk of being caught (P.J. Brantingham & P.L. Brantingham, 1984, 1991a; Brown & Altman, 1991; Guerette, Stenius & McGloin, 2005; Johnson & Bowers, 2004). If an individual perceives that the criminal event carries too much risk to be caught, the individual will likely decide not to engage in the act. Conversely, if the event is perceived to be lower risk with potentially high reward, the offender is likely to carry out the act (Rhodes & Conly, 1991).

In their discussion of rational choice theory, Williams and McShane (1999) identify that "[r]ational choice theorists separate decision making into two different areas: involvement decisions and event decisions" (p. 238). Involvement decisions relate to the offender's decision whether to become involved in the crime by initiating the crime, continuing the crime or ceasing involvement in the crime. Event decisions include deliberating the specific actions necessary to commit the offence. Given that different types of crimes are carried out in different ways, event decisions are said to be crime specific. As such environmental criminologists argue that to prevent crime, there cannot be one general crime prevention strategy but strategies specific to differing crime types that are consistent with the notion of target hardening by reducing opportunity and making crime targets less attractive (P.J. Brantingham & P.L. Brantingham, 1991a;

Brown & Altman, 1991; Williams & McShane, 1999). Target hardening then relates directly to the rational decision process by making the target less attractive and less rewarding with the associated aim of creating the perception that the criminal event involving that target would be of greater risk.

While rational choice speaks much of rational man or rational thought, there exist discussants suggesting that offenders, by engaging in crime, do not express pure rationality (Forensic Logic, 2004). There is indeed a body of research that exists which has examined this issue. Essentially, the findings report that since offenders do not consider all risks and negative cues, they are operating under a limited rationality (Bennett & Wright, 1984; Cromwell et al., 1991; Feeney, 1999; Jacobs, 2000; Wright & Decker, 1997, all in Forensic Logic, 2004; Williams & McShane, 1999). Williams and McShane explain:

Full rationality is not required by the perspective, nor is the offender assumed to be sophisticated in his or her decision making. Adequate or accurate information is not even necessary. Thus, it is more precise to say the offender demonstrates limited rationality (1999, p. 238).

In discussing the decision process of offenders, Felson and Clarke (1998) state that rational choice attempts to understand and describe how the offender thinks. Those authors continue by suggesting that the offender's decision making is influenced by motives and the criminal event presents an opportunity to satisfy that motive.

An important concept stemming from the rational choice perspective and the decision making process it embodies is the idea that offenders develop an awareness for similar cues found successful in prior crimes. Offenders who benefit from crime through the successful completion of that crime without being caught and who continue to

commit, develop recognition of cues that are characteristic of prior successful crimes. This recognition in turn influences the offender in his or her search for future crime opportunities; the offender seeks similar opportunities. Over time, offenders may develop a commitment to a set of cues characteristic of prior successful crimes and hence the offender searches for opportunities with those cues time and time again. In developing a set of cues, the offender has developed what criminologists refer to as a crime template. The crime template can be used to characterize the offender. It is not suggested however, that offenders use the same general template for all the crimes they commit. What is suggested is that for each crime type, the offender may develop a crime template. For instance, for a single offender, the crime template for auto theft may be different than the template for theft from vehicle. Different circumstances elicit the development of different templates.

Since the rational choice perspective recognizes the development of different templates for different crime types, it follows that the decision process is different for different types of crimes. Thus rational choice theorists also view crime prevention as crime specific. As such, and consistent with routine activities theorists, rational choice theorists declare that the prevention of crime should focus on specific crime types rather than on a general approach to preventing all crime (Williams & McShane, 1999).

2.4 Crime Pattern Theory

2.4.1 Introduction

Pattern theory, developed by P.J. Brantingham and P.L. Brantingham (1984), is rooted in a long history of the observation of crime patterns (P.L. Brantingham & P.J.

Brantingham, 1981, 1991). Through that history, investigators have examined patterns in crime by examining such topics as the distribution of offender residences and crime, and the spatial patterning of criminal residences and criminal events (Baldwin & Bottoms, 1976; P.L. Brantingham & P.J. Brantingham, 1981, 1991). Even with that history, in 1991 P.L. Brantingham and P.J. Brantingham commented that up to that time, there had been little scientific interest in crime patterns and the explanations coming out of those investigations had been quite simplistic. Part of the reason behind the field having little interest in patterns could possibly be attributed to Wolfgang, Figlio and Sellin's (1972) argument in their important work on a birth cohort that crime patterns were not important (in P.L. Brantingham & P.J. Brantingham, 1991).

Crime pattern theory can be viewed as a convergence of the ideas forwarded by both routine activity and rational choice theories as pattern theory is concerned with individuals' routine activities, their choices and how people move about in time and space (Felson & Clarke, 1998). Pattern theorists agree with routine activities theorists that crime occurs through normal daily activities. Not all criminal events are planned but rather individuals happen upon or find opportunities during their routine activities (P.L. Brantingham & P.J. Brantingham, 1993; Costello & Wiles, 2001; Rengert, 1989; Wiles & Costello, 2000). In keeping with the positions forwarded by rational choice theorists, pattern theorists accept that the criminal event occurs as a result of an individual's rational choice to commit that crime and as such, agree that crime is a result of a multistage decision process (P.J. Brantingham & P.L. Brantingham, 1978; P.L. Brantingham & P.J. Brantingham, 1984).

Following from the motivation and opportunity combination forwarded by routine activity theory, the earliest development of pattern theory indicated an interest by theorists to understand how offender motivation as well as opportunity could aid the attempt to explain crime (P.J. Brantingham & P.L. Brantingham, 1980, 1998; P.L. Brantingham & P.J. Brantingham, 1991, 1993; Rhodes & Conly, 1991). Over time however, pattern theorists have become less concerned with offender motivation and have focused more on opportunity (P.J. Brantingham & P.L. Brantingham, 1980; P.L. Brantingham & P.J. Brantingham, 1991). As part of the shift from motivation to opportunity, researchers began to focus more on crime location and crime patterns for good reason; studies found that crime rates were higher where there were more opportunities for individuals to engage in crime (Baldwin & Bottoms, 1976; P.J. Brantingham & P.L. Brantingham, 1991b). The Brantinghams suggest that in order to do something meaningful in the response to crime, criminologists must understand the criminal event itself rather than the motivation of the offender (P.J. Brantingham & P.L. Brantingham, 1991a).

Additional evidence of pattern theorists moving the focus away from the individual's causal factors, is pattern theory's consistency with Jeffery's (1971) suggestion that crime exists within the environment and not within the individual, which leads to the idea that the environment determines whether an individual will, or can, offend or not offend based on opportunity. If one is prone to offending, changing the environment will change the criminality of the individual because of fewer opportunities to engage in crime (Jeffery, 1971). In pattern theory, P.J. Brantingham & P.L. Brantingham (1998) accept the position forwarded by Jeffery and incorporate an

environmental aspect as evidenced by the suggestion that "...crime is a product of interactions between people, places, sites, and situations; and that the environmental surrounds are important in understanding criminal events" (p. 43).

Furthering the inclusion of an environmental aspect, Brantingham and Brantingham argue that individuals are surrounded by an environmental backcloth, which contains all the social, psychological, economic, physical and temporal elements that may influence an individual to become an offender (P.J. Brantingham & P.L. Brantingham, 1991a, 1998; P.L. Brantingham & P.J. Brantingham, 1993; Chainey & Ratcliffe, 2005). Through this backcloth, individuals pick up cues about their environment when searching for crime opportunity. These cues are collected to form templates, which the individual follows in the search for and engagement in the criminal event (P.J. Brantingham & P.L. Brantingham, 1978; P.L. Brantingham & P.J. Brantingham 1984, 1993). Over time, templates become more defined as a result of the positive reward from previous successful outcomes (P.J. Brantingham & P.L. Brantingham, 1978; Chainey & Ratcliffe, 2005).

After explaining the idea that offenders operated against a backcloth of influential elements, P.J. Brantingham and P.L. Brantingham (1984) then focused on the criminal event itself in more detail. The Brantinghams accepted the three aspects of crime as identified by Cohen and Felson (1979) and added a fourth aspect, spatial temporal. The spatial temporal aspect suggests that the offender and the target or victim must come together in space and time. Thus, the Brantinghams provide a dimension of crime that includes both the location where the crime occurred as well as the time at which the crime occurred.

In the discussion of pattern theory, P.J. Brantingham and P.L. Brantingham (1984) present the concepts of nodes, paths and edges. Nodes are locations, the places people frequent such as work location, residence and school. P.L. Brantingham and P.J. Brantingham (1993) have suggested that nodes, as locations, may be the strongest predictors of crime opportunity given the finding that many types of different crimes have been found to occur near single nodal points. Paths are the physical routes between two or more nodal points and edges are barriers defining pathways. In that sense, edges can be physical boundaries or barriers, mental boundaries, land use changes or anything capable of defining limits to the pathways (P.L. Brantingham & P.J. Brantingham, 1993). Nodal points, pathways and edges work together to form a model in which an individual travels along pathways in order to transverse from node to node. Over time, pathways may become well defined by edges.

In addition to offending near nodal points, individuals also will offend along pathways. As individuals travel between nodal points time and time again as part of their routine, daily activities, individuals develop regular paths (P.J. Brantingham & P.L. Brantingham, 1998). As a result of their daily movement along these routes, pathways not only become better known to the individual but the individual also becomes more aware of surroundings along those pathways. The result is that over time, individuals become comfortable in their awareness of those paths and begin to offend at points along them (P.J. Brantingham & P.L. Brantingham, 1991a).

The idea of offenders developing a familiarity with certain areas surrounding nodes or pathways is an important concept in pattern theory. This concept, known as awareness space, suggests that offenders are more likely to offend in areas they are more

familiar with because individuals will limit their search for crime opportunities to areas that are known and predictable (P.J. Brantingham & P.L. Brantingham, 1984, 1991a; P.L. Brantingham & P.J. Brantingham, 1993). The term awareness space is consistent with the concept of cognitive mapping and all that it implies for criminology (see Bottoms, 1994 in Lilly et al., 2002; P.J. Brantingham & P.L. Brantingham, 1984; P.L. Brantingham & P.J. Brantingham 1984; Nichols, 1980). The concepts of awareness space, and nodes and paths have been tested extensively with many studies concluding that crime is highly patterned by daily activities. Another topic stemming from the findings on awareness space has been distance to crime.

Before moving on to the discussion of the distance to crime topic however, two more general crime pattern concepts are presented, crime attractors and crime generators. Crime attractors are locations or targets that attract individuals to them such as pubs, bars or night clubs and shopping malls (P.J. Brantingham & P.L. Brantingham, 1991a). Crime generators on the other hand are locations that not only provide abundant crime opportunities but may also have a reputation for criminal activity (P.J. Brantingham & P.L. Brantingham, 1991a). The study of crime generators, commonly referred to as hot spots, has a lengthy history and has been viewed as an important topic worthy of much investigation (P.J. Brantingham & P.L. Brantingham, 1991c; Weisburd, Bushway, Lum & Yang, 2004). Sutherland (1995) argued that investigation of crime location is six times more important than investigation into who committed the crime (in Weisburd et al., 2004).

As the next chapter will reveal, some individuals are repeat offenders. Similarly, some locations generate crime repeatedly. In an examination of crime location in

Minneapolis, Sherman (1989) found that only 3% of all locations produced over 50% of all calls for police assistance (in Weisburd et al., 2004). Spelman (1995) reported that in Boston, 10% of all locations accounted for 50% of all calls to police (in Weisburd et al., 2004). A number of studies have found concentrations of crime near certain locations. An interesting finding with regard to hot spots is that unless some intervention is initiated, hot spots remain stable over time. In an examination of 14 years worth of crime data Weisburd et al. (2004) found that "...the vast majority of street segments in Seattle showed a remarkably stable pattern of crime..." (p., 306).

2.4.2 Distance to crime

The topic of distance to crime stems out of analyses finding that individuals seem to offend within areas that are most familiar to them, that is, their awareness space. As such, the topic focuses on distance to crime as being measured from the offender's residence to the crime location. Studies examining distance to crime, sometimes referred to as the *criminal commute* in mobility studies, have found that distance is a major determinant of where an offender is likely to offend (Brantingham & Jeffery, 1991).

Although the vast majority of work on the topic has occurred over the past twenty years, the examination of *distance to crime/journey to crime* has a long history. As a result of his investigation of crime groups in Honolulu, Lind (1930) is identified as the first researcher to examine the relationship between offender residence and crime location (in Pyle et al., 1974). One of Lind's findings reveals an important relationship between residence and crime location. Lind reports that neighbourhoods are an important social control as crime seems to be curbed within neighbourhoods, forcing the offender further from the residence before committing crimes (in Pyle et al., 1974). This

phenomenon will be discussed in more depth below. White (1932) also found a relationship between offender residence and crime location (in Pyle et al., 1974). After Lind and White, there was a 40 year gap before a third researcher examined offender residence and crime location. In 1969, Turner mapped offender residence and crime location in order to find the distance between them (in Pyle et al., 1974). Turner concluded that “the delinquent offender resides close to the location of his offences” (as cited in Pyle et al., 1974, p. 32).

More contemporary investigations examining the offender residence and crime location topic have focused on distance to crime. The findings of many studies are consistent with the earlier three researchers but identify specific distances to crime. A number of studies have concluded that offenders commit their crimes short distances from their residences (P.L. Brantingham & P.J. Brantingham, 1981; Cohen & Felson, 1979; Costello & Wiles, 2001; Phillips, 1980 in Harries, 1980; Smith et al., 2000; Van Koppen & Jansen, 1998; Wiles & Costello, 2000). Probably the most important finding from studies examining distance to crime is that of distance decay. The distance decay model suggests that offenders do not commit in the areas nearest their residence, thus creating a buffer zone, but that most offending occurs at distances close to the residence and declines as the distance away from the residence increases (P.L. Brantingham & P.J. Brantingham, 1981; Chainey & Ratcliffe, 2005; Phillips, 1980; Van Koppen & deKeijser, 1997).

Research has consistently found that offenders commit their crimes close to their residence. Some authors have reported that in an analysis of variables, the location of offender residence and crime location had the strongest correlation (Costello & Wiles,

2001; Wiles & Costello, 2000). As mentioned above, there is a buffer zone immediately surrounding the residence; the size of this zone has been reported by various studies as anywhere from 0.6 to 1.5 miles depending on the type of crime (Warren, Reboussin, Hazelwood et al., 1998). The findings on distance to crime and distance decay are so consistent and robust that criminologists have been able to develop methods of searching for crime suspects based on the geographic targeting of individuals in relation to crime location (Van Koppen & deKeijser, 1997).

The journey to crime is similar to the journey to work topic for nonoffenders as criminologists have compared offender movement patterns to the movement patterns of nonoffenders. According to the journey to work literature, the distances travelled for noncriminal activities varies depending on the respective activity. For instance, individuals generally travel further for work or leisure and travel less distance for education or shopping purposes (Chapin, 1974). One reason offered to explain why offenders and nonoffenders alike travel varying distances is that time, money and effort are needed in order to overcome distance (Baldwin & Bottoms, 1976, in Van Koppen & deKeijser, 1997; P.L. Brantingham & P.J. Brantingham, 1981; Bullock, 1955, Capone & Nichols, 1976, and Turner, 1969, all in Van Koppen & deKeijser, 1997). In other words, individuals minimize the effort required in any given task while at the same time attempt to maximize the opportunity for positive rewards (Harries, 1980, in Van Koppen & deKeijser, 1997; Van Koppen & deKeijser, 1997).

Effort minimization and opportunity maximization ideas in criminology originate from the 'Principle of Least Effort' as presented by Zipf (1949) (see also Chainey & Ratcliffe, 2005; Felson, 1987). Zipf's principle essentially suggested that individuals will

expend the least amount of effort required to carry out any given task. Similar to an individual visiting the local convenience store rather than travelling the extra distance to a grocery store, so too will an offender travel a shorter distance to commit a crime (see Felson, 1987). The concept of offenders expending the least amount of effort required is regarded as so important in the area of residence and crime location that Chainey and Ratcliffe (2005) suggest that the least effort concept is fundamental to understanding distance to crime.

In examining the distance to crime topic, researchers have found that as a group, offenders travel short distances from their residence to the crime location. Research has reported that offenders will travel an average distance of 1.22 miles (Gabor & Gottheil, in Costello & Wiles, 2001), 1.66 miles (White, 1932 in Costello & Wiles, 2001), 1.73 miles (Wiles & Costello, 2000), and 1.77 miles (Pyle et al, 1974). Wiles and Costello also examined distance travelled when two or more offenders carried out a single crime. They found that the offender making the shortest journey travelled an average of 1.35 miles, while the offender making the longest journey travelled an average of 3.17 miles. Wiles and Costello further reported that one-third of all offenders in their study travelled less than one mile to the crime location, 50% of offenders travelled less than two miles and only 11% of all offenders travelled in excess of 10 miles.

With regard to different types of crimes, research has found that offenders will travel different distances to commit different crimes. P.L. Brantingham and P.J. Brantingham (1991) suggest that different crimes and even the same type of crime but committed in different areas will exhibit different patterns. An important predictor of distance to crime therefore, is the type of crime (Baldwin & Bottoms, 1976). Personal

crimes are committed closer to the offender's residence whereas property crimes are committed at distances further from the offender's residence (Baldwin & Bottoms, 1976; P.L. Brantingham & P.J. Brantingham, 1981; Pyle et al., 1974; Rhodes & Conly, 1991). In their 1974 study, Pyle et al. reported that the average distance travelled for personal crimes was .84 miles and the average distance travelled for property crimes was 1.72 miles. The distance travelled for personal crimes is shorter due to the fact that personal crimes generally occur at the residence location itself (at home) or near neighbourhood drinking establishments (P.L. Brantingham & P.J. Brantingham, 1993). Conversely, property crimes are commonly committed at locations found further from residences such as at or near major activity areas including shopping areas, work, school and other nodes as well as along the arterial traffic pathways connecting those nodes (P.L. Brantingham & P.J. Brantingham, 1984, 1993).

Much research examining the distance to crime has focused on specific crime types including burglary, assault, homicide, sex offences, arson and motor vehicle theft. In general, burglars tend to commit in their own neighbourhoods, close to their residence (Pyle et al., 1974). As P.L. Brantingham and P.J. Brantingham (1984) report, based on similar findings from numerous studies, burglary can be considered a patterned event. Further, Smith et al. (2000) state that "[o]ffenders have been shown to seldom wander more than a couple of blocks from main thoroughfares, or their routine routes in selecting targets for burglary" (p., 50). Research findings have reported slightly varying but similar distances to crime for burglary. Ratcliffe (2001, in Chainey & Ratcliffe, 2005) found that the average distance from residence to burglary location was about 3 miles when considering both residential and non-residential burglaries. This finding is

consistent with findings from research in other countries. In their study, Wiles and Costello (2000) found a range of .35 miles to 2.48 miles for distance travelled to burglary locations and that the average distance for all burglaries was 1.88 miles. Those authors reported that the average distance declined to 1.73 miles for burglaries with single offenders. Further, Wiles and Costello found that even when offenders travelled more than three miles to a burglary, the crime location was still within the city boundaries and therefore, the assumed awareness space of the offender(s).

Robbery offenders travel slightly further than burglary offenders to commit crimes (P.L. Brantingham & P.J. Brantingham, 1981, 1991; Capone & Nichols, 1975, 1976, in Harries, 1980; Pyle, 1974; Van Koppen & deKeijser, 1997). P.L. Brantingham and P.J. Brantingham (1991) report that robbers travel the longest criminal commute with an average distance of 2.1 miles from residence to crime location. Research on the distance travelled by sex offenders shows that those offenders don't travel as far, only about half as far as burglars (Baldwin & Bottoms, 1976; P.L. Brantingham & P.J. Brantingham, 1991; Pyle, 1974; Rhodes & Conly, 1981, in Warren et al., 1998; Rossmo, 2000, in Forensic Logic, 2004). In fact, sexual assault offenders travel the shortest distance of any other crime type offender and therefore, commit crimes with seemingly more risk by offending close to their residence (Baldwin & Bottoms, 1976; Warren et al., 1998).

The offences of assault, arson and motor vehicle theft have also been found to have short journey distances (P.L. Brantingham & P.J. Brantingham, 1991; Harries, 1980; Sapp et al., 1994, in Forensic Logic, 2004; Wiles & Costello, 2000). Motor vehicle theft in particular has received much attention as a number of studies have focused on

this offence type (Baldwin & Bottoms, 1976; P.L. Brantingham & P.J. Brantingham, 1991; Wiles & Costello, 2000). In their study of the journey to crime, Wiles and Costello found that offenders committing motor vehicle theft travelled between 1.15 miles and 3.43 miles from residence to crime location. Finally, homicide also has been found to be an offence for which offenders travel short distances. Bullock (1955) "...showed that 40 percent of all Houston homicides in 1945-1949 occurred within one city block of the offender's residence and 74 percent occurred within two miles" (in P.L. Brantingham & P.J. Brantingham, 1991, p. 30).

In addition to examining crime type, research on distance to crime also looked at offenders in an attempt to understand whether relationships exist between offender characteristics and crime journey distance. This interest is consistent with Baldwin & Bottoms's (1976) assertion "...that [offender's] age and type of offence are the two most important variables influencing the distance travelled by offenders..." (p. 91). Research has found that younger offenders do not travel as far as older offenders and that on average older offenders, those 20 years of age and over, travel twice as far to crime location (Baldwin & Bottoms, 1976; P.L. Brantingham & P.J. Brantingham, 1984; Davidson, 1984, Reppetto, 1974, Reiss & Farrington, 1991, in Costello & Wiles, 2001; Nichols, 1980; Phillips, 1980). There is some indication however, that this claim may be breaking down as youth are becoming more and more mobile as society itself becomes increasingly mobile (Costello & Wiles, 2001; Wiles & Costello, 2000).

The relationship between offender race and distance to crime has also been examined. Nichols (1980) found that race and distance are correlated however, Pyle (1974) and Phillips (1980) concluded race and distance are not correlated.

With regard to another common independent variable, socioeconomic status has been found to affect the distance an offender will travel for the primary reason that offenders, and low income people in general, have less of the resources required to travel (Harries, 1980; Wiles & Costello, 2000). Baldwin and Bottoms (1976) contend however, that socioeconomic status does not affect travel or crime distance because all individuals in society have the same mobility.

In the literature on distance to crime, one group of offenders that has been examined are persistent offenders. A few studies have found that persistent offenders, the small percentage of all offenders who are responsible for a majority of all crime, travel shorter distances than other offenders (Baldwin & Bottoms, 1976; Costello & Wiles, 2001; Wiles & Costello, 2000). One explanation is that persistent offenders do not travel in order to commit crimes but more often commit when presented with an opportunity during their normal, routine activities (Wiles & Costello, 2000). Wiles and Costello continue that the reality of the persistent offender is that their offending behaviour is constrained by limited travel patterns and dominated by opportunity. As a result, persistent offenders frequently offend within the same, small geographic area (LeBeau, 1985, in Warren et al., 1998).

The journey to crime, or criminal commute, is essentially the distance travelled to the crime location. No matter the distance travelled, the journey seems to be based on a search for a suitable target or victim that satisfies the reward versus risk decision process resulting in the individual offending if the reward is perceived to be higher than the risk (Baldwin & Bottoms, 1976; P.L. Brantingham & P.J. Brantingham, 1991, 1993; Rhodes & Conly, 1991; Wiles & Costello, 2000). In some cases, offenders will appear to travel

further, even much further, away from their residence, especially when the target, while perhaps making offending sometime more difficult, presents the perception of a potentially higher reward (Van Koppen & Jansen, 1998; Wiles & Costello, 2000). In their study though, Wiles and Costello found that even when offenders offend at distances further from their residence, the offence location is often near an area that is still known to the offender such as a relative's residence or former residence.

The most consistent finding in all the research on the distance to crime is that of distance decay. Time and time again research has found that there is a decrease in offending associated with an increase in distance from the offender's residence. Thus, the patterns have become predictable (Costello & Wiles, 2001; LeBeau, 1987; Wiles & Costello, 2000).

2.4.3 Offender mobility

The mobility of offenders is a topic related to distance to crime and the criminal commute (P.L. Brantingham & P.J. Brantingham, 1984; Rhodes & Conly, 1991). The distance to crime topic emerged from the mobility topic. While distance to crime research focuses on patterns in the distances travelled between offender residence and offence location, the mobility topic is concerned with the how and where of offender movement.

As attempts to understand the how and where aspects, studies of offender mobility tend to consider that the search for targets is not random and occurs close to nodal points (P.L. Brantingham & P.J. Brantingham, 1993). Investigation may consider movement along pathways, specifically, looking at traffic arteries to understand what

routes may be used by offenders in their movement. Other research has attempted to understand the reasons behind offender movement and have incorporated such models as economic man, transit models, leisure models and have also considered land use and zoning models (P.J. Brantingham & P.L. Brantingham, 1998).

While the study of geographic mobility has a long history in the social sciences, it is an area in criminology that some claim has not received much attention and is under researched (Gabor & Gottheil, 1984; Hartnagel, 1997; Tittle & Paternoster, 1988). The application of mobility and offender movement to criminological topics is based on the idea that mobility could be related to crime rates for such reason that high mobility may lead to less social cohesion and a higher degree of disorganisation (Hartnagel, 1997). Support for this idea is provided by Hartnagel's finding that the Canadian provinces with higher mobility have higher crime rates. In addition, a number of other studies have reported an association between mobility and crime rates (Crutchfield, Geerken & Gove, 1982; see also Tittle & Paternoster, 1988). Other research however has found no association, or a negative association or mixed results on the association between mobility and crime rates (see Tittle & Paternoster, 1988). As such, the body of research on mobility and crime rates is contradictory and inconclusive.

2.4.4 Spatial analysis and crime analysis

Pattern theory and its related topics have led researchers to attempt to understand crime patterns by incorporating geographical, visual tools and modern computer systems. Spatial analysis and spatial crime analysis are umbrella terms for that attempt.

The interest of pattern theorists in spatial analysis stems from the fourth aspect of P.J. Brantingham & P.L. Brantingham's (1984) pattern theory, the spatial-temporal aspect. Spatial and temporal analysis is enabled by incorporating concepts, processes and technologies used in the science of geography. In effect, spatial crime analysis can be considered the result of the marriage of geography and criminology – spatial crime analysis is geographic analysis of crime data (P.J. Brantingham & P.L. Brantingham, 1984).

While spatial analyses are conducted much more often in 2006 than even ten years ago, it is not an entirely contemporary phenomenon. In fact, there is a long history between geography and criminology with the first evidence of geographic analysis occurring nearly 125 years ago (P.L. Brantingham & P.J. Brantingham, 1991). Both the works of Guerry (1833) and Quetelet (1842) examined spatial relations between crime in specific areas of France (in Althausen & Mieczkowski, 2001). Through his analysis, Mayhew found that similar criminal areas existed in England during the nineteenth century (in Althausen & Mieczkowski, 2001). In the United States, the concept of criminal areas was furthered by the work of Shaw and McKay (1942) through their work on delinquency in Chicago during the 1920's and 1930's (in Althausen & Mieczkowski, 2001).

Criminologists have long known that crime is not evenly distributed. Criminal events occur more frequently in some locations and less frequently or not at all in other locations. In areas where crime occurs more frequently, assumptions have been made based on research that while some areas may experience higher concentrations of crime in general and others may be areas of specific crime specialization (Eck, Chainey,

Cameron, et al., 2005; Schmid, 1960). Through the application of the concept of location quotients, the Brantinghams calculated crime quotients in areas and then compared location quotients from different areas to illustrate crime differences between areas. By applying quotients indicating the degree of crime in an area as compared to crime in surrounding areas, P.L. Brantingham and P.J. Brantingham (1998) were able to suggest how to identify the comparative differences that exist in areas.

Advances in computer technology have enabled criminologists to view and examine crime differences visually by providing the ability to analyze crime data and produce spatial data in visual forms such as maps. A major benefit of computer tools has been that non-technical audiences can understand data. Spatial analysis is useful for mapping, analyzing and visualizing crime data (Williamson, McLafferty, McGuire, et al., 2001). By placing crime on a map, criminologists can search for and reveal patterns by analyzing the visual display of individual or aggregate offences, individual offenders and repeat offenders and also for identifying areas that are hot spots for crime (Hirschfield, 2001). Maps have enabled criminologists to analyze and depict crime occurrences and patterns at municipal, national and international levels (P.L. Brantingham & P.J. Brantingham, 1998).

While maps can be created solely on available data, criminologists have maintained that in the process of making data visual, the produced maps need to be grounded in a theoretical perspective in order for them to provide some contextual meaning (Eck et al., 2005). Environmental criminology, especially pattern theory, can provide that context. By being grounded in pattern theory, crime maps can provide valuable information to researchers, police and the community understandably,

efficiently and effectively (Eck et al., 2005). In comparison, “[m]aps that are not based on theory will provide officers with inadequate and even misleading information” (Eck et al., 2005, p. 1).

As evidenced by the graphical display of crime maps, crime is not spread consistently over entire areas but rather exists and clusters in some areas and does not exist in other areas (Eck et al., 2005). The clusters of concentrated crime activity are referred to as hot spots. The term hot spot, and much of the spatial analysis techniques associated with hot spot analysis, originates from medical geography and the search for clusters of illness and disease (Ratcliffe & McCullagh, 2005).

In addition to hot spot analysis, Graphical Information System (GIS) software enables researchers to conduct analysis of probable routes (roadways) used by offenders in their journey to crime (Felson, 1987). This is a valuable tool for researchers examining crime from a pattern theory perspective. Vann and Garson (2001) identify over 20 functions from GIS software that are applicable to social science analyses. Pin mapping, hot spot analysis mapping, crime density mapping, time series mapping, proximity mapping and route network analysis are some functions that may be useful in a study on crime patterns (ESRI, 2005).

The uses of GIS and other crime mapping tools are not only useful to academic crime analysts. Police agencies themselves are utilizing GIS products in their daily activities. In addition to crime analysis, police agencies are using spatial analysis software for resource planning and distribution, to aid in community policing efforts, to aid dispatch officers and overall, to make more informed command decisions (Vann & Garson, 2005). Spatial analysis has provided police agencies with the ability to analyze

the intelligence that exists in their data systems, which enables intelligence led, evidence based policing; key concepts in modern policing (Williamson et al., 2001).

2.5 Summary

A declining interest in the deterministic approach common to criminology led to the development of environmental criminology. Environmental criminology is viewed by some as providing a fresh, pragmatic perspective from which to view and study crime. The field replaces the deterministic focus on individual causes of crime as a part of an offender's history with a focus on the here and now features that govern individual behaviour, features such as motivation and opportunity (Felson & Clarke, 1998).

Environmental criminology was and remains a critical shift away from the *individual and motivation* to *motivation and opportunity*. Motivation however, has become less of a concern as environmental criminologists have refined their theories and ideology (P.J. Brantingham & P.L. Brantingham, 1991b). The multitude of analyses that have been conducted under the umbrella of environmental criminology depict a shift away from sociological explanations and onto explanations based on opportunity, movement, activities, patterns and geography (P.J. Brantingham & P.L. Brantingham, 1991b). The perspectives of environmental criminology "...routine activities, situational crime prevention...rational choice [and pattern theory] produce complementary and supportive results" (P.J. Brantingham & P.L. Brantingham, 1991c, p. 238).

By focusing away from individual causes of crime, environmental criminologists have been able to develop a better understanding about how offenders behave in concert with their environment. As such, theorists have been able to produce pragmatic ideas and

recommendations that have proven effective in crime prevention efforts. Those ideas have not been aimed at correcting the individual, but rather at reducing opportunities in the environment.

While environmental criminology, and especially research based on pattern theory, have long used maps to analyze crime data, recent advances in micro computing have enabled researchers to conduct more sophisticated analyses through improved data analysis and spatial mapping capabilities. This technology has been embraced and is used by academics, police agencies and their combined partnerships as they work together in crime prevention and crime reduction efforts. Crime mapping has become an integral component in providing police agencies with information useful for combating crime. Environmental criminologists caution however, that in order for a map to provide proper information, it must be based on theory. Without conducting an analysis grounded in theory, data portrayed on a map has no meaning.

CHAPTER 3: LITERATURE REVIEW OF PERSISTENT CRIMINALITY AND CRIMINAL CAREER RESEARCH

3.1 Introduction

A small percentage of offenders commit a majority of all crime (Cernkovich & Giordano, 2001; Farrington, 1992, 2003; Gottfredson & Hirschi, 1986; Home Office, 2004b, 2005; Johnson, Simons & Conger, 2004; Roberts, 2002; Wolfgang, Figlio & Sellin, 1972). As evidenced by the extensive list of references following the statement, this acceptance comes not from opinion, preposition or theory but from the reported findings of previous research.

The discovery that most crime could be attributed to few offenders was first reported in the findings of the famous Philadelphia Birth Cohort study conducted by Wolfgang et al. (1972). In their initial analysis of the birth cohort data, Wolfgang et al. reported that only 6% of the juveniles committed the bulk of all crime. Since that time, other researchers in the United States have reported similar findings with somewhat different proportions. In his study, Mednick (1977) found that a mere 1% of the male population accounted for more than half of all the crime (in Gottfredson & Hirschi, 1986). Similarly, Wilson & Herrnstein (1985, in Gottfredson & Hirschi, 1986) report that chronic offenders account for 75% of the crime. In a 1984 article, Cohen provides 13 additional estimates claiming that some small percent of offenders committed a large percent, or the majority, of the crime committed (in Gottfredson & Hirschi, 1986).

Similar findings have been reported in Great Britain. British research has claimed that approximately 10% of all offenders commit half of all the crime (Home Office, 2004b, 2005; Roberts, 2002). Further, the Home Office (2004b) estimated that the busiest, most prolific offenders, while making up only half of one percent of all offenders, account for approximately 9% of all crime. Similar findings have been reported on convictions. A 1989 report distributed by the Home Office claimed that 21% of offenders accounted for 65% of all convictions (see Farrington, 1992).

Since Wolfgang et al.'s (1972) work, a considerable amount of research has been conducted on the small number of offenders who commit a large number of crimes. That body of research became known as criminal career research. The body of criminal career research has slowly built momentum and the number of studies increased most rapidly through the 1980s and 1990s. Initially however, the increase in the number of studies was so slow that in 1986, 14 years after the Philadelphia birth cohort findings were published, the criminal career focus was considered a new area in criminology (Gottfredson & Hirschi, 1986).

While considered a new area, the idea of the criminal career can actually be traced back to the turn of the twentieth century (Gottfredson & Hirschi, 1986). In a definition from 1895, "...the habitual criminal is characterized by the wilful persistence in the deliberately acquired habit of crime" (Morris, 1951, as cited in Gottfredson & Hirschi, 1986). This chapter will later identify a number of definitions that have been used in past research. In reading those definitions, it becomes evident that the definitions used in research have not changed much in the 100 plus years since 1895 (Gottfredson & Hirschi, 1986). To clarify however, while it is somewhat interesting to see similarities between

the old definition and contemporary definitions, none of the knowledge reported in the literature come from that early era. The knowledge gained in the history of criminal career research, or even the existence of criminal career research, is considered an area within criminology whose popularity was initiated by the findings of Wolfgang et al. (see Gottfredson & Hirschi, 1986). The work of Wolfgang et al. (1972) is regarded as the most important contribution to the area of criminal career research. Brame, Bushway & Patternoster (2003) suggest that the data gathered in the Philadelphia birth cohort study is still considered the best data available for examining and understanding criminal involvement.

Over the years since Wolfgang et al. (1972), the small percent of frequent offenders commonly became labelled in the criminal career research as repeat offenders. In addition to the repeat offender label are numerous other labels that have been applied to this group of offenders. A second label seemingly as common as repeat offender is chronic offender. While common, neither the repeat offender nor chronic offender labels seem to be used as consistently as the term 'persistent offender.' That fact may be due to the application of a normal definition of the term persistence in comparison to the term repeat, which could simply refer to a second criminal act, or chronic, which could refer to some long term, and stable, continuing condition. Other less common labels were identified in the literature. Those labels include the following: high-rate offender, career criminal, habitual offender, life-persistent offender and multiple offender. All of the labels, commonly applied or not, are used interchangeably in discussion of the research on the small percentage of offenders committing the majority of the crime. What those labels consistently refer to are individuals with a sustained pattern of illegal acts

(Gottfredson & Hirschi, 1986). Yielding to the fact that the persistent label is commonly and consistently applied in the literature, the term persistent offender is used for the remainder of this chapter and can be considered synonymous with chronic offender, repeat offender, and other labels of persistence.

It is important to note that studies of persistent offenders and their offences have relied on multiple sources of data in order to understand the criminal history of offenders for research or sentencing purposes. The data sources of most relevance to those purposes contain information on arrests, convictions and incarceration (Rodriguez, 2003). In some cases, research has combined arrest, conviction and/or incarceration data collected from multiple sources (Rodriguez, 2003).

In this review of the literature on persistent offenders, general research findings on the criminal career will be discussed. Research focusing on the important sub-topics of onset of criminal activity, the length or duration of an offender's criminal activity, and the desistence from criminal activity is also presented. Generally speaking, research on persistent offenders indicate that these offenders begin offending at an early age, their criminal activity peaks at age seventeen, and thereafter declines with age (Johnson et al., 2004). This onset, peak, decline trend has been described in the research as the age-crime curve.

Another area examined in the literature on persistent offenders is offence specialization, that is, an examination into whether offenders tend to specialize in certain types of crime. Related to the specialization of offending is frequency of offending, or, criminal lambda. Criminal lambda examines whether offenders offend at a certain rate.

The investigation of persistent offenders has drawn criminologists from a variety of theoretical backgrounds. The criminal career research itself however, does not include or provide any theoretical background. The literature in the field of the criminal career is intended to provide a framework rather than a theory to aid in the study of persistent offenders (Farrington, 1992).

Persistent offender research focuses on crime only after the individual begins offending. With a focus on the continuation of offending, researchers investigating persistent offenders proceed with the assumption that some factors cause offenders to begin offending (Laub & Sampson, 2003). Nevertheless, those causal factors of offending are sometimes considered (Laub & Sampson, 2003).

The remainder of this chapter presents the research findings of studies investigating persistent offenders. The next section, Introduction to Criminal Career Research, provides an introduction of the criminal career as well as some high-level, general findings. Section two describes the research on the life-course model which serves as a framework for studying persistent offenders. An overview of that model and some findings are presented in that section as well. The life-course section also presents the contradictory models forwarded by Moffitt (1993), and Gottfredson and Hirschi (1990) as viewpoints from which to study persistent offenders. Sections three through six present the research on four sub-topics within the persistent offender research; onset, specialization, lambda, and desistence. Section seven presents the definitions of persistent offenders as applied in research and statute. Given that courts are concerned with the trials and sentencing of persistent offenders, section seven includes the definitions used for persistent offenders, referred to as habitual offenders by the courts,

and applied by the courts in the United States. Section eight discusses the research on selective incapacitation. The final concluding section summarizes the research covered in this chapter.

3.2 Introduction to Criminal Career Research

Over time the body of research on persistent offenders came known as the criminal career framework. Farrington's (1992) definition of the criminal career approach as "...the longitudinal sequence of offences committed by an individual offender" (p. 521) is virtually identical to the definition offered in 1986 by Blumstein, Cohen, Roth and Visher who state that "[a] criminal career is the characterization of the longitudinal sequence of crimes committed by an individual offender" (as cited in Gomez-Smith and Piquero, 2005, p. 516). In a 1987 article, Blumstein and Cohen offer a definition of research on criminal careers which expands their earlier definition to include consideration for factors that affect an individual's involvement in offending. Blumstein and Cohen (1987) describe that "[r]esearch on criminal careers involves characterization of the longitudinal pattern of crime events for offenders and assessment of the factors that affect that pattern" (p. 985). The research implies that individuals do not necessarily commit offences over some short, finite time but, that persistent offenders engage in crime over longer time periods. The focus on persistent offenders therefore is over the extended time from onset to desistence (Gottfredson & Hirschi, 1986).

With regard to the 'career' portion of the criminal career term, Blumstein, Cohen and Farrington (1988) clarify that 'career' in this context refers to a duration of time rather than to the traditional definition of career, which is a way of making a living.

The topic, even the term, criminal career has at times been used synonymously with the term career criminal. This is evidenced not only in reviewed student academic papers but also in the literature on persistent offenders. Scholars who have published extensively in the area of persistent offenders, point out that the criminal career is not the same as the career criminal (Blumstein et al., 1988a). The criminal career is characterized by a sequence of offences by an individual offender over some time period whereas the career criminal is a type of offender focused on in some other research studies (Blumstein et al., 1988a). The criminal career research focuses on the acts committed by an individual and research on the career criminal focuses on the actor (Blumstein et al., 1988a). It is a fine line between the two terms as there is uncertainty as to where the line is drawn between studying the events of an individual versus studying the individual.

A review of the literature on criminal career research reveals that the perspective is in fact not a theory nor does it attempt to produce a criminal career theory based on findings (Blumstein et al., 1988a; Farrington, 1992). The criminal career research has provided a framework as a way of organizing knowledge in order to enable analysis of the persistent offender (Blumstein et al., 1988a; Farrington, 1992).

As stated above, the term criminal career suggests that crime can occur over a career, a time duration. If crime can have a career however, it is suggested that it needs a beginning, a duration, and an end (Blumstein & Cohen, 1987; Blumstein et al., 1988a; Farrington, 1992; Gottfredson & Hirschi, 1986). Blumstein et al., (1986, in Gomez-Smith & Piquero, 2005) suggest that criminal career has four main components: participation, frequency, seriousness and length. Those authors describe participation as

event linked; separating individuals who have offended from individuals who have not offended. Frequency concerns the rate of an individual's criminal activity, seriousness refers to offence severity and length refers to "how long the offender is actively committing crimes" (Blumstein et al., 1986, as cited in Gomez-Smith & Piquero, 2005). Other terms associated with criminal career research include onset, prevalence, specialization, lambda, duration and desistence. Terms such as prevalence and severity are used within the literature however, the other terms have been identified as sub-topics within criminal career research and are discussed in the subsequent sections of this chapter. Before examining those sections, general patterns in the findings from studies on persistent offenders are discussed.

The most important finding of studies on persistent offenders and the criminal career is that of the age-crime curve. The age-crime curve is characterized by an onset of offending early in life with an increase in the number of offences committed through adolescence to a peak in late adolescence followed by a drop-off in early adulthood and a gradual decline into adulthood. Gottfredson & Hirschi (1990) suggest that the age-crime curve is not a new phenomenon. Those authors report that they found that evidence suggesting that the age-crime curve has held constant over the last 150 years. As will be discussed in the section on onset, a large proportion of individuals begin to offend in their early teens. From this age, and sometimes earlier ages, there is a continuance of offending through the adolescent years until the number of offences committed peak in late adolescence and/or early adulthood (Blumstein & Cohen, 1987; Farrington, 1992, 2003; Gottfredson & Hirschi, 1986; Pyle, 1974; Sampson & Laub, 2003).

Similar patterns have been found in data on convictions. Several studies have reported that the number of convictions also peaks in the late adolescent years. Two studies in particular found that the number of persons convicted is highest at age seventeen (Farrington, 1992; Gottfredson & Hirschi, 1986). Both the number of offences and the number of convictions decline after the late adolescent peak (Haapanen, 1997, in Gottfredson & Hirschi, 1990; Gottfredson & Hirschi, 1986; Laub & Sampson, 2003; Piquero, Brame, Mazerolle & Haapanen, 2002; Sampson & Laub, 2003). Despite the findings that crime declines with age in one article, Blumstein, Cohen and Farrington (1988) suggest that crime does not decline with age but that offending continues to occur until a point at which the process of desistence begins.

A consistent finding in the research is that offending leads to more offending (Farrington, 1992; Gottfredson & Hirschi, 1990). In his research Farrington concluded that of 153 offenders with a single conviction, 68% committed a second. Of those that committed a second, 71% committed a third and of those, 80% committed a fourth. Further, Shannon (1981, as cited in Gottfredson & Hirschi, 1990, p. 261) found that “almost two-thirds of those [offenders] who have as many as five criminal offences before age eighteen will have five or more criminal offences in the dozen or so years thereafter.”

The continuance of offending links juvenile crime to adult crime. With the amount of interest in early onset and the prevalence of offending as a juvenile, an interesting finding is that 40% to 50% of adults do not have juvenile records (Laub & Sampson, 2003). The fact that almost half of adults do not have juvenile records tells us

that early onset does not predict all adult crime as some individuals do not begin offending until their adult years.

The remaining sections of this chapter expound on the general findings presented above and additionally provide a more in-depth review of the research conducted in their respective topic areas.

3.3 Life-Course Criminology

The life-course approach to persistent offending is an elaboration of the criminal career framework that became popular in the 1980s (Farrington, 2003; Nagin & Farrington, 1992). Researchers proceeding with a life-course perspective accept the common findings of the criminal career approach and are concerned with the common factors of onset, peak age, length, desistence, etceteras (Farrington, 2003; Nagin & Farrington, 1992).

The life-course approach, which incorporates risk factors and life events into the criminal career research, is also known as developmental criminology (Farrington, 2003). It is aptly named as the life-course approach because it is based on development through the life course (Nagin & Farrington, 1992) with the major objective being "...to link social history and social structure to the unfolding of human lives" (Laub & Sampson, 2003, p. 33). In general terms, the life-course approach holds that an individual's life is shaped by the events that an individual experiences over time (Gomez-Smith & Piquero, 2005). As such, life-course theorists suggest that in order to understand current behaviour, we must understand the past events experienced by the individual (Gomez-Smith & Piquero, 2005). Life-course theorists also suggest that criminality, and its

development, must be examined over long periods of time and while the focus of investigation may be on the criminal events, researchers must also consider the factors that influence why an individual commits an offence (Farrington, 2003; Laub & Sampson, 2003).

In the 1980s, life-course researchers were initially guided by three concerns: the development of antisocial behaviour and offending; the various risk factors at different ages; and the effects of life events on an individual's course of development (Farrington, 2003). Laub & Sampson (2003) have enhanced the initial three concerns by stating that the life-course perspective is based on four principles. First, the perspective maintains a focus that historical time and place contexts shape individuals. Second, the impact of life events are dependent on when they happen. That is to say for example, that the death of a family member would have a different impact on an individual at age five as compared to age twenty-five. Third, the life-course perspective acknowledges "an intergenerational transmission of social patterns – the notion of linked lives and interdependency [and fourth,] human agency plays a key role in making choices and constructing one's life-course" (p. 33).

In the 1990s the life-course approach gained attention and became prominent as a result of various longitudinal studies, particularly, the Office of Juvenile Justice and Delinquency Prevention studies on the causes and correlates of crime. Additional research conducted were the Seattle Social Development Project, the Dunedin study in New Zealand, the Montreal Longitudinal-Experiment study and some further analyses by Laub & Sampson of the data collected by the Gluecks (Farrington, 2003).

Considering that criminal career and life-course perspectives are interested in offenders over long periods of time, there is both a desire and a need in those areas for research incorporating longitudinal designs. New studies would complement existing longitudinal studies that examined offending over time, all of which report findings consistent with one another.

In the 1930s and 1940s the Gluecks examined the relationship between age and offending. The Gluecks found that the amount of crime decreases with time but did not provide explanations for the reduction. In 1966, Robbins reported finding a continuity of offending into middle age but also found that the effect of early offending, continued offending, diminishes after age thirty. In the Cambridge-Somerville Youth Study, McCord (1980) reported an interesting finding; while a vast majority of those who had committed crimes as juveniles also committed crimes as adults, the majority of adult offenders had no history of juvenile criminality. Finally, Wolfgang et al. (1972) reported findings from the Philadelphia Birth Cohort study. In 1987, after additional analysis of data collected during the Philadelphia birth cohort study, Wolfgang, Thornberry and Figlio reported that there was a strong continuity of offending from the juvenile years to the adult years, that the number of offences peaked at age sixteen, and that the number of crimes committed was constant from ages ten through sixteen (see Gomez-Smith & Piquero, 2005). In yet another examination of data from the Philadelphia Birth Cohort, Tracy and Kempf-Leonard (1996) found that a vast majority of subjects in the study had no record of criminal involvement (in Laub & Sampson, 2003). Additionally, they found that only 6% of all subjects committed crimes as adults only, 8% as juveniles only and that two-thirds of all juvenile offenders did not offend as adults.

Similar patterns have been found in longitudinal research conducted outside of the United States. In the Cambridge Study in Delinquent Development done in the United Kingdom, Farrington (2002) found a continuity of offending from juvenile to adult (see Laub & Sampson, 2003). Stattin and Magnusson (1991, see Laub & Sampson, 2003) reported similar findings in Sweden. Even when the longitudinal studies above are counted, Laub & Sampson claim that few longitudinal studies actually follow cohorts across the full life-course.

In reviewing the literature, it becomes evident that the criminal career and life-course perspectives are compatible with many criminological theories. Farrington (2003) outlines his developmental and life-course theory which he refers to as the Integrated Cognitive Antisocial Potential (ICAP) theory. Farrington's theory integrates points from other theories including "strain, control, learning, labelling, and rational choice approaches" (p., 231). Farrington further declares "[ICAP's] key construct is antisocial potential (AP), and it assumes that the translation from antisocial potential to antisocial behaviour depends on cognitive processes...that take account of opportunities and victims" (p. 231).

As proponents of the life-course perspective, Laub & Sampson (2003) argue that the perspective offers the most compelling explanation for understanding persistence and desistence over an individual's life. They suggest also that an age based social control and bonding theory best suits the study of the criminal career. Based on their theory, Laub and Sampson maintain that persistence is a result of lack of social controls, engaging in few structured routine activities, and a lack of human agency. Conversely,

desistence is evidence of social controls, having structured routine activities, and a purposeful lifestyle.

Other researchers have applied other theories in their investigations of the criminal career. For instance, Catalano and Hawkins (1996, in Farrington, 2003) suggest a social development model which integrates social control and social bonding, social learning and differential association. As will be discussed later in this section, Moffitt (1993) categorized offenders into two groups based on criminal activity and antisocial behaviour. Leblanc (1997, in Farrington, 2003) proposed a theory based on control theory. Thornberry and Krohn (2001, in Farrington, 2003) elaborated on Thornberry's (1987) interactional theory which includes aspects of attachment and commitment. Finally, in their work, Horney, Osgood and Marshall (1995) suggested that the rational choice or routine activities theories could prove useful in thinking about life circumstances.

3.3.1 Moffitt's taxonomy

In 1993, Moffitt offered a developmental taxonomy based on antisocial behaviour as her attempt at explaining persistent criminal behaviour. More specifically, Moffitt's investigations and propositions focus on the antisocial behaviour characteristic of the small group of persistent offenders (Moffitt, 1993). In developing her developmental taxonomy, Moffitt rejects the general theory propositions provided by Gottfredson and Hirschi (1990) and asserts that there are two distinct groups of persistent offenders; adolescent limited offenders and life-course persistent offenders. Adolescent limited offenders begin offending as adolescents and desist their offending in late adolescence or early adulthood. Life-course persistent offenders start early and desist later; that is, life-

course offenders offend as adolescents and as adults. Assigning membership to either group is determined by the length of the offender's criminality over time (Piquero, Mazerolle, Brame, & Dean, 1999).

Moffitt (1993) describes adolescent limited offenders as individuals with limited antisocial behaviours who begin offending in early adolescence but do not continue offending after adolescence. Generally, these offenders do not commit again after age 18 (Carrington, Matarazzo, & deSouza, 2005; Cernkovich & Giordano, 2002; Moffitt, 1993). Moffitt claims that adolescent limited offenders exhibited only limited antisocial behaviours because they are well socialized and well adjusted individuals (see also, Piquero et al., 1999). The reasons that individuals in this group begin to offend can be explained by a maturational gap, being immature, and reactive to peer pressure (Moffitt, 1993; Piquero et al., 2002). Adolescent limited offenders tend to engage in low level forms of deviance and their delinquency is generally of a benign nature (see Berg & DeLisi, 2005). These individuals do not continue to offend as adults due to the fact that they do not have the same risk factors as life-course persistent offenders and as such, they become adults with prosocial ideas and behaviours (Moffitt, 1993). Moffitt believes that the majority of juvenile offenders are adolescent limited offenders.

The life-course persistent offenders on the other hand, continue to exhibit negative, antisocial behaviours and are unable to effectively socialize, making change unlikely and failure likely (Piquero, et al., 2002). They begin offending early, perhaps earlier than early adolescence, commit frequently and maintain a sustained involvement in crime over their life span (Berg & DeLisi, 2005; Brame & Dean, 1999; Moffitt, 1993; Piquero, et al., 1999). This group of offenders commit crimes both before and after the

age of eighteen (Carrington et al., 2005; Cernkovich & Giordano, 2002; Moffitt, 1993). It has been suggested that given the early onset of offending for individuals in this group, early arrest may be the best predictor of long term recidivism (persistence) (Piquero et al., 1999). While they are a smaller group than the adolescent limited offender group, life-course persistent offenders tend to commit more crime (based on earlier onset, frequent offending, and length of offending career) and therefore do a great deal of damage as the group committing a 'lion's share' of juvenile crime (Carrington et al., 2005; Laub & Sampson, 2003).

3.4 Gottfredson, Hirschi & the General Theory of Crime

In an exchange of articles with proponents of the life-course perspective and criminal career research, Gottfredson and Hirschi (1990) criticize criminal career research by revealing inconsistencies and questioning the findings of criminal career research (see also Gottfredson & Hirschi, 1988; 1986). Gottfredson's and Hirschi's 1990 book describing their general theory of crime becomes yet another critique of criminal career research and especially, the life-course approach to criminal career research.

Gottfredson and Hirschi (1990) suggest that their general theory provides a much better explanation and a much better framework for studying persistent offenders:

Our theory sees crime as a consequence of relatively stable characteristics of people and the predictable situations and opportunities they experience. It does not presume that major changes in criminal activity are associated with entry into or exit from roles, institutions, or organizations. It may therefore be adequately tested at any point in the life course. (p. 294).

Whereas the life-course perspective suggests that the factors responsible for an individual's propensity to offend are different at different ages, the general theory

suggests the factors are not different. Gottfredson and Hirschi contend that the factors causing an individual to offend do not change from one age to another. They suggest the reason the factors do not change is because crime is relative to self-control and self-control is the principal barrier to an individual committing offences. Additionally, since Gottfredson & Hirschi theorize that self-control is stable over the ages, exhibiting early self-control suggests one will exhibit self-control as an adult. Based on the notion of exercising self-control over the ages, Gottfredson's and Hirschi's general theory as applied to the persistent offender is concisely summarized as follows. Individuals exhibiting low self-control are more likely to offend, will begin offending earlier than individuals with higher self-control, will offend more frequently and will desist offending later in life (Mazerolle, Brame, Paternoster, Piquero, & Dean, 2000; Piquero, 2000b; Piquero et al., 1999).

Whereas life-course perspective researchers have attempted to explain desistence using a variety of concepts, most notably maturation, Gottfredson & Hirschi (1990) contend that desistence cannot be explained by life events associated with aging but just by aging itself. In fact, Gottfredson & Hirschi argue that the life-course perspective, in attempting to apply maturation to explain desistence, is one of the factors leading to their rejection of that perspective. They suggest that since the life-course theorists cannot explain desistence, yet, those same theorists purport that the factors contributing to onset and desistence are the same, then it should be concluded that life-course theorists cannot explain onset either (Gottfredson & Hirschi, 1990).

There are two important points shared by the life-course perspective and the general theorists. First, they both accept the existence of a small group of offenders who

do not age out of crime (although the two theories provide differing explanations as to why some offenders do not age out of crime). Second, both the life-course perspective and the general theorists argue that the most delinquent adolescents are the most likely to become adult offenders (Cernkovich & Giordano, 2002).

This chapter now moves onto the topic of onset and discusses the research and findings suggesting how onset relates to and leads to other topics relevant to persistent offender research.

3.5 Onset

Much of the criminal career research on onset is focused on the early ages of youth. What leads research to this focus is that a great many offenders begin offending in childhood or early adolescence (see Laub & Sampson, 2003). Farrington (2003) suggests that offenders with early onset ages begin offending early because they are more at risk to offend based on the factors that contribute to criminality including, low intelligence, family, lower socioeconomic status, peer groups, trouble in school and behaviour problems (see also, Ge, Donnelan & Wenk, 2001). Another reason supporting a research focus on adolescent offending is that adolescents commit a disproportionate amount of crime. Based on 1998 U.S. population data, Johnson et al. (2004) found that adolescents accounted for 6% of the total U.S. population yet accounted for 16% of all violent crime and 32% of all property crime. Further, the offences committed by all offenders are virtually the same in childhood as in adolescence and adulthood (Farrington, 1992).

The age-crime curve illustrates that offending begins early in adolescence, the number of offences peak in late adolescence and decline into adulthood. The research

contributing to the age-crime curve discussion repeatedly support this finding and, as reported earlier, the curve has held up over the last 150 years. While some studies report differing ages of onset, the fact remains the ages fall in early adolescence.

Much research has found the peak ages of onset to be between eight and 14 years of age (Farrington, 2003; Gomez-Smith & Piquero, 2005; Piquero et al., 2002). The same findings are true in Great Britain where Farrington (1992) reported that for subjects in the London longitudinal study, the peak age of onset was 14 years. Similarly, the Home Office (1989, see Farrington, 1992) found a peak onset age at 14 years but also reported a second peak in onset at age 17 years.

These findings hold true in court career research as well. In a longitudinal cohort study on the court careers of individuals in Canada, Carrington et al. (2005) found that the age of onset group of 14 and 15 year olds contributed the largest number of chronic offenders. Age of onset in that study referred to the offender's age when they had their first incident referred to court. In addition to that finding, Carrington et al. reported that over half of all the court study persistent offenders had onset ages of 14 through 16.

Another finding consistently reported in the literature is the negative relationship between early age of onset and persistence. A number of studies have found that the earlier the age of onset, the more persistent the offender will become (Blumstein et al., 1986, in Gomez-Smith & Piquero, 2005; Farrington, 1992; Home Office, 2005) and therefore age at first offence rather than age at first arrest or conviction is the best predictor of future crime (Piquero et al., 1999).

In addition to the persistence of offending, early onset seems to predict the length of the criminal career as well. Much research has reported that the earlier the age of

onset, the longer the criminal career (Blumstein et al., 1986 in Piquero et al., 1999; Farrington, 2003; Home Office, 2004a; Laub & Sampson, 2003; Wolfgang, Figlio and Sellin, 1972). Farrington (1992) found longer career lengths for earlier onset ages. While this Farrington (1992) study reports onset of conviction rather than onset of involvement or onset of arrest, the following findings are important and interesting nonetheless. He found that when offender's conviction onset age was 10 or 11 years of age, the criminal career length was eleven and one-half years. When age of conviction onset was 16, career length was eight years and when conviction onset age was 17, career length was only three years. In this same 1992 study, Farrington reported that the average age of conviction onset was 17 years. It is not surprising then that based on the findings of research investigating early onset, persistent offending and criminal career length, other research has found that persistent offenders have longer careers than offenders that commit crimes only occasionally (Farrington, 1992).

Age of onset as referred to in the above studies is typically considered age at first arrest due to the fact that researchers are relying on data from official records. In some cases, arrest records or even age at first incident of involvement can be considered when the data is collected through self-report interviews. Also, some research reported using age at first conviction to determine a different sort of onset age; conviction onset age. Farrington (1992) declares however, that "the true age of onset of offending will precede the age of the first conviction" (p., 527).

The above research creates the perception that age of onset is only an early life phenomenon and as such, if one had to differentiate between late onset and early onset, one may define late onset as being in the mid to late adolescent years while early onset

occurs in the younger adolescent years or even childhood. Other researchers suggest that early onset and late onset have a larger gap in years. Eggleston and Laub (2002) state that the distinction between late onset and early onset should be aligned with onset as adults and onset in the pre- or early adolescent years. With Eggleston and Laub's distinction then, the early onset offenders could fall into either of Moffitt's adolescent limited or life-course persistent offenders (remembering that Moffitt argues that life-course persistent offenders begin offending earlier than adolescent limited offenders) whereas, late onsetters would be defined as offending only in the adult years. Eggleston and Laub also raise the point that there exist adult offenders who do not offend as juveniles. This point is a fact worthy of discussion since, while many juvenile offenders become adult offenders, many adult offenders were not delinquent juveniles (Eggleston and Laub, 2002).

Considering that many adult offenders were not delinquent youth, it is surprising that there is not a great number of studies focusing on adult onset exclusively (Gomez-Smith & Piquero, 2005). The scarcity of research on the topic led Eggleston and Laub (2002) to refer to the topic of adult onset as a "...neglected dimension of criminological research..." (p. 613) and argue that research into adult onset is important because it is a common event not rare event.

The existence of adult onset has been quantified in past research and therefore, the findings of that research serve as evidence supporting the need for more research examining adult onset. For example, Wolfgang et al. (1987, in Gomez-Smith and Piquero, 2005) found that 24% of the offenders in the Philadelphia cohort study were adults at time of onset of offending. Similarly, Blumstein et al. (1986, in Gomez-Smith

& Piquero, 2005) reported that about half of the adult offenders in their study did not have records of delinquency as juveniles. In reviewing the literature, Eggleston and Laub (2002) reported that 40% to 50% percent of adult offenders actually have an age of onset equal to or older than 18 years of age. Two Swedish studies reported similar findings. Stattin, Magnusson and Reichel (1989, in Gomez-Smith and Piquero, 2005) found that 25% of those who had a criminal record had onset ages above 20 years. The second Swedish study, which tested Moffitt's taxonomy on the two genders, Kratzer and Hodgins (1999, in Gomez-Smith and Piquero, 2005) found that for women, seventy-eight percent were adult onsetters and for men, fifty-five percent were adult onsetters. In further analyses of data collected in the Cambridge and Inner London longitudinal studies Farrington and Maughan (1999, in Gomez-Smith and Piquero, 2005) reported a non-negligible amount of adult onset.

A second reason adult onset is an important topic is because adult crime is a serious problem (Eggleston and Laub, 2002). Based on UCR data for 1999, Eggleston and Laub report that "...adults committed the majority of crime with eighty-three percent of all persons arrested nationally being eighteen or older" (p. 604). The UCR indicates that in 2004 adults accounted for eighty-four percent of all arrests in the United States (U.S. Department of Justice, 2006). This statistic confirms Farrington's (1992) claim that crime is not a predominantly juvenile problem.

3.6 Specialization and Versatility

The topic of specialization has received much attention in the criminal career literature. The theme is whether individual offenders specialize in certain crime types or alternatively, whether offenders are versatile, that is, they do not specialize but commit a

range of different crime types (Mazerolle et al., 2000). Much of this research however, has not focused on sub-group differences such as age, gender and race but, on more general issues and has addressed those issues without theoretical grounding (Mazerolle et al., 2000).

In the research examining specialization and versatility over different crime types, investigators commonly group the crimes into categories rather than attempt to observe a pattern in one single crime type (Mazerolle et al., 2000). By using crime categories it is easier to observe whether an offender commits property crime as opposed to attempting to find offenders that commit only vehicle theft. The idea of finding an individual offender who commits only vehicle theft is not highly likely. In their attempt to find crime categories common in the literature, Mazerolle et al. report that there is no consensus on what categories should be used. For example, in categorizing arrest charge types, Sampson and Laub (2003) divided the crimes into one of four categories: violent crime; property crime; alcohol or drug related crime; and all other crime. In an investigation of specialization, Piquero et al. (1999) divided police contacts into three categories: crimes against persons; property crime; and all other crime.

As discussed previously in this chapter, a guiding theme of research on persistence and the criminal career is age of onset. With respect to specialization, criminal career research tends to focus on age in part as an attempt to understand whether offenders tend to specialize at different ages (Mazerolle et al., 2002). The relationship between age of onset and specialization has not been directly examined but findings regarding early or late onset and specialization have been reported (Mazerolle et al., 2002).

In the specialization topic area, some research has found that age and specialization are related and others report that those variables are not related. In their 1999 paper, Piquero et al. identify a number of studies that found a relationship between age and specialization including those conducted by Chaiken and Chaiken (1982), Cohen (1986), and Farrington et al. (1988). Further, other studies have found a relationship between age of onset and specialization. Tolan (1987) found that offenders with onset ages younger than twelve years were more versatile in their offending patterns than offenders with later onset ages (also, Farrington et al., 1990, both in Piquero et al., 1999). Piquero et al. (1999) found a similar pattern however, when they controlled for age; the relationship between versatility and age of onset almost disappeared leading those authors to suggest that the relationship is more strongly related to age than to age of onset. Supporting this argument is Rojeck's and Erikson's (1982) reported findings that "specialization in offending is not related to onset age" (in Piquero et al., 1999, p. 276). Actually, specialization is similar to crime in the age-crime curve such that there could exist an age-specialization curve. Versatility in crime appears to increase up to age twenty after which offenders exhibit less versatility and tend toward more specialization (Gottfredson & Hirschi, 1990).

With the acceptance of Moffitt's (1990) two offending groups, adolescent limited and life-course persistent, it is evident in the research that those groups have been included in studies in the important sub-areas of criminal career research. The topic area of specialization is no exception. Through her own investigations, Moffitt (1994, in Mazerolle et al., 2000) suggested that life-course persistent offenders have greater versatility whereas adolescent limited offenders initiate offending later and are more

specialized. Both findings are consistent with the research discussed above which found that offenders with earlier onset ages are more versatile. Similarly, in their investigation Mazerolle et al. found that early onset offenders (life-course persistent offenders) had significantly more versatile offending patterns than did late onset offenders (adolescent limited offenders).

Gottfredson and Hirschi (1990) have also written on the relationship between age of onset and specialization and remain critical of Moffitt and other research reporting on that topic. Gottfredson's and Hirschi's assertion is that offenders tend not to specialize and offer some suggestions as to why. First, they suggest that individuals who commit crimes are exhibiting low self-control given an opportunity to commit and thus the cause of one type of crime is the same for another. Therefore, there exists no discrimination between types of offences. Further, Gottfredson and Hirschi argue that even the suggestion that offenders specialize is *prima facie* wrong because offenders are simply responding to an opportunity to commit, which is controlled only by their level of self-control. A final criticism of the specialization topic offered by these authors is that specialization labels could not be used for purposes of predicting future offending as the labels themselves are applied retroactively only after examining an offender's offence history.

In addition to examining the relationship between age and specialization, research has been conducted which examines the relationship between violence and specialization. Some of the research in this area ties frequency of offending to violent offending with the assumption that violent offenders are frequent offenders. A number of investigators have

found that violent offenders commit more crime than non-violent offenders. As Piquero (2000b) discovers in his review:

One of these findings is that violent offenders tend to commit more crimes than non-violent offenders (Cohen 1986; Loeber 1988:93; Loeber et al. 1998), a finding that has been uncovered in London (Farrington 1978, 1982), Copenhagen (Guttridge et al. 1983), Philadelphia (Piper 1985; Piquero 2000), Ohio (Miller, Dinitz, and Conrad 1982), Stockholm (Wikstrom 1985), Pittsburgh (Loeber et al. 1998), and Oregon (Capaldi and Patterson 1996) (p. 394).

This finding leads to the question, do violent offenders specialize in violence?

Based on the research however, the fact is while violent offenders may commit high levels of violent offences, they also commit high levels of non-violent offences (Brame, Mulvey & Piquero, 2000, in Piquero, 2000b). In most cases though, while those who have committed violent offences normally commit high levels of non-violent offences, violent offenders do not commit high levels of violent offences. As Austin, Clark, Hardyman and Henry (1999) report, few offenders who commit a violent offence will repeat that violent offence.

Offenders who commit violent offences commit high levels of crime. As it happens, in a retroactive analysis, one finds that one or more of those offences was violent. There also exists however, a large number of offenders who commit just as high levels of crime but do not become violent. How are they different? Farrington (1991) and later Capaldi and Patterson (1996, in Piquero, 2000b) found that both persistent violent offenders and persistent non-violent offenders are virtually identical in all risk factors leading to or predicting future offending.

In all the research reviewed, only two studies reported finding any specialization whatsoever. In his research Schwaner (2000) found that offenders do specialize in

violent crime however, the definition used in the study allowed for a mere two violent offences in order to classify the offender as violent. The other study found in the literature looked at specialization in general rather than specialization in violence. In their study of court careers in Canada, Carrington et al. (2005) used three charge categories and considered an offender specialized if all of their charges fell into only one of those categories. Based on that definition, Carrington et al. found that two-thirds of all offenders were specialized.

For the most part however, research has concluded that most offenders do not specialize in violence or in any other type of crime (Farrington, 1992, 2003; Gottfredson & Hirschi, 1986, 1988, 1990; Haapanen, 1990; Piquero, 2000b).

The topic of specialization then contains research that support specialization and versatility. The best conclusion one could come away with is that offenders exhibit some specialization amid a great deal of versatility as it seems the only consistency in the research is inconsistent findings (Piquero et al., 1999).

3.7 Criminal Lambda

In the area of criminal career research the idea of measuring an offender's frequency of offending emerged as the sub-topic criminal lambda. Over the years, a number of studies have been conducted to measure the frequency of offending as part of the attempt to better understand criminal careers (Canela-Cacho, Blumstein & Cohen, 1997). It is considered a benefit to have studies focused on frequency of offending as frequency relates to policy considerations and the effect of incapacitating offenders (Canela-Cacho et al., 1997).

Criminal lambda, or lambda, refers to the frequency of offending by an active offender, that is, the amount of crime an individual offender engages in (Blumstein et al., 1988a). Since lambda focuses on individual offenders, it is sometimes described as an individual crime rate, individual offending frequency, and other times as an individual's propensity to offend (Brame et al., 2003; Horney & Marshall, 1991; Blumstein, Cohen & Farrington, 1988a). Investigations into lambda have typically relied on official data of arrest records (Horney & Marshall, 1991).

Lambda is simply computed as the number of offences over time divided by the number of offenders over time to get an incidence rate attributable to the individual (Gottfredson & Hirschi, 1986). Lambda can provide both a measure of the average yearly incident rate or the average yearly individual arrest rate. Lambda was envisioned as an estimation of criminal involvement; how much crime can be attributed to one person (Gottfredson & Hirschi, 1986). As such, it has been used to estimate how much crime can be saved by incapacitating individual offenders (Gottfredson & Hirschi, 1986; Horney & Marshall, 1991).

Given that we now know about the age-crime curve, it follows that lambda is subject to the change in frequency of offending with age. For instance, as an offender moves through adolescence, lambda increase until around age 18 and then declines as the offender ages until such time as the offender desists from crime and the value for lambda becomes zero (Blumstein et al., 1988a; Bushway, Piquero, Broidy, Cauffman & Mazerolle, 2001). As Bushway et al. point out, the drop to zero for lambda at desistence is not spontaneous as desistence is a process that covers a number of years.

As lambda evidently changes with age, researchers have argued that in order to calculate changes in lambda over time, one can only consider the offences over some longer time span, such as the actual time an individual offender had the opportunity to offend; that is, the offender was on the street and not incapacitated in some form. The common method of doing this is to calculate 'free time' or 'time on the street' as the time period in which an offender has opportunity to offend (Horney & Marshall, 1991; Piquero et al., 2001, in Bushway et al., 2001).

There are arguments against the use of criminal lambda. While lambda is supposed to be an unbiased estimation of individual criminality, the reality is that it is a biased measure of repeat offences and repeat offenders who are more likely to be arrested more often than offenders that commit only occasionally (Bushway et al., 2001; Gottfredson & Hirschi, 1990; Haapanen, 1990). A second critique is that lambda relies on an offence being observed and recorded. Bushway et al. report that only twenty-two percent of all offences are actually observed. Those authors continue that an offender who has been observed to commit three times could actually have committed more or less often. Another interesting argument against lambda is that while official records may be accurate for estimating "prevalence, onset, desistance, and duration...[it is]...less adequate for estimating offending frequencies" (Farrington, 1992; p. 523).

There is also considerable debate about using lambda in public policy (Canela-Cacho et al., 1997). Canela-Cacho et al. argue that it is impossible to decide what group of offenders one should use to calculate lambda. In posing the question about what group to consider, those authors contend that research could not decide between offenders at

different ages, all offenders or even incarcerated offenders. Based on the literature there appears no consensus or conclusion supporting the use of lambda.

3.8 Desistence

The topic of desistence has a long history going back to the work on the effect of maturation on offending as part of the research of the Gluecks during the 1930s and 1940s (Laub & Sampson, 2003; Shover & Thompson, 1992). Even with such a long history, it is claimed that desistence is the least studied area surrounding the criminal career (Brame et al., 2003; Laub & Sampson, 2003).

The vast majority of offenders desist offending at some point. The research on desistence however, does not focus on desistence per se but rather it focuses on the failure to desist (Shover & Thompson, 1992). The failure to desist notion comes from the longitudinal research on criminal careers and the examination of offenders through adulthood in the attempt to understand when offenders generally desist.

Reviewing some of the definitions that have been applied to desistence is helpful to better understand the desistence research. Brame et al. (2003) defined desistence as "...a cessation of offending activity among those who have offended in the past" (p. 423). Similarly, Bushway et al. (2001) report that "[m]ost criminologists define desistence as the state of having "terminated" offending" (p. 491) or, "...any individual who previously offended at a higher rate but who now resembles the apparent nonoffender in terms of his or her rate of offending" (p. 505). Maruna (2001) suggests that desistence is a difficult phenomenon to study because desistence is not an event; it actually refers to the absence of something, the absence of offending (in Brame, Bushway & Paternoster, 2003; see

also Laub & Sampson, 2003). Kruttschnitt (1998) refers to a 'behavioural desistence' with two components; "a change from offending to nonoffending and...the arrival at a permanent state of nonoffending" (as cited in Bushway et al., 2001, p. 492). True desistence then is the termination of all offending.

Obviously, there is no consensus definition for desistence. Carrington et al.'s (2005) claims offer some reasons for differing definitions of desistence. Carrington et al. state that is not possible to determine desistence without tracking offenders until their death. The longitudinal studies conducted in the area of the criminal career have relied on follow-up periods to track desistence and in some cases have ceased collecting data on offenders at some adult age rather than follow offenders until their death. A true date of desistence can only be calculated for careers with a known date of termination and unfortunately researchers do not know actual dates of termination (Carrington et al., 2005).

Given that the true termination date is not known, some researchers have attempted to approximate a permanent end of an offender's offending while others construct desistence by considering temporary lulls in offending patterns over adulthood (Brame et al., 2003).

The fact is that the research on desistence must focus on some termination point in order to declare an offender a desister. Since the longitudinal research has not been able to follow offenders through to the end of offenders lives and have instead utilized follow-up periods, most research considers individual offenders as desistors if they have not offended during the adult follow-up periods (Bushway et al., 2001). These follow-up

periods commonly consist of some period of time during the years following adolescence or after some arbitrary cut off point (Brame et al., 2003).

Laub & Sampson (2003) question the use of follow-up periods for determining desistence. They contend that a lack of offending during a follow-up period it is not sufficient to determine false or genuine desistence. Genuine desistence only occurs if the offender truly does not offend again. Laub & Sampson pose the question if true desistence could be observed, what length of follow-up period would be needed?

As stated above, desistence research utilizes some arbitrary cut off point followed by a follow-up period to monitor desistence. With consideration of Sampson and Laub's question, the following follow-up period lengths as described in the literature are provided. Brame et al. (2003) found that most studies in the literature used follow-up periods ranging from one year to eleven years. For example, the Canadian study on court careers utilized a three year follow-up period (Carrington et al., 2005). Sampson and Laub (2003) reported that Farrington (1986) suggests however, that lack of offending during a five year or ten year follow-up period is no guarantee of the end of offending. Further, Barnett, Blumstein and Farrington (1989) actually found some offenders who had stopped offending and then started again years later (see also Laub & Sampson, 2003). If anything can be said in support of follow-up periods it is that longer follow-up periods would make for better study of desistence (Brame et al., 2003). As it stands, any observed desistence in a follow-up period can only be regarded as temporary desistence (Bushway et al., 2001) and until subjects actually die, researchers cannot be certain of desistence (Farrington, 1992).

Aside from the discussion on follow-up periods and desistance, some researchers have argued that the assumptions on which desistance is based are inaccurate. First, if investigators observe desistance during a follow-up period, they assume the offender has changed their behaviour, a misconception known as false desistance (Brame et al., 2003). Brame et al. and Bushway et al. (2001) argue that the absence of offending during a follow-up period does not mean that the offender's propensity to commit has changed. Second, research simply observing desistance in a follow-up period fails to link the factors causing that desistance to the longer process of desistance which occurs over years (Brame et al., 2003).

A number of researchers recognize that desistance is not a spontaneous event. A body of research exists which suggest that desistance is a process that takes place over time (Fagan, 1989; Laub et al., 1998; Weitekamp & Kerner, 1994; all in Brame et al., 2003; Laub & Sampson, 2003). During this process, offenders are affected by changes in their life circumstances and their offending declines until termination is reached (Brame, Bushway and Paternoster, 2003; Laub & Sampson, 2003; Piquero et al., 2002). Bushway et al. (2001) define the desistance process as "...the process by which criminality, defined as the propensity to offend, changes with age" (p. 494).

A number of life circumstances have been offered as reasons for desistance. Among them maturation certainly gets top billing. In addition to maturation, the following reasons have been used in explanations of desistance. Human development, rational choice, social learning, changing attitudes (Laub & Sampson, 2003), age related burnout (Hoffman & Beck, 1984, in Laub & Sampson, 2003), the notion that managing crime is burdensome (Shover & Thompson, 1992), incarceration and fear of doing time is

more acute with older offenders (Laub & Sampson, 2003; Shover & Thompson, 1992), non-criminal lifestyles become more attractive than criminal lifestyles (Shover & Thompson, 1992), and the idea that offenders begin to consider their own mortality as they age (Farrington, 2003; Laub & Sampson, 2003; Sampson & Laub, 2003).

The idea that maturation could be an explanation of desistence was first advanced by the Gluecks some sixty years ago. In their examination of maturation, the Gluecks found that maturing, or aging, brought about physical and mental changes (in Laub & Sampson, 2003). Authors writing in the maturation area contend that it is not age alone that causes desistence but the life events and experiences of maturation that influence offenders such as marriage, attachment to spouse, employment and biological aging (Laub & Sampson, 2003).

It is important to note that not only adults mature out of crime. Remembering Moffitt's adolescent limited offender group, maturation can also be associated with adolescents (Blumstein et al., 1988a). The point is whether adult or adolescent, the vast majority of offenders age out of crime (Johnson et al., 2004; Sampson & Laub, 2003; Shover & Thompson, 1992).

Theorists have offered three developmental accounts to explain the reduction of offending with age. The first account suggests that changes in personal identity associated with maturing leads to a reduction or cessation of offending (see Gartner & Piliavin, 1988; Giordano, Cernkovich & Rudolph, 2002; Maruna, 2001; Shover, 1996, all in Laub & Sampson, 2003). The second developmental account declares that explanations of desistence should incorporate "biological, psychological, and sociological variables" (Gove, 1985, as cited in Laub & Sampson, 2003, p. 29). The third

developmental account is the most influential and comes from Moffitt (1993). Pertaining to Moffitt's adolescent limited and life-course persistent offender groups, individuals' development is also believed to influence desistance. Moffitt suggests that life course persistent offenders never desist and adolescent limited offenders exhibit antisocial, criminal behaviour only during adolescences.

Criminological theories have also been applied in the attempt to explain desistance. Using rational choice theory, theorists have considered offenders as reasoning decision makers who, through some decision process, weigh the costs and benefits of offending and then make a decision to continue offending or stop offending (Laub & Sampson, 2003).

Social learning theory has also been applied to the desistance topic. Theorists suggest that factors contributing to desistance are the same factors that contribute to onset (Brame et al., 2003; Laub & Sampson, 2003).

Mentioned previously in this chapter, Gottfredson and Hirschi (1990) argue that since other theorists suggest that the factors explaining desistance and onset are the same, it follows that those theorists cannot explain desistance or onset. Gottfredson and Hirschi suggest that levels of self-control determines whether an individual offends or does not offend. Additionally, Gottfredson and Hirschi state that level of self-control can explain desistance.

It is evident that the research conducted on desistance over the past decades is inconclusive in explaining why offenders cease offending. As such there is no clear consensus on the causes or correlates of desistance (Laub & Sampson, 2003).

In reviewing the literature on criminal career research it is obvious that the most important topics are onset, specialization, lambda, and selective incapacitation. Very few studies in the literature identify length of criminal career as a separate topic within the body of research. While the numbers are small, since some studies do identify length of career as important, a comment is inserted here. The literature reveals that with regard to the length of the criminal career, the topic is not actually discussed as a separate topic unto itself but rather is simply a period of time calculated within the discussion of onset and desistence. It is likely that this is the case because without onset (a beginning) and desistence (a purported end), length cannot be calculated nor discussed.

3.9 Definitions of Persistence

In reading the above information, it is apparent that many issues are included in the literature on the criminal career. The research in some of those topic areas however, is inconclusive or contradictory, thus denying the field any possibility of reaching reliable conclusions on more than a couple of topics. Armed with the knowledge of the history of criminal career research, the beginning step for any future research examining the criminal career and persistent offenders is the task of defining the term persistence.

The current section of this chapter will discuss the issues one must consider in the process of creating a definition of persistence. This section will also outline the difficulties involved in carrying out that task. Some definitions of persistence as they have been used in past research as well as in legal statutes are identified. This section also discusses the benefits and shortcomings of some of those definitions.

Probably the first question any researcher must ask is what differentiates a persistent offender from a non-persistent offender? Indeed, all the past research has asked this very question. An explanation that has been offered by researchers suggests that both persistent and non-persistent offenders have the same criminogenic needs (Home Office, 2004a). Sampson and Laub (2003) suggest that persistent offenders may have greater levels of those needs and, their lives may be chaotic in a number of different characteristics. Others posit that while the criminogenic factors are the same for persistent and non-persistent offenders, individuals in one group offend more because they perceive their environment differently (Topalli, 2005). Recall however, that causation is assumed by criminal career researchers and thus there is not a great deal of focus on it.

Defining persistence is difficult also because there are so many issues to consider. Part of conceptualizing any definition must include deciding on a data source and then determining whether the data within that source is usable for the intended purpose(s). For example, if a researcher has access to arrest data, the definition used will be based on arrests. Likewise, if conviction data is the source, the definition of persistence will be based on number of convictions. Persistence will ultimately be based on a high incidence of something. Determining what exactly that something is has been considered in past research. Ultimately, the question becomes, what should be counted (Laub & Sampson, 2003)? In determining persistence, should the definition consider the number of police contacts, the number of offences, the number of arrests, or the number of convictions (Laub & Sampson, 2003; Sampson & Laub, 2003; Rodriguez, 2003)? Laub and Sampson and Sampson & Laub have suggested that perhaps both arrests and convictions should be

considered together. Information has also been collected through offender self-reporting (Farrington, 1992).

Another question to consider is whether some time period be considered and if so, how long should that period be (Laub & Sampson, 2003; Sampson & Laub, 2003). The concept of constraining observed criminal activity to some time period is referred to as 'bounded time'. If bounded time is used in creating the definition, other events that occur during that time come into play and result in more questions. Such questions relate to the possibility of offending or opportunity to offend during that period. Say for example, a study used a bounded time of three years, if the offender was incarcerated for six months. Should the time in prison be considered in the definition or should those six months be added to the end of the bounded time period (Horney & Marshall, 1991; Laub & Sampson, 2003; Sampson & Laub, 2003)? Finally, another uncertainty is whether geographic area should be considered in the definition (Home Office, 2004b). Under a persistent offender definition, an offender may be persistent in one area but not in another. Perhaps an offender lives in one area and crosses a geographic or civic boundary on the journey to offend. Thus, all the offences would be in the second geographic area and the offender would not be considered or defined as persistent in area two if only data on area one were considered.

As with most areas in criminal career research, much criticism has been aimed at the use of arrest, conviction or court data. First, the problems with using arrest data are based on two assumptions (Brame et al., 2003). The first assumption is that the arrest rate for an individual is constant over time and the second assumption is that the occurrence of events (arrests) is purely random. Brame et al. argue however, that arrests

cannot be random because offenders, especially high-rate offenders, are more likely to re-offend, engage in more crime and be familiar to the police. Also, persistent offenders commit more crime and have a greater likelihood of being arrested (Canela-Cacho et al., 1997). Arrest data therefore, is plagued with sample bias for two basic reasons. First, because they offend more often, persistent offenders are more likely to appear in the sample and second, since the sample is more likely to contain persistent offenders, it is unlikely to be representative of the total offender population (Canela-Cacho et al., 1997).

Another argument against using arrest data is that arrest data depicts only police records and not court records (Carrington et al., 2005). Since many more people are subject to police contact than court contact, the arrest data negatively affects the findings on persistence (Carrington et al., 2005). Conviction data however, would also underestimate the true number of offences since not all offenders arrested by the police find themselves in court and fewer yet would find themselves convicted of the offence for which they were arrested (Farrington, 1992). A good example of this argument exists in a study presented in an article by Barnett et al. (1989). In this study, the investigators defined two groups of offenders, frequent offenders and occasional offenders. The findings revealed that frequent offenders committed crimes at a higher rate than occasional offenders but the number of convictions in relation to the number of offences was low.

The final critique of data sources comes from Farrington (1992). He suggests that while the use of criminal record data in official records may be accurate for estimating prevalence, onset, duration and desistence, it does not give a good picture of the overall state of offending. Farrington argues that the reason criminal records do not provide a

sense of crime overall is because the criminal record can often include, and therefore over-represent, the most serious offences. In sum, a definition of persistence should probably be constructed based on the analysis of data from a variety of sources (Mazerolle et al., 2000).

When one considers the multitude of definitions which have been used to determine if an individual was a persistent offender, it does not take much imagination to conclude that two different definitions applied to the same data source could yield two different samples (Brame et al., 2003). The literature on persistence reveals a similar theme between some definitions and complete difference between other definitions. Some of the studies specifically state how an offender was deemed persistent, yet a good number of studies provide no information on how offenders were defined as persistent (Gomez-Smith & Piquero, 2005).

Definitions used in various studies adhere to strict guidelines for including offenders while other studies use minimal parameters such as including as persistent, offenders with only one or two prior arrests (Berg & DeLisi, 2005). The most commonly used definition of persistence is that proposed by Moffitt (1993). Moffitt's adolescent limited and life-course persistent groups have been tested in a number of studies. More specifically, when considering any individual persistent, many researchers consider whether an individual is a life-course persistor, having been involved in criminal activity both before and after age 18 (Eggleston & Laub, 2002).

In the groundbreaking Philadelphia birth cohort study, Wolfgang et al. (1972) considered youths who offended five or more times to be persistent offenders. In the years that have followed Wolfgang et al.'s initial publication on the Philadelphia birth

cohort data, criminal career researchers have applied numerous definitions of persistence. In those studies the definitions included the various labels used to describe persistent offenders such as chronic offenders, career criminals, habitual offenders and life-course persistent offenders. For consistency purposes, the term persistent offender replaces the actual labels used by the author(s) which are synonymous.

3.9.1 Definitions in research: the 1970s

Wolfgang, Figlio and Sellin (1972) as described above; five or more offences.

3.9.2 Definitions in research: the 1980s

Blumstein and Cohen (1987) analyzed data on arrest records for individuals arrested in Washington, D.C. and the Detroit Standard Metropolitan Statistical Area to determine the characteristics of career criminals. While not defining persistence per se, there is evidence in this article that Blumstein and Cohen examined the arrest patterns of a group consistent with Moffitt's (1993) definition of life-course persistent offenders. Blumstein's and Cohen's (1987) article may be useful for future researchers to review before undertaking the task of exploring arrest data for the best possible definition of persistent offenders.

3.9.3 Definitions in research: the 1990s

In their 1999 analysis of the Philadelphia birth cohort data investigating offence specialization, Piquero et al. remark that "specialization is only germane for those [individuals] who offend more than once..." (p. 282). In this study, the authors define persistent offenders as offenders with two or more police contacts during an eight year follow-up period.

As has been mentioned previously in this chapter, Moffitt (1993) defined two groups of offenders. The first group, adolescent limited offenders, cease offending by late adolescence and do not offend as adults. In contrast, the second group, life-course persistent offenders, offend as juveniles and again as adults. This definition of persistence, which has been tested repeatedly, may be held as the benchmark definition of long-term persistence across the life-course.

While Horney and Marshall (1991) were measuring lambda in their investigation of intra-offender variability in crime, they were compelled to compare differences in low-rate and high-rate offenders. In this study, Horney and Marshall define individuals with ten or more targeted crime offences during a three year reference period as high-rate (persistent) offenders.

In his longitudinal research focusing on selective incapacitation and serious offenders, Haapanen (1990) suggests that a persistent offender is someone with both a record of juvenile crime and evidence of offending as adults. This definition is consistent with Moffitt's (1993) life-course persistent offender group.

3.9.4 Definitions in research: the 2000s

Berg and DeLisi (2005) considered any individual at or above the ninetieth percentile for total arrests to be a persistent offender. This definition seems to be loosely based on Moffitt's (1993) arbitrary claim that ten percent of all offenders are persistent offenders.

In their longitudinal examination of court careers in Canada, Carrington et al. (2005) defined persistent court offenders as those individuals having court incidents as

both juveniles and adults. These authors actually discern between two levels of persistence, repeat offenders and chronic offenders. Carrington et al. defined repeat offenders as those who had two to four convictions in their court careers and defined chronic offenders as those individuals who had five or more convictions in their court careers.

In a Home Office (2004a) report describing a joint inspection into prolific and persistent offenders, the definition of persistence is quite unique. In this report, a persistent offender (in this case, a *core* persistent offender) is defined as an individual eighteen years of age or older who had been convicted of six or more recordable offences in the prior twelve months. Thus, this definition relies on frequency of arrests after a certain age.

The above joint inspection report used a separate definition to define persistent young offenders. Persistent young offenders were defined as "...young persons who had been dealt with by the courts on three or more occasions, and commit another offence within three years of last appearing before a court" (Youth Justice Board, 2000 as cited in Home Office, 2004a). This definition uses more complex criteria and includes a finite time period.

In a second report published by the Home Office (2004b), the authors describe the transition in the United Kingdom from the national Persistent Offender Scheme to the more localized Priority Offender Strategy. Under the Persistent Offender Scheme, local areas are enabled to determine "which offenders are causing the most harm to their communities" (Home Office, 2004b, p. 6). Since communities were not provided with a national definition of a priority offender, each community was free to develop its own

definition. Those communities however, were guided by three general criteria: to consider the nature and volume the offender's crimes, the nature and volume of other harm caused by the offender, and any "other local criteria, based on the impact of the individuals concerned on their local communities" (Home Office, 2004b, p. 6).

Rodriguez (2003), in her article on the impact of state strike laws, reports that the State of Washington defines a persistent offender as "...one who prior to the commission of the present most serious offence, had been convicted on at least two prior occasions of most serious offences" (p. 109).

Ge, Donnellan and Wenk (2001) studied life-course persistent offenders with consideration of Moffitt's life-course persistent group by comparing frequencies of arrests across different age groups; 18 to 20 years, 21 to 25 years, 26 to 30 years, and 31 years or older.

In a study on criminal careers, Piquero (2000b) considered the number of police contacts an offender had by the time the offender was eighteen years of age. Piquero considered a persistent offender to be an individual with three or more police contacts by that age.

The above definitions reveal some themes and similarities in the definitions of persistence. Such a finding validates Gottfredson's and Hirschi's (1986) claim that "[d]espite persistent interest in career criminals dating back 100 years, little improvement in the definition can be observed" (p. 215).

To this point the current section of this chapter has focused on the definition of persistent offender and how the definitions have been applied in the research on

persistence and criminal careers. There is a second forum for a definition of persistence however, law and the courts. The next section of this chapter discusses how persistence has been defined in statute in the United States.

3.9.5 Definitions in statute: the habitual offender

As definitions of persistence have been constructed for research purposes, they have also been constructed in statute as part of the selective incapacitation response. Definitions of persistence in statute are written with a solitary purpose; to determine the certainty of receiving a sentence as well as the sentence length for the guilty offender. In many cases, sentences and sentence length are already prescribed and the application of a 'habitual offender' definition, or clause, is viewed more of a sentence enhancement (Rodriguez, 2003).

Sentencing enhancements have been enacted in many states with support for harsher penalties for crime (Rodriguez, 2003). These habitual offender statutes are widely known as Three Strikes, or strike legislation. The strike legislation movement began with a 1993 initiative in Washington state and shortly thereafter appeared in California following the highly publicized kidnapping and murder of twelve year old Polly Klass (Austin et al., 1999). By 1997, twenty-four other states and the federal government had enacted some sort of strike law (Austin et al., 1999).

As presented earlier in this chapter, there are differences in the definitions of persistence that are used in research. Similarly, there are differences in the American habitual offender laws, when those definitions are compared across the states and the U.S. federal government. While the habitual offender and strike laws do indicate a

central theme (punishment), the fact is the definition of habitual and the number of strikes that are considered have been defined differently in every state having strike laws (Rodriguez, 2003; Austin et al., 1999). The major differences are the criteria determining what offenders are deemed habitual, the length of sentence for offenders deemed habitual, and whether the sentence includes the possibility for parole (Austin et al., 1999).

Regarding what crimes are strikes, some states identify specific offences as counting as a strike offence while others state it could be any offence that included the use of a weapon while yet others classify felony offences into class one, class two and class three for example. There is variation also in the number of strikes needed to 'strike out'. In most states, offenders strike out after having two or three 'strike' offences while in few states, four strikes are needed before striking out. There are slight variations in the consequences of striking out among the fifty states. For instance, in California, depending on the type of crime that caused the strikeout, the consequence can be either a mandatory sentence of twice that normally given for a sentence term or, mandatory indeterminate sentence with no parole eligibility for 25 years. Across all states, the most common consequence of a strikeout is a life sentence with no parole eligibility (Austin et al., 1999). In their study published in 1999, Austin et al. report that the number of offenders sentenced under some strike law varied greatly across states with one state having sentenced only one offender and another state having sentenced 42,322 offenders under their respective strike laws.

Opponents of the three-strikes laws have declared that the strike movement was largely symbolic because the new strike laws targeted a population of offender already covered by existing law (Austin et al., 1999). The exception to this claim was California

where the intent of that state's three strike legislation was to ensure longer prison sentences and therefore, greater punishment (Austin et al., 1999). California actually expanded the strike zone so that any felony could be considered a strike, thus making it the most severe strike law in any state (Austin et al., 1999). In addition, California added a sentence for two-strike offenders (Austin et al., 1999).

The three strikes law in California was supposed to have a profound effect on the state's criminal justice system with the courts and the California Department of Corrections (CDC) affected the most. When three strikes legislation was passed in California, the CDC projected that the impact would result in an increased inmate population for their agency. At that time, CDC had 115,000 offenders in its institutions and projected that in four years the agency would have to house 245,000 offenders; 80,000 of which would be new second or third strikers (Austin et al., 1999). As it turns out, the CDC and other agencies grossly over-estimated the effect of Three-Strikes on CDC. The reader should note that on July 1, 2005 the CDC was merged with the CYA to form a new department, the California Department of Corrections and Rehabilitation (CDCR). As of December, 2006, CDCR's inmate count was just over 172,000 offenders (CDCR, 2007). In addition to over-projecting new inmates, another reason for the lower actual number of offenders under three strikes was that California's courts found provisions in the law enabling them to circumvent using it in every possible instance (Austin et al., 1999).

With regard to sentencing persistent offenders and creating definitions of persistence for that purpose, both legal and extra-legal factors have been considered (Rodriguez, 2003). Legal factors include such items as offence type, offence severity,

number of arrests and number of convictions. These factors make it clear that criminal history plays a major role in sentence determination (Rodriguez, 2003). In the habitual offender statutes and strike laws in the United States, criminal record and offence seriousness stand out as the most important factors to consider in conviction and sentencing (Rodriguez, 2003).

The extra-legal factors are not afforded the weight of legal factors as they pertain more to the characteristics of the offender than to the characteristics of the crime. Extra-legal factors include race, sex, age, socioeconomic status, etceteras (Rodriguez, 2003).

Gottfredson and Hirschi (1988) state that when considering the prediction of offending and incapacitation of the offender, courts should not focus on extra-legal factors like those listed above. Those authors suggest that more attention should be paid to prior record as an adult and as a juvenile.

Despite the large number of definitions applied to the persistent offender, relatively little is known about those offenders (Laub & Sampson, 2003). Perhaps the sheer number of definitions, seen as attempts to better understand persistence, is evidence of how little is known. Greenwood (1982, in Austin et al., 1999) suggests that persistent offenders cannot be accurately identified. This notion may help explain the fact that courts have not been able to identify persistent offenders without punishing false positives; offenders with prior records of offending that would never continue to offend (adolescent limited offenders for example) (Austin et al., 1999). The possibility of false positives serves as a problem for predicting persistence as well.

It has been argued that many definitions of persistence are based on arbitrary decisions of their creator(s) (Laub & Sampson, 2003). Other definitions, such as

Moffitt's (1993) life-course persistent offender, seem rational and are commonly used yet, subjected to varying criticisms. As a result of reading many definitions of persistence, perhaps one comes to the realization that the definitions used in the research may seem arbitrary because they have been incorrectly construed as offerings of global definitions of persistence. Perhaps they were not meant to apply outside of the study in which they were defined. Either way, whether future studies define persistence for use in a single study or whether they attempt to construct a more limited multi-jurisdictional definition, the task of defining persistence may come down to selecting the best assumptions for developing a useful definition relative to the respective study.

3.10 Selective Incapacitation

In the last two decades much research has been published on high-rate offenders and selective incapacitation (Laub & Sampson, 2003). Selective incapacitation is the end of the proverbial criminal justice road for the persistent offender. All the research conducted on topics preceding this one merely lead up to it as some argue, the purpose of understanding criminal careers is so that you can do something about them (Gottfredson & Hirschi, 1986). The research on persistence is the attempt to understand criminal careers; selective incapacitation is intended to be the attempt to 'do something about them'.

The current focus in the criminal career paradigm is to develop strategies targeting persistent offenders (Roberts, 2002). Those strategies include focusing resources on the small number of persistent offenders that account for a large proportion of crime. Crime reduction strategies aimed at repeat offenders are widely accepted by

criminal justice agencies and the public (Home Office, 2004a). But again, those strategies ultimately lead to the practice of selective incapacitation.

The literature on criminal careers does not contain information on programs and strategies which target persistent offenders. As such, the field makes an assumption that those strategies are in place, or will be in place, and will result in the apprehension of persistent offenders. Criminal career research therefore, makes a leap from the attempt to understand career criminals to punishing them without regard for intervention.

The research on criminal careers indeed fuelled the idea of selective incapacitation (Gottfredson & Hirschi, 1986). There are three reasons offered to elicit support for selective incapacitation. First, an incapacitated offender is an offender that has been taken off the street and is therefore, prevented from offending, at least while incapacitated (Gottfredson & Hirschi, 1990). By selectively incapacitating persistent offenders, society maximizes the crime reduction benefit by removing an offender who engages in more crime (Blumstein & Cohen, 1987). Second, incapacitation of the persistent offender provides opportunity for the possibility of rehabilitation (Gottfredson & Hirschi, 1990; Roberts, 2002). The third reason to incapacitate the persistent offender relates directly to punishment and retribution (Roberts, 2002). The opportunity to punish the persistent offender is consistent with the model of just deserts.

Over the past decades there has been little effort by police to target the versatile persistent offender because such an effort is resource intensive (Home Office, 2004a). With greater appreciation for the amount of harm caused by such a small percentage of offenders, the efforts associated with incapacitating persistent offenders (arresting,

convicting, and rehabilitating) are now thought to be efficient uses of criminal justice system resources (Home Office, 2004a).

In the literature on criminal careers, when selective incapacitation is discussed, it is obvious the incapacitation referred to is incarceration. In the United States, discussion of the use of persistent offender definitions and incarceration is centered around sentence length or sentence severity. In other countries, it seems the discussion tends to be on whether or not a conviction even leads to incarceration. In a discussion of this sort, the issue is sentence certainty. It is unlikely that any jurisdiction can discuss sentence severity without first discussing, and more importantly, resolving sentence certainty.

Jurisdictions in the United States consider both sentence certainty and sentence severity. Some U.S. jurisdictions have incorporated legal definitions in order to make sentencing more likely. For instance, the preceding section identified various states with strike laws indicating that if an offender is considered habitual, sentencing is a certainty. In considering sentence severity, different states and the federal government have sentencing guidelines that consider both criminal history and seriousness of offence (Roberts, 2002). Some jurisdictions emphasize prior record and other jurisdictions emphasize seriousness.

As discussed in the previous section, persistent offenders are targeted as needing more severe sentences in order to punish and reduce their risk of re-offending. As of 1998, 50 of the 52 sentencing entities in the United States had some sort of sentencing guideline targeting repeat offenders; only the states of Maine and New Hampshire did not (U.S. Department of Justice, 2006).

Selective incapacitation does not necessarily require long prison terms as short terms have been found to be just as successful (Blumstein et al., 1988a). That statement may not truly mean however, that short prison terms are as effective; but rather, that longer prison terms are no more effective than shorter ones. Case in point, Haapanen (1990) reports that extra prison time does not mean reduced offending after release.

Some studies investigating incarceration have reported findings in contrast to beliefs consistent with deterrence theory. Deterrence theory holds that a supposed punishment will deter an offender from committing or, if an offender is punished, their rate of offending will decline post-punishment (upon release). Recent studies have in fact found the opposite. Pogarsky & Piquero (2003) found that offenders who had received more punishment actually committed more crime after the punishment. Pogarsky & Piquero suggest that punished offenders are playing the odds; the offender believes there is a lower certainty of being punished again. The authors liken this behaviour to the 'gambler's fallacy' in which, similar to a gambler raising his bet after successive losses, the offender increases the rate of offending after an apprehension.

There are some criticisms of the use of selective incapacitation. Gottfredson and Hirschi (1986) argue that if it takes time to build a criminal record and the number of offences declines with age, it may be improper to incapacitate an offender on current offences when the worst is already behind them. Gottfredson & Hirschi contend that for incapacitation to have its greatest effect of preventing crime, the focus should be on the ages prior to the peak of crime rather than after the peak of crime. Further, these authors suggest that selective incapacitation is only effective as crime prevention if the criminal justice system is able to incapacitate offenders before they commit.

Other authors have also criticized selective incarceration. Haapanen (1990) argues that there are two broad assumptions that must be true for selective incapacitation to be successful. First, incapacitated offenders would offend if they were free. As such, the effectiveness of selective incapacitation relies on the assumption that criminal careers would continue if offenders were not locked up. This assumption also relies on the notion that offence patterns are stable over time and that they are not sporadic over time. Second, the crimes prevented by incarcerating offenders would not be committed by other offenders.

In Great Britain, crime reduction programs have been implemented but as yet little research has been conducted on the outcomes of intensive interventions for persistent offenders (Home Office, 2004a). The findings that have been reported however, show promise for crime reduction as they provide evidence that intensive interventions do in fact have a positive effect on crime reduction (Home Office, 2004a).

Selective incapacitation is practiced in countries around the globe and the practice has had its share of critics and doubters. Findings like those from recent studies in Great Britain however, will only strengthen the practice of targeting and selectively incapacitating the persistent offender.

3.11 Summary

A large amount of research has been conducted in the area of the criminal career and the persistent offender. While the earliest research discussing the persistent offender originated over one hundred years ago, the research into the criminal career was fairly

limited in terms of the number of completed studies even in the 1980s. In fact, Blumstein and Cohen (1987) refer to the field as 'embryonic' as late as 1987.

Recognizing the need to target the small population of offenders who are committing a majority of the offences, in the past ten to fifteen years, researchers and criminal justice professionals have attempted to better understand persistence with the goal of identifying individual persistent offenders. The response to this need has been a considerable amount of research coming out of Canada, Great Britain and the United States.

One reason the justice system has recently targeted persistent offenders is that many jurisdictions are developing broad based commitments to reducing crime rates. A second reason is that the system has a finite amount of resources available to combat crime. Arguably, by focusing resources on persistent offenders, the criminal justice system uses its limited resources more effectively by removing the offenders responsible for most of the crime. As the front line of the criminal justice system, if police agencies, and later the courts, can identify offenders who offend persistently, they could identify the individuals that need to be targeted. More and more, the criminal justice system is relying on previous and new research to guide the system and enable the police and courts to make evidence-based, or at the very least, information-led decisions. Literature on the body of research that exists presently indicates a number of themes. Many of the findings from previous studies however, contradict each other and prevent a consensus understanding of the persistent offender.

Without question, the most consistent finding to come out of the research on the criminal career is that of the age-crime curve. Time and time again, studies have reported

that offending generally begins in early adolescence, peaks in late adolescence and then declines with age into adulthood.

Many of the other research findings on the criminal career are dependent on the study's definition of persistence. Indeed, numerous definitions are encountered in the body of research on criminal careers. Each different definition however, leads to different rates of prevalence, different offending patterns and even the identification of a different group of offenders on which any study is based. It is a reality that the application of two or more different definitions of persistence leads to the identification of different samples of offenders from the same data source (Brame et al., 2003).

The research reviewed for this chapter indicates that there are a variety of indicators that can or should be considered in developing definitions of the persistent offender. The most important consideration is to include the most suitable indicators and assumptions for the respective jurisdiction (Brame et al., 2003; Sampson & Laub, 2003).

In developing a new definition for persistent offender in any jurisdiction then, one must consider the characteristics, processes and realities of the criminal justice system in that jurisdiction. These considerations should lead to an understanding of what are the best indicators for persistence in that jurisdiction.

CHAPTER 4: METHODOLOGY

4.1 The Data

This study examines definitions of persistence and other topics within the literature on persistence through the application of those definitions to data on individuals committed to and released by the California Youth Authority (CYA). Individuals were included if their first release from CYA was on any date in the 11 years from January 1, 1988 through December 31, 1998. The CYA administrative data on those individuals identified was matched to the arrest data obtained from the California Department of Justice (DOJ). Arrest data were examined from the date of first reported arrest through December 2003 to allow for at least a five-year follow-up of all individuals released in 1998. No control was made for the time individuals were incarcerated during the follow-up periods. All arrest types are included except traffic violations or parole warrants.

The DOJ data provides information on the arrest of all individuals 18 and older however, since the DOJ does not require law enforcement agencies to submit juvenile arrest records, not all juvenile records included in the data are assumed complete. The DOJ data includes arrests made in California as well as arrests in the neighbouring states Arizona, Oregon and Nevada with which California maintains mutual agreements for sharing information. No information on arrests in other states was gathered.

Between 1988 and 1998, a total of 30,628 youths were released for the first time from CYA facilities. Arrest records were found for most cases. In the cases where no

corresponding data was found, it is likely that some individuals with no arrest record on file with the DOJ had died or had arrest records in other states. Additionally, some offenders with arrest records were excluded from the analysis for the following reasons. First, some offenders were sentenced to the California adult correctional system but housed in CYA facilities and as such, are not CYA clients. Second, some offenders were not assigned identification numbers at admission and therefore, matching arrest data was not possible. Third, a few offenders died following their release from CYA or while on parole. Fourth, some offenders were paroled to out of state entities. Finally, because 97% of the population in CYA facilities is male, this analysis is restricted to male offenders.

With the above exclusions, 24,732 offenders remained. Due to the fact that the DOJ does not require the reporting of juvenile arrests the data could provide only post-incarceration arrest data on 7,047 of the 24,732 youth. As such, those 7,047 are considered to have missing data and are eliminated from the analysis. In order to accommodate the testing of the common topics within criminal career literature, including definitions of persistence, the analyses in this study required information on both pre- and post-incarceration arrest data. The usable population therefore, includes only youth having both pre- and post-incarceration arrest charge information. The final usable dataset on the population consisted of 17,685 youth. All analyses were conducted using SAS software, version 9.0. Table 4.1 reports the number of juveniles in the final sample by year of release.

Table 4.1: Count of youth by year of release.

Year of Release	Count
Total	17,685
1998	1,458
1997	1,717
1996	1,587
1995	1,483
1994	1,621
1993	1,821
1992	1,676
1991	1,645
1990	1,725
1989	1,664
1988	1,228

By including only youth for which the arrest data included information on arrests prior to incarceration as well as after first release, this study was able to examine not only the persistence issues within the literature but also seven definitions of persistence requiring pre-incarceration and post-incarceration data. Using data on post-release arrest information only would have reduced the number of definitions that could have been tested and, more importantly, eliminated the opportunity to test the definitions developed by Wolfgang et al. (1972), Haapanen (1990), Moffit (1993), and Piquero (2000b).

The following sections identify the analyses of the issues in persistence research enabled by the data followed by sections on the examination of definitions from the literature that were examined, and prolific offenders.

4.2 Persistence Issues

The literature on persistence and criminal careers includes a number of topics that have attracted the attention of researchers. The most important, or at least, most commonly investigated topics, in the research are onset, the age-crime curve, and career

length. All three topics are included in this study with the findings presented in the respective sections of the next chapter.

4.2.1 Onset

Investigators examining the issue of onset are concerned with the age at which an offender first commits an offence. In the research of onset, two types of onset are considered. Most commonly, age of onset refers to the age at which the offender was first arrested. The second type considers age of onset as the age at which offenders actually committed their first offence. In some cases, the two definitions find onset at the same age however, researchers proceeding with the second definition strive to determine true onset age of offending. With regard to whether the offence was reported or not, the second type would not be tied to an arrest but rather an act that may have gone unreported and therefore, did not result in an arrest. In the next chapter, the section on onset identifies the onset ages of first reported arrest for the youth in the dataset as well as (onset) age at first admission to CYA.

4.2.2 Age-crime curve

A commonly investigated issue within the criminal career research is that of determining the age-crime curve of a population of offenders. The age-crime curve simply shows the number of offences, or similar type of data such as arrests, committed by youth across ages and normally in a graphical format, thus the 'curve' portion of the topic name.

A number of studies have found that offending begins in early adolescence, peaks in late adolescence, and drops off into adulthood. Interest in the age-crime curve topic

has become widespread due to results of examinations with consistent findings. In fact, the consistency with which research results indicate that age and crime are related has caused researchers to suggest that the age-crime topic is the most important finding to come out of criminal career research. Given its importance as a topic then, the present study includes an examination of the relationship between age and crime. The age-crime curve representing the offence (arrest charge) pattern for youth in the dataset is provided in the next chapter.

Similar to onset age of first offence, onset age of first incarceration, or age at first admission to CYA for the purposes of this study, is examined and findings are provided in the next chapter as well. These findings on age of first admission are presented in the section, Age at First Admission, rather than in the section on onset.

4.2.3 Career length and desistence

For those who study the onset and persistence, or continuance of offending, it seems natural to develop a need to understand the end, or desistence, of offending. This fosters the notion that if one knows the onset of offending and the desistence from offending, one can know career length simply by finding the time difference between the two. The study of career length and desistence is often criticized however, from the position that desistence is rarely assured and therefore the end point is not actually known. Based on that assertion, it is argued that because an offender does not offend for some amount of time, the offender cannot be assumed to have desisted from offending. It is further argued that true desistence is unknowable until an offender's death. Only at this point can desistence be certain. Nonetheless, in the next chapter, this study includes

an examination of desistence and career length for the offenders. Of course this examination can only conclude length between first and last reported arrest charges.

4.2.4 Specialization and versatility

The specialization topic has received much attention in criminal career research. In the study of whether offenders tend to specialize in types of offences, researchers have used categories of crimes rather than individual crimes to examine the committal of differing types of crime. The logic behind this is that it would be difficult to find an offender that commits only robbery as opposed to robbery and theft in order to conclude that offender specializes in robbery, but, would be more likely to find an offender that 'specializes' in violent crimes as opposed to non-violent crimes. The prior research reveals no consensus on what categories should be used however. Sampson and Laub (2003) used four categories, violent crime, property crime, alcohol or drug related crime, and all other, while Piquero (1999) used the three categories, crime against persons, property crime, and all other crime.

The use of categories may seem too simple however, as the use of only four categories does not differentiate enough within categories to determine if an offender is truly versatile. The use of categories may in fact provide too simple a method for determining specialization. Offenders with small number of offences are likely to have only non-violent offences as they begin their criminal careers and thus would be seen as 'specializing' in non-violence. Even youth with larger numbers of offences, while committing crimes within a single specialization category, may in fact have a range of offence types within that category. For such reasons then, categories are not used in this study. Instead, the use of individual arrest charge codes are examined to understand

whether there is a breadth of crime charge types which would indicate versatility rather than specialization. Using this type of analysis, this study applies a tighter definition of specialization because in order to specialize, offenders would have to commit single or at least very few different arrest codes. The existence of numerous arrest codes for offenders would suggest versatility whereas finding fewer reported arrest codes would indicate a trend toward specialization by offenders.

4.3 Testing Definitions of Persistence

The literature on persistence and criminal careers includes a number of definitions that researchers have used to define persistence in some population. While Moffit's (1991) definition of the life-course persistent offender seems to influence or provide a framework for developing subsequent definitions, other definitions in the literature were operationalized for use in single studies.

This study applies different definitions as found in the literature, to a single population of delinquent youth. The reader is reminded that the main objective of the study however, remains to be an attempt to understand persistence as a broad, inclusive topic area. While the suggestion regarding the application of differing definitions to the same dataset will identify different offenders as persistent, may be true, the findings of this study may cause one to consider that it is also plausible that *any* definition of persistence will identify some degree or amount of persistent behaviour in a sample of persistent offenders. Further, some definitions may find some individuals, as indicated by their behaviour patterns, to be persistent while others definitions do not.

While pre-incarceration arrest data may not have been reported on offenders who were incarcerated prior to age 18, it is worth noting that all offenders included in this study had to have either a persistent enough juvenile record or had committed a crime serious enough to warrant committal to California's state juvenile correctional system. It is quite likely that the population consists mainly of persistent offenders and therefore, should reveal some interesting findings when definitions created to identify persistence are applied to the data.

This study examines how many offenders are identified using the criteria as operationalized by prior research investigating criminal careers or persistence. The following subsections identify the authors of the studies, the year in which the findings were published, and the criteria that form the definition.

4.3.1 Definition 1: Wolfgang, Figlio & Sellin (1972)

In their groundbreaking work on criminal careers, Wolfgang et al. (1972) define persistence as five or more offences prior to incarceration.

4.3.2 Definition 2: Haapanen (1990)

Haapanen considered any individual who offended as an adolescent as well as an adult as a persistent offender. This definition, which actually precedes Moffit's better-known work (1993), is identical to Moffit's definition of the life-course persistent offender. In the present study, any offender found to have pre- and post-admission arrest data was considered to meet Haapanen's definition of persistence.

4.3.3 Definition 3: Horney & Marshall (1991)

In their investigation of criminal lambda, Horney & Marshall (1991) compared the offending rates of two groups, low-rate and high-rate offenders. These authors determined that individuals with ten or more offences in targeted crime types within a three-year period were considered high-rate offenders. Having less than ten offences relegated individuals to the low-rate offending group. In the present study, if an individual had less than ten offences in a three-year period following release, they are considered low-rate offenders and having ten or more arrest charges during the three-year follow-up period would place the individual in the high-rate offender group. The analysis of this definition is not limited to targeted crimes but rather all crimes reported in the arrest data.

4.3.4 Definition 4: Moffit (1993)

Moffit defined two groups of persistent offenders, adolescent limited and life-course persistent. Her definition of life-course persistent, an offender that commits an offence as both an adolescent and as an adult, has become recognized and is a widely-used definition of persistence.

This study examines the youth in the population as being defined as adolescent limited persistent offenders or life-course persistent offenders. If an offender in the sample offended before age 18 but not again, they are considered adolescent limited offenders. If an individual offended both before and after age 18, they are considered to have met the definition for a life-course persistent offender.

This study was also able to identify offenders that did not fall into either of the above groups. These adult onset offenders began offending only after age 18. Results for this group of offender are included in the next chapter.

4.3.5 Definition 5: Piquero, Paternoster, Mazerolle, Brame, & Dean (1999)

These authors considered any individual with two or more offences over an eight-year follow-up to be persistent offenders. Since the data only allows for up to a five year follow-up of offenders released for the first time in 1998, in order to examine this definition and allow for an eight year follow up, only offenders released prior to 1996 are considered.

4.3.6 Definition 6: Piquero (2000b)

Piquero's 2000b study, based on police contacts prior to age 18, considered individuals persistent if they had three or more police contacts by age 18. In the present study, arrests are considered police contacts and therefore, any youth having three or more arrest charges prior to age 18 were considered to have met this definition.

The limitation here however, is that in using data containing arrests, incidents where the youth had a police contact but was not arrested would not be included and the study may under estimate the number of incidents involving police.

4.3.7 Definition 7: Berg & DeLisi (2005)

Any individual at or above the 90th percentile for total arrests. The application of this definition simply identifies the number of individuals in the data at or above the 90th percentile for total arrest charges.

4.4 Prolific Offenders: The Most Persistent of the Persistent

Persistent offenders are the busiest offenders, a small percentage committing most of the crime. Using a population of offenders who have demonstrated persistent criminality, or committed serious enough crimes to be incarcerated, as juveniles, it may still be true that some small percent is in fact the most persistent of the persistent, or prolific offenders.

This section of the study considers prior research findings reporting that in any population some small percent of offenders are the most persistent is true, and examines whether that is true even within a population of persistent offenders. The data are explored to determine if some percent of persistent offenders can in fact, be identified as the most persistent. This is done by comparing the total number of arrest charges attributable to the highest percentages (5%, 10%, 15% and 20%) of offenders. This is done for the population itself as well as for each group of offenders identified as persistent by each of the seven definitions described in the above section.

CHAPTER 5: FINDINGS

5.1 Descriptive findings

This section provides summary data for the population. Table 5.1 reports summary statistics on arrest charges for all youth.

Table 5.1: Summary statistics for youth.

Statistic	Count
Population	17,685
Total arrest charges	254,333
Mean number of arrest charges	14.4
Median number of arrest charges	12.0
Minimum number of arrest charges	1
Maximum number of arrest charges	136

Obviously, the youth are quite active offenders as they account for 254,333 arrest charges. The data shows there is a wide variation among the number of arrests, ranging from a single arrest charge to 136 arrest charges.

5.1.1 Distribution of arrest charges

The median number of arrest charges indicates that half the youth had less than 12 arrest charges. Figure 5.1 illustrates the distribution of total arrest charges. Figure 5.2 focuses on the tail of the distribution in Figure 5.1, those youth at or above the 95th percentile for number of arrest charges, to more clearly illustrate the distribution of youth with the highest number of arrest charges

Figure 5.1: Count of youth by number of arrest charges.

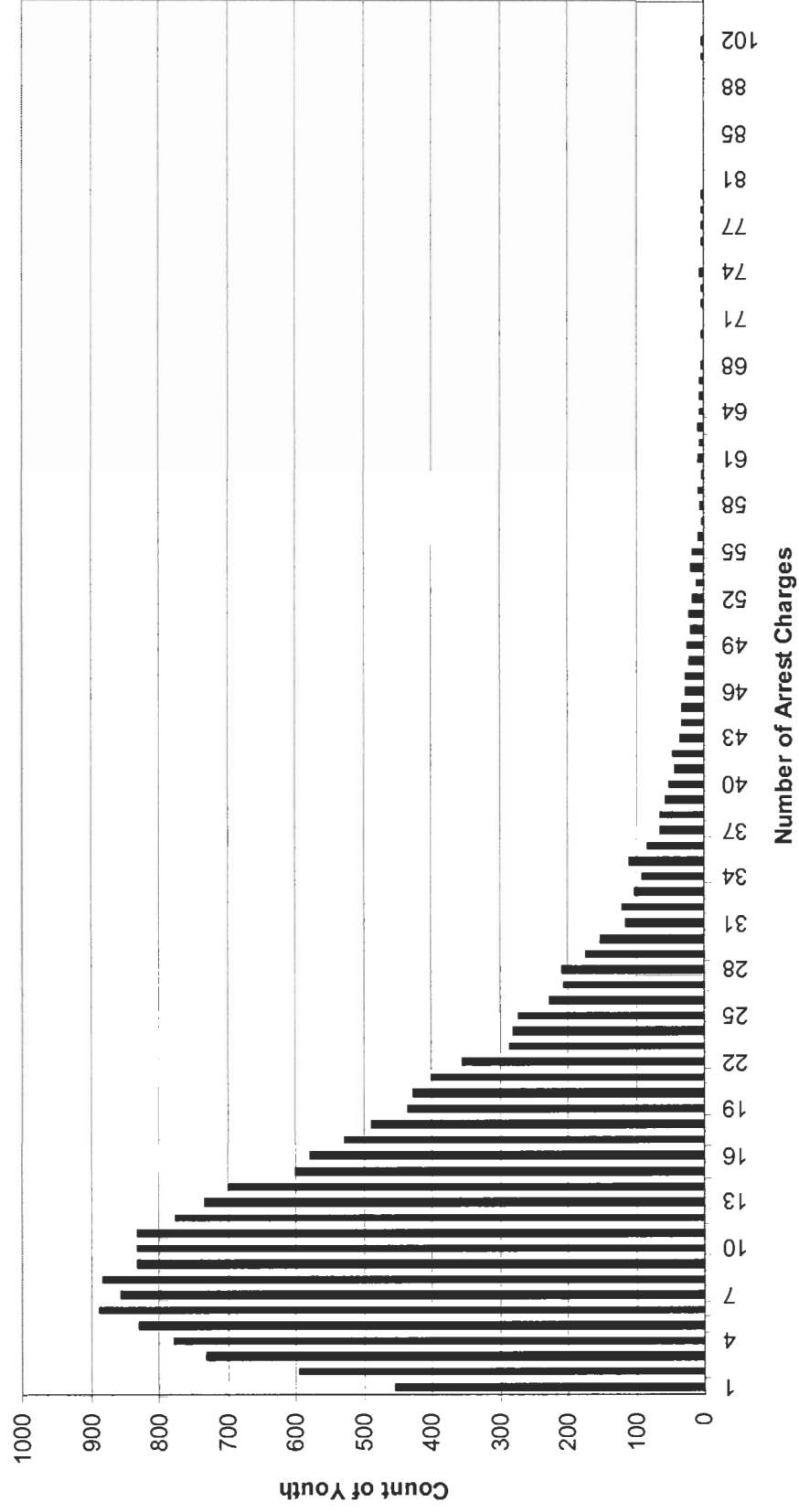
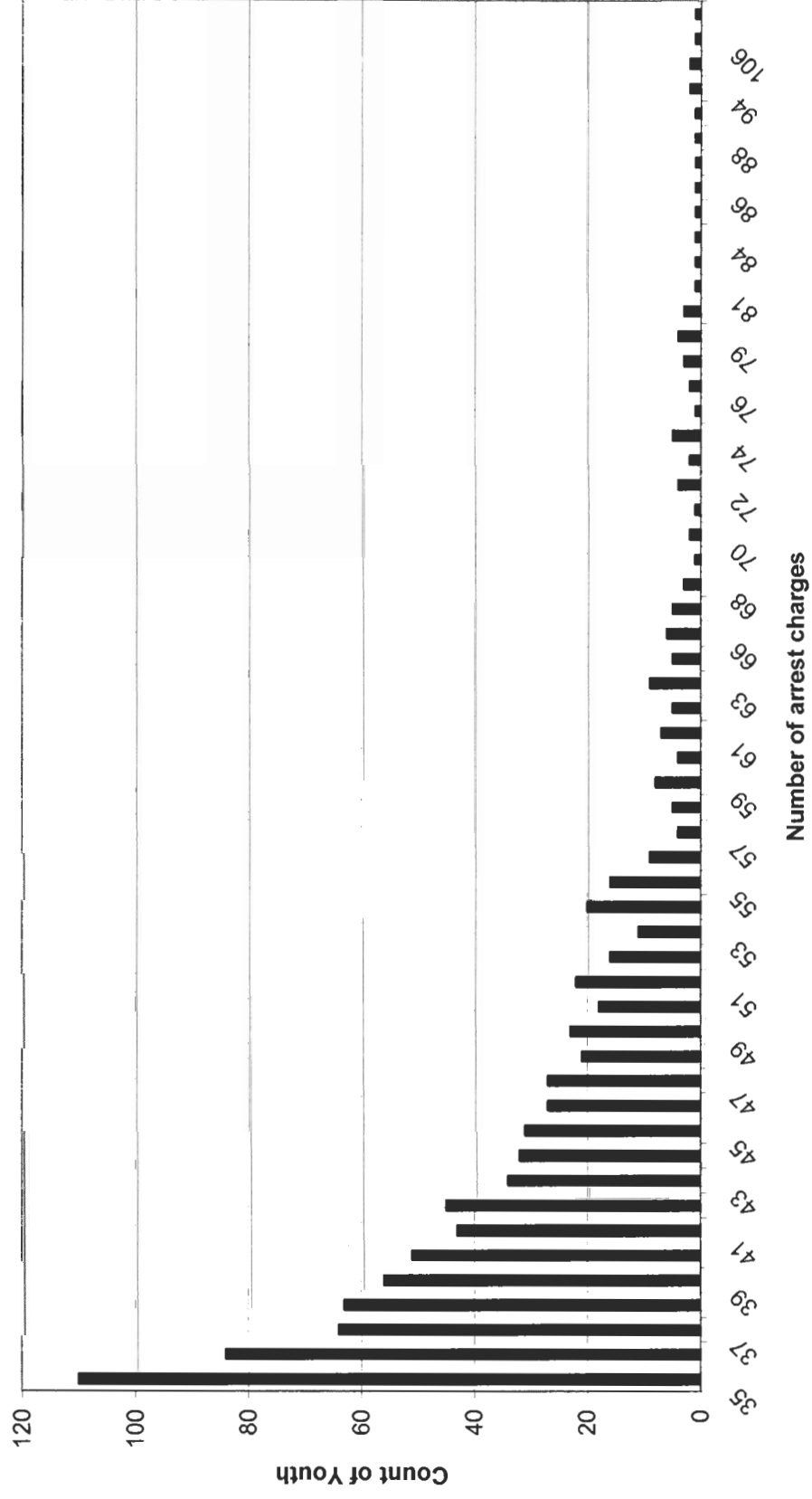


Figure 5.2: Count of youth with highest number of arrest charges by number of arrest charges. (Ninety-fifth percentile and above for arrest charges).



Since criminal behaviour prior to admission is a determining factor whether an offender is incarcerated, arrest charges that occurred prior to the youth being admitted to a CYA facility for the first time were examined. Table 5.2 provides summary data on arrest charge frequencies prior to first admission.

Table 5.2: Summary statistics of pre-admission arrest information for youth.

Statistic	Count
Population	17,685
Total arrest charges prior to admission	71,069
Mean number of arrest charges	4.0
Median number of arrest charges	3.0
Minimum number of arrest charges	1
Maximum number of arrest charges	136

The number of pre-admission arrest charges account for less than one-third (27.9%) of all arrest charges in the data indicating that the youth were busy following their first release since they committed two-thirds of the total crime once released from CYA facilities for the first time.

The finding that youth had an average of 4.0 arrest charges prior to admission is surprising for two reasons. First, since the youth admitted to the CYA are de facto, the worst young offenders in California, one would expect a higher number of charges prior to admission. Secondly, Haapanen, Britton & Croisdale (2007) report that the average number of arrest charges prior to admission to CYA is as high as 10. This figure (10), as reported in earlier studies, is based on arrest records for individuals entering the CYA in 1998 only (see Haapanen, Britton & Croisdale, 2007). Since the average of 4.0 reported in the current study considers more individuals over a longer time period, it may provide a better picture of a historical average of arrest charges for individuals entering CYA.

5.1.2 Committal offence

The data contained information on the youths' committal offences. The analysis suggests that the youth indeed were incarcerated for a range of offences such as serious offences like homicide, and less serious offences such as theft and misdemeanours.

Table 5.3 shows a count of all youth by their committal offence.

Table 5.3: Count of youth by committal offence.

Statistic	Count
Total	17,685
Aggravated assault	2,302
Assault	452
Auto theft	467
Burglary	2,925
Drug possession and/or use	1,252
Drug sales	1,561
Homicide	779
Miscellaneous felony	555
Miscellaneous misdemeanour	706
Robbery	3,997
Sex offences	124
Theft	2,522
Welfare & Institutions Code offences	43

5.1.3 Age at admission

Age of admission often is studied within the area of criminal career research.

While different from age of onset for offending, age at admission is an important variable in studying persistence because it reveals the age at which youth enter secure custody facilities. Similar to age of offence onset, where research has found that early offence onset is correlated to career length and therefore, persistence, one could assume that earlier custody onset could be correlated to career length and persistence in so much as it

is indicative of persistent or serious adolescent criminal behaviour. Table 5.4 reports the number of youth by age of first admission to CYA.

Table 5.4: Age at first admission to CYA.

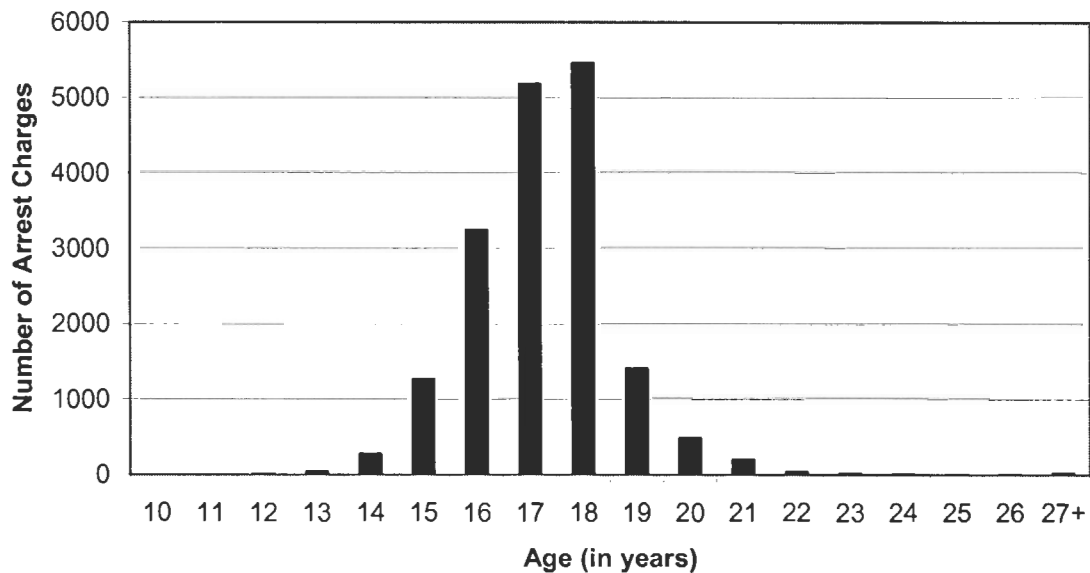
Age at Admission	Count
Total	17,685
10	2
11	2
12	11
13	46
14	279
15	1,264
16	3,240
17	5,184
18	5,459
19	1,416
20	478
21	203
22	43
23	17
24	12
25	3
26	6
27+	20

In California, all youth committing an offence prior to age 18 are normally committed to CYA. There are some exceptions however which help explain why some offenders may have been admitted to CYA at age 18 or later. First, no matter the age of the offender at time of arrest or charge, the deciding factor on whether the offender is committed to CYA or CDCR is the offender's age at the time of committing the offence. Following from this explanation, some offenders are admitted to CYA for the first time at age 18 or later and, in fact, some offenders have been as old as 26 when first admitted.

A second explanation as to why some offenders seem to have first-time admission dates at older ages is simple data entry error. Some offenders were reportedly older than age 26 at first admission and so it seems likely that date data was incorrectly input in the original data systems. There were 20 offenders with reported ages above 26 years at first admission to CYA.

Data from Table 5.4 is presented in Figure 5.3 to better illustrate the relationship between age and admission to CYA. The distribution is quite similar to the age-crime distribution discusses later in the chapter. Figure 5.3 illustrates the age distribution of first-time admission to CYA, or the age-incarceration curve.

Figure 5.3: Distribution of youth by age of first admission to CYA.



5.1.4 Time duration to re-offend

Since some of the definitions from the literature tested against the current dataset were developed with concern for offending patterns following an offender's release from

secure custody, a curiosity arose regarding how soon after release, offenders begin offending, if at all. Of the 17,685 offenders, 1,177 (6.6%) had new arrest charges following their first admission but while they were still incarcerated. Another 1,693 (9.6%) had no arrest charges following their first admission. The remaining 14,815 (83.8%) offended for the first time after admission but following their first release. Table 5.5 reports a count of those 14,815 youth by the time duration following first release, before the youth is charged with a new offence.

Table 5.5: Count of youth by number of months prior to first arrest charge following first release from CYA.

Time Duration	Count	Cumulative Count	Cumulative %
Total	14,815	14,815	100.0
1 month or less	807	807	5.4
Month 2	1,038	1,915	12.5
Month 3	989	2,904	19.1
Month 4	933	3,837	25.4
Month 5	819	4,656	31.0
Month 6	741	5,397	36.0
Months 7 - 12	3,208	8,605	57.6
Months 13 - 18	1,521	10,126	67.9
Months 19 - 24	1,105	11,231	75.3
More than 24 months	3,654	14,815	100.0

Over 25% of youth who offended again after their first release from CYA, did so within the first four months after release and more youth offend as time passes. In the six months immediately following the youths' first release, 36% re-offended. Nearly 60% re-offended within the first year, almost 70% re-offend in the first 18 months, and just over 75% re-offended within 2 years.

5.2 Persistence Issues

5.2.1 Onset

Table 5.6 reports the age at which the youth first had an arrest charge. As mentioned earlier, most youth are admitted to CYA prior to reaching 18 years of age. As indicated in Table 5.6, some offenders were 18 years or older at time of the arrest charge. This is not to be confused with the age at which they actually committed the offence they were charged with. Age at time of actual committal could be up to several years earlier, while they were in fact juveniles.

Table 5.6: Age at first arrest charge.

Age at First Arrest Charge	Count
Total	17,685
8 or less	20
9	26
10	71
11	179
12	641
13	1,825
14	3,399
15	4,065
16	3,340
17	2,090
18 or older	2,029

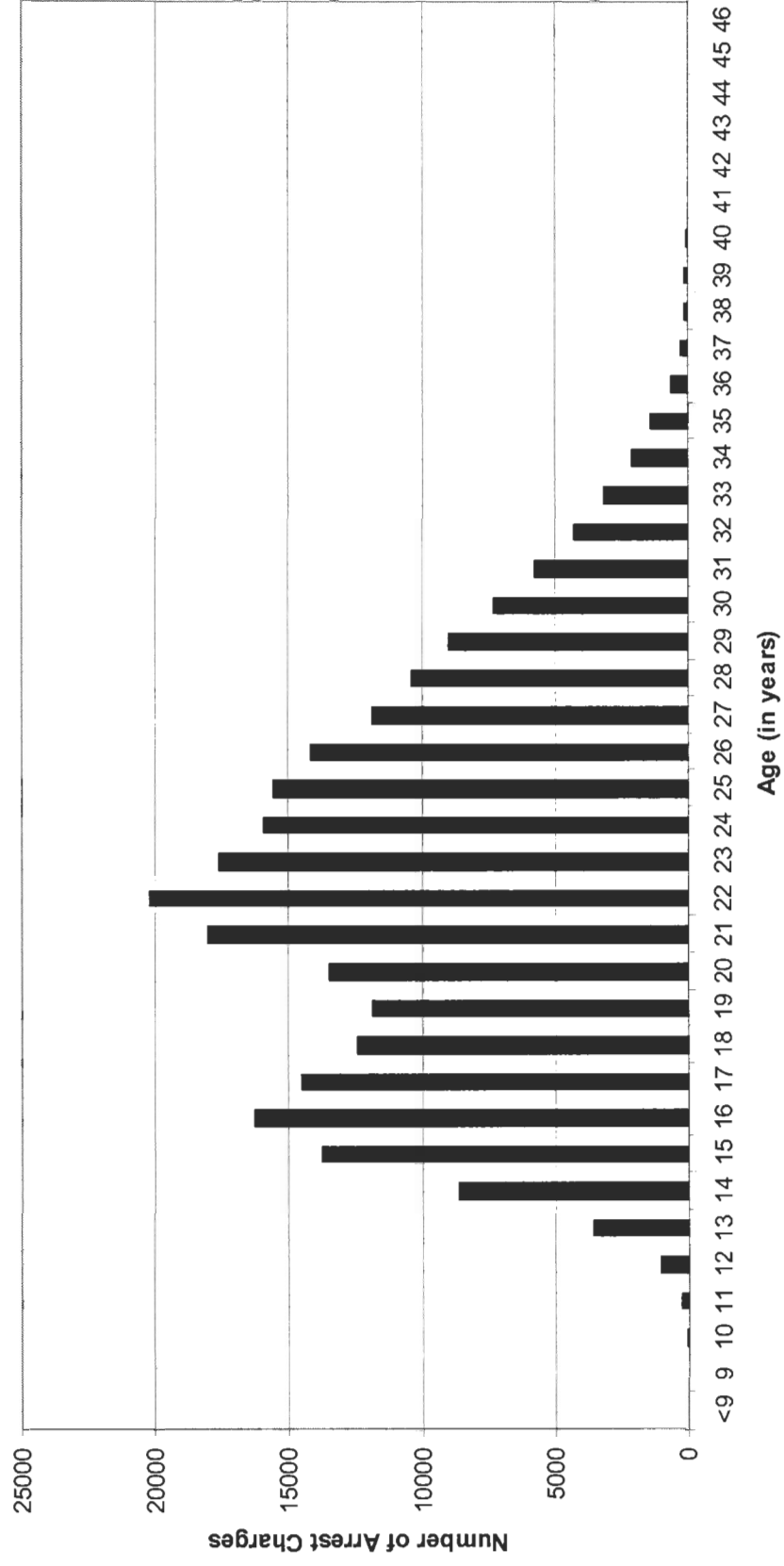
As one would expect, while some youth began offending in childhood, the majority of youth began offending as adolescents. This study found that the number of youth with first-time arrest charges increases through adolescence, and peaks in the later years of adolescence. Since the population is comprised of youth who were incarcerated as juveniles, the peak ages of 14 through 16 are slightly earlier than the peak ages we see

in other age-crime curves. Prior research reported age-crime curves with similar findings but, with peak ages around 17 or 18.

5.2.2 Age-crime curve

The age-crime curve illustrates the *amount* of offending carried out rather than the onset age of offending. Figure 5.4 reveals the age-crime curve of the youth by illustrating the distribution of the number of crimes committed by youth at different ages. The findings are consistent with previous research reporting that as age increases through adolescence, the amount of crime increases and peaks in the late teens. For the offenders in this study, the age-crime curve reveals that they peak earlier, followed by a second, higher peak in the later adolescent years.

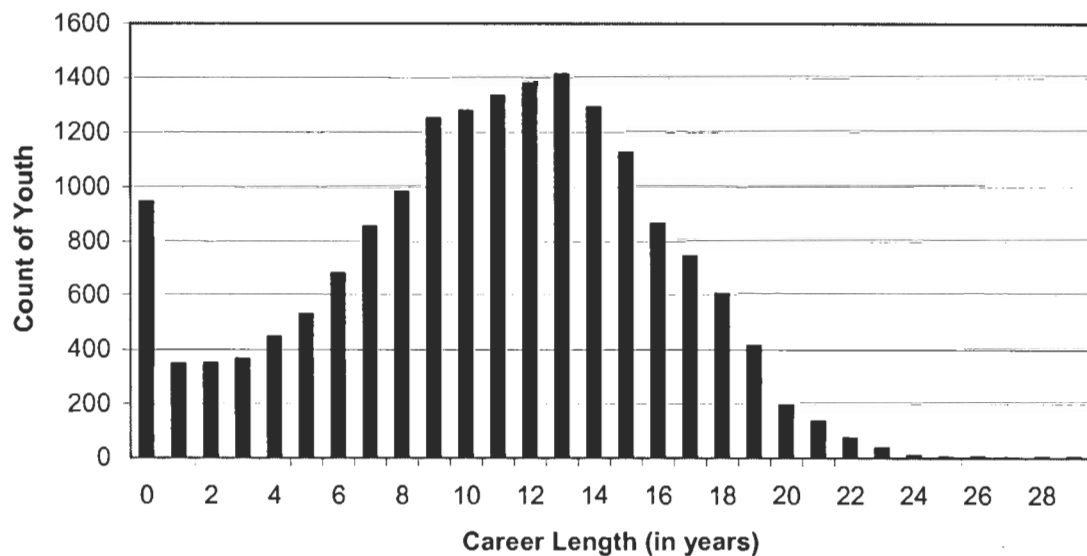
Figure 5.4: Age-Crime Curve: Number of arrest charges by offender's age.



5.2.3 Career length and desistence

This study includes an examination of career length with the stipulation that the career lengths reported herein do not equal true desistence from offending but rather, simply report a calculated length of time between first and last arrest charges for each offender as found in the data. As such, Figure 5.5 reports career lengths of the offenders given the duration of time for which data were available.

Figure 5.5: Calculated career length of youth



5.2.4 Specialization and versatility

To examine whether youth specialize in certain types of crime or whether they are more versatile generalists, this study uses all charges rather than grouping charges into offence categories such as the four categories suggested by Sampson and Laub (2003), violent crime, property crime, alcohol or drug related crime, and all other crime. The

reason is that while the results of using categories may or may not suggest specialization, the use of individual charge types will better depict versatility than if the analysis was limited to four categories. As such, the more versatile the offender, the more charge types an offender will have. Table 5.7 reports the results of the analysis on specialization and versatility. The numbers down the left column indicate the number of arrest charges accumulated on single individual arrest events. The columns across the page indicate the number of different offense types included in (or comprising) the number of arrest charges. For example, 62.9% of all offenders who had two arrest charges associated with a single arrest event, had one offense type comprising the two arrest charges, perhaps two assaults. That is, both arrest charges were for the same offense. The remaining 37.1% of offenders having arrest events with two arrest charges were charged with two different offenses, perhaps assault and theft.

Table 5.7: Percent of offenders by number of different offenses by number of arrest charges (20 or less unique arrests).

Number of arrest charges	Number of different offenses									
	Total %	1	2	3	4	5	6	7	8	9+
1	100.0%	100.0%								
2	100.0%	62.9%	37.1%							
3	100.0%	42.3%	33.1%	24.6%						
4	100.0%	27.1%	24.5%	30.9%	17.6%					
5	100.0%	19.7%	19.4%	23.3%	24.2%	13.4%				
6	100.0%	11.5%	15.7%	16.5%	22.6%	19.2%	14.4%			
7	100.0%	7.7%	11.9%	16.1%	18.6%	21.1%	16.4%	8.2%		
8	100.0%	7.5%	5.9%	13.2%	16.6%	18.9%	18.4%	13.4%	6.2%	
9	100.0%	3.5%	6.5%	8.4%	14.6%	16.6%	19.6%	14.0%	13.0%	3.8%
10	100.0%	2.9%	3.4%	7.8%	11.1%	15.9%	17.6%	16.8%	14.3%	10.4%
11	100.0%	2.3%	4.1%	5.8%	9.6%	12.9%	18.0%	19.9%	14.9%	12.5%
12	100.0%	2.2%	2.8%	5.6%	6.6%	10.2%	14.7%	18.5%	18.5%	20.8%
13	100.0%	2.0%	1.9%	3.9%	7.2%	10.9%	12.4%	18.9%	20.8%	21.9%
14	100.0%	1.1%	1.8%	3.8%	5.6%	10.2%	11.8%	19.8%	22.3%	23.6%
15	100.0%	1.6%	1.0%	2.0%	3.9%	5.9%	12.4%	24.2%	23.5%	25.5%
16	100.0%	0.4%	1.1%	3.4%	4.6%	7.6%	14.1%	14.1%	24.4%	30.2%
17	100.0%	0.5%	1.0%	1.0%	4.1%	9.3%	9.8%	15.5%	29.4%	29.4%
18	100.0%	0.7%	0.7%	2.1%	4.2%	7.0%	15.5%	20.4%	18.3%	31.0%
19	100.0%	1.0%	1.0%	3.1%	0.0%	7.1%	5.1%	17.3%	29.6%	35.7%
20	100.0%	0.0%	1.0%	3.1%	4.2%	4.2%	12.5%	22.9%	16.7%	35.4%

Data reported only for offenders having up to 20 arrest charges. Analysis indicated that for offenders having 21 or more arrest charges, none had single arrest charge codes (same offenses). Those groups actually provided further evidence of the continued trend toward a greater number of arrest charge codes for offenders having more arrests.

The results in Table 5.7 indicate that offenders are highly versatile and tend to not specialize in crime. Since the table reports aggregate results, it is quite possible that a minority number of offenders do tend to specialize in certain offences. As the table suggests however, the greater the number of arrests, the greater the number of arrest charge codes. This relationship is evident for even the smallest number of arrest incidents. Even for offenders with only two arrest incidents, over one-third had two arrest charge codes. For those offenders with only three arrest incidents, the majority of offenders (57.1%) had more than one arrest charge code. For those with 5 arrests, 81.1% had more than a single arrest charge code, and 61% had more than two arrest charge codes. Of the offenders with 10 arrests, only 2.9% had a single arrest charge code, leaving 93.2% with more than two arrest charge codes and still 74.3% with five or more arrest charge codes. At 20 arrests, the percentage of offenders with single arrest charge codes is zero. For offenders with 21 or more arrests the same is true, none have only a single arrest charge codes but have a greater number of arrest charge codes.

5.3 Testing Definitions of Persistence: Results

The following sub-sections report the number of youth who were identified by each respective definition as fitting that definition of persistence. Percentages of the population for which that number accounts are also given. Also reported are the number and percent of total arrest charges associated with identified offenders.

5.3.1 Definition 1: Wolfgang, Figlio & Sellin (1972)

The definition developed by Wolfgang et al. identified offenders as persistent if they had five or more offences prior to incarceration. For the purposes of this study, if an

individual had five or more offences prior to first admission to CYA they were considered identified by this definition.

Table 5.8: Summary of offenders identified by definition used by Wolfgang, Figlio & Sellin (1972).

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
6,001	33.9%	107,383	42.2%

5.3.2 Definition 2: Haapanen (1990)

Haapanen considered any offender who committed both as an adolescent and as an adult a persistent offender. If an offender in the population had arrest charges as an adolescent and as an adult, they are identified by Haapanen's definition.

Table 5.9: Summary of offenders identified by definition used by Haapanen (1990).

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
15,380	87.0%	242,453	95.3%

5.3.3 Definition 3: Horney & Marshall (1991)

These authors identified two groups of offenders, low-rate offenders (LR), those having less than 10 offences in a three year period immediately following their first release, and high-rate offenders (HR), those offenders having 10 or more arrest charges in the three years immediately following first release. Offenders were identified following those parameters for each group. Table 5.10 provides the results for the LR group and Table 5.11 provides results for the HR group.

**Table 5.10: Summary of offenders identified by definition used by Horney & Marshall (1991).
Low-rate offender group.**

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
12,372	70.0%	175,646	69.1%

**Table 5.11: Summary of offenders identified by definition used by Horney & Marshall (1991).
High-rate offender group.**

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
1,958	11.1%	56,986	22.4%

5.3.4 Definition 4: Moffit (1993)

Moffit identified two types of persistence, adolescent limited (AL) persistence and life-course persistence (LCP). Adolescent limited persistence refers to those offenders who offended as adolescents but never again, or at least with no record of later offending. Life-course persistent offenders were defined by Moffit as those offenders who offended as both adolescents and adults. Table 5.12 reports the findings on the offenders in the population identified as AL offenders and Table 5.13 reports the findings on the offenders identified as LCP offenders.

Table 5.12: Summary of offenders identified by definition used by Moffit (1993). Adolescent limited persistent offenders.

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
1,994	11.3%	7,637	3.0%

Table 5.13: Summary of offenders identified by definition used by Moffit (1993). Life-course persistent offenders.

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
15,380	87.0%	242,453	95.3%

While Moffit focused on adolescent and life-course persistence, this study was able to also identify the offenders in the sample that did not fall in one of the above two groups due to their beginning to offend not as adolescents but as adults. This type of offender does not fit into either of Moffit's two groups. Table 5.14 reports the number of adult onset offenders discovered in the sample.

Table 5.14: Summary of adult onset offenders.

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
311	1.8%	4,243	1.7%

Not surprisingly, the number of adult onset offenders in the sample is low. The reason is that the sample is drawn from a population of offenders committed to a juvenile correctional agency where offenders must normally have committed the offence prior to being an adult.

5.3.5 Definition 5: Piquero, Paternoster, Mazerolle, Brame & Dean (1999)

Individuals with two or more offences during an eight-year follow up period after first release were considered to fit the definition described by these authors. Table 5.15 reports the findings.

Table 5.15: Summary of offenders identified by definition used by Piquero, Paternoster, Mazerolle, Brame & Dean (1999).

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
10,677	60.3%	183,904	72.3%

5.3.6 Definition 6: Piquero (2000b)

Piquero considered an offender to be persistent if they had three or more police contacts by age 18. For this study, unique arrests rather than arrest charges are considered contacts with the police. As such, if an offender had three or more unique arrests prior to age 18, they were identified as fitting the definition used by Piquero.

Table 5.16: Summary of offenders identified by definition used by Piquero (2000b).

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
11,153	63.1%	167,276	65.8%

5.3.7 Definition 7: Berg & DeLisi (2005)

All offenders whose total number of arrest charges are at or above the 90th percentile of total arrest charges for all offenders are considered to have met the definition provided by these authors.

Table 5.17: Summary of offenders identified by definition used by Berg & DeLisi (2005).

Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
1,186	6.7%	70,761	27.8%

5.3.8 Summary of definitions

To more easily compare the results of the definition testing, Table 5.18 provides a summary of the data reported in Tables 5.8 through 5.17.

Table 5.18: Summary of offenders identified by definition.

Definition	Number of offenders	Percent of all offenders	Number of arrest charges	Percent of all arrest charges
1	6,001	33.9%	107,383	42.2%
2	15,380	87.0%	242,453	95.3%
3 (LR)	12,372	70.0%	175,646	69.1%
3 (HR)	1,958	11.1%	56,986	22.4%
4 (AL)	1,994	11.3%	7,637	3.0%
4 (LCP)	15,380	87.0%	242,453	95.3%
5	10,677	60.3%	183,904	72.3%
6	11,153	63.1%	167,276	65.8%
7	1,186	6.7%	70,761	27.8%

As evidenced in the above table, there is a wide range in the number of offenders that the various definitions identified as persistent. Definition 7, as developed by Berg & Delisi (2005) identified the least number (1,186) of offenders as persistent which accounted for only 6.7% of the offenders in the sample. Nonetheless, the number of arrest charges attributed to those 1,186 offenders, 70,761 makes up a much higher 27.8% of all the arrest charges associated with identified offenders. These authors, by focusing on offenders accounting for a number of offences at or higher than the 90th percentile of

all offences committed, evidently seem to have concentrated on the most active of all offenders.

Regarding active offenders, the findings are similar for the high-rate group of offenders as developed in definition three by Horney & Marshall (1991). While the number of offenders (1,958) identified by these authors' high-rate group was only 11.1% of all offenders, the percentage of all arrest charges attributed to that group was slightly more than double, at 22.4%.

The findings related to the examination of the two definitions just mentioned, provide further evidence that some offenders are busier than other offenders. That is, a small number of offenders may account for a larger proportion of all offences, in this case arrest charges. This issue is examined in a later section.

The definitions identifying the greatest number of offenders and greatest number of arrest charges were definitions two, developed by Haapanen (1990), and the life-course persistent group as developed by Moffit (1993) as part of definition four. These researchers, with respect to Moffit's LCP group, defined persistence exactly the same. Both Haapanen and Moffit define a persistent offender as an individual who offends as both an adolescent and an adult. Using either of these definitions, 15,380 (87.0%) offenders are identified as persistent. Further, these 15,380 identified offenders accounted for 242,453 (95.3%) of the 254,333 total arrest charges.

5.4 Further Findings On Definition Testing

This study also examined across definitions to determine the number of different definitions that identified the same offender as persistent. A simple analysis was

completed which flagged each offender as identified by the respective definition. The findings, presented in Table 5.19, show the count of offenders by the number of definitions that identified the offenders' as persistent.

Table 5.19: Count of offenders by number of definitions identifying persistence.

Number of Definitions	Count of offenders
Total	17,685
1	346
2	958
3	2,171
4	4,945
5	5,469
6	3,276
7	493

These findings reveal that all but 346 offenders are identified by multiple definitions of persistence. This finding, coupled with the earlier findings as presented in Table 5.18, of the number of offenders identified by the differing definitions, supports a suggestion made in the literature that different definitions, applied to the same data, would identify different persons as persistent offenders. The population used in the study, combined with the application of the seven different definitions resulted in eight separate samples of offenders from the same dataset.

5.5 Prolific Offenders: The Most Persistent

As stated in Chapter 1, a long and widely held fact about offending is that a small percent of offenders is responsible for a large percentage of crime. This section reports

the findings on the analysis of whether a small percentage of offenders does in fact, account for a larger percentage of arrest charges.

In examining this issue, prior research has reported varying percentages of offenders that account for higher percentages of crime. For example, Wolfgang et al. reported that only 6% of the juveniles committed the bulk of all crime, Mednick (1977) found that a mere 1% of the male population accounted for more than half of all the crime (in Gottfredson & Hirschi, 1986), Wilson & Herrnstein (1985, in Gottfredson & Hirschi, 1986) report that chronic offenders (without defining chronic) account for 75% of the crime, and Cohen provided numerous estimates claiming that some small percent of offenders committed a larger percent, or the majority, of the crime committed (in Gottfredson & Hirschi, 1986).

In this analysis, different percentages of offenders were used to examine the number of arrest charges attributable for that percent of offenders. To remain consistent with percentages of offenders reported or suggested in prior research, this study reports percentages of all arrest charges for the 5%, 10%, 15% and 20% of offenders with the most arrest charges.

The findings are presented in Table 5.20. Data in the column 'Percent of arrest charges', represent the percent of all arrest charges attributable to each percent of offenders indicated at the top of the column. In the first instance, where no definition is applied, the percent reported identifies the percent of all 254,333 arrest charges in the data. In subsequent instances, when findings are reported with respect to the definitions of persistence, the percent of arrest charges refers only to the proportion of the arrest charges applicable to the group of offenders identified by that definition. Using

definition one as an example, the percent of arrest charges refers to the percentage of the 107,383 total arrest charges associated with the 6,001 offenders identified through the application of definition one.

Table 5.20: Percent of arrest charges attributed to specified percentages of offenders.

Criteria	Total Charges	Percent of charges attributed to percent of offenders			
		5%	10%	15%	20%
All data	254,333	16.3%	25.5%	35.0%	43.3%
Definition 1	107,383	13.3%	23.0%	29.9%	38.3%
Definition 2	242,453	15.1%	24.2%	33.2%	41.3%
Definition 3 (low-rate)	17,646	13.9%	23.1%	31.0%	37.9%
Definition 3 (high-rate)	56,986	10.8%	18.6%	27.3%	33.5%
Definition 4 (AL)	7,637	17.3%	29.1%	36.8%	46.7%
Definition 4 (LCP)	242,453	15.1%	24.2%	33.2%	41.3%
Definition 5	194,294	14.7%	24.9%	34.0%	39.6%
Definition 6	167,276	15.1%	25.6%	34.9%	40.7%
Definition 7	70,761	9.1%	15.6%	22.7%	27.2%

When looking at the amount of crime attributable to the busiest 5% of offenders identified by each definition above, the definition accounting for the most (17.3%) offence charges was Moffit's (1993) AL group (definition 4 AL). The next highest definitions were Haapanen's (1990), and Moffit's with the busiest 5% of all offenders accounting for 15.1% of all crime.

In only one other instance (the 10% group for definition 6) was one of the definitions' percentage groups able to account for a higher proportion of arrest charges than simply exploring the data. This finding may suggest that in any given population, alternative definitions may exist, or be developed to explain the characteristics of persistence for that population. As such, datasets need to be explored as possibly

providing a better understanding of persistence given the realities of the criminal justice system within a given jurisdiction.

With the exception of Moffit's (1993) AL group, the prior definitions did not identify more offenders than would a simple exploration of offending levels within the data. Since Moffit's AL group is concerned with offending that ceases at the end of adulthood, that definition has limited use in examining the phenomenon of long-term persistence in any dataset.

While adult onset was not included in the criteria for any of the definitions however, the findings are provided in Table 5.21 as they reveal an interesting finding.

Table 5.21: Percent of arrest charges attributed to specified percentages of offenders. Adult onset compared to data exploration.

Criteria	Total Charges	Percent of charges attributed to percent of offenders			
		5%	10%	15%	20%
All data	254,333	16.3%	25.5%	35.0%	43.3%
Adult onset	4,243	19.2%	30.9%	41.3%	50.9%

Interestingly, the percentage groups of offenders whose age of onset was during the adult years each accounted for a higher percentage of all arrest charges than what was found through simple data exploration. Similar to Moffit's (1993) AL persistence group, the study of adult onset as a method of predicting persistence may have little use in the long-term study of persistence for two reasons. First, not all offenders who begin offending as adults continue to offend nor are they accounted for in this dataset. Second, due to the passage of time, when one has enough data to understand that an adult onset offender has exhibited a pattern consistent with persistent offending, the offender may already be in a declining trajectory or already incarcerated.

Given the ability however, that Moffit's (1993) AL group and the adult onset offender group showed the strongest evidence that smaller percentages of offenders account for higher percentages of arrest charges, one could reasonably conclude that the inclusion of some combination of adolescent and adult offending would provide the best definition of persistence, and therefore, the best effort at understanding persistence. Consistent with that thought are Haapanen's (1990) and Moffit's (1993) LCP definitions of persistence. These definitions are identical in that they both consider offenders who offend as both adolescents and adults as persistent offenders. Coincidentally, Haapanen's and Moffit's definitions were able to account for the highest of all arrest charges as compared to all other definitions of persistence examined in this study. This criteria shared by those definitions seems to provide the most successful definitions for identifying persistent criminal behaviour then, at least, long-term persistent behaviour.

CHAPTER 6: DISCUSSION

The purpose of this study was to develop and provide a better understanding of persistence and criminal career research. There is no denying it has accomplished that task. The literature on persistence and criminal careers reveals common topics and issues but also reveals inconsistent findings on those topics, suggesting that past and future research can be conducted from different perspectives.

The lengthy history of research on persistence and criminal careers indicates that prior studies have been conducted from a variety of theoretical backgrounds, on differing ages of offenders, and in different countries around the globe. This study considered a number of theoretical perspectives and incorporated a longitudinal analysis of arrest data on youth who had been committed to the CYA between 1988 and 1998, and followed those youth after their first release up until the end of 2003. The analysis also included arrest data prior to the youth being committed to CYA. The population of 17,685 used for this study was one of the largest samples of any research found in the literature.

6.1 Findings: Demographics

The offenders in this study can be described as young and criminally active. All but a very few offenders in the study began offending during or before adolescence, were incarcerated for sometime in CYA facilities, and continued to offend after their first release. The 17,685 youth included in the sample accounted for 254,333 arrest charges, a

mean average of 14.4 charges per youth over the data period. A small percentage of offenders did account for a larger percentage of all crime.

The youth were committed to CYA for a variety of offences ranging from violations of California's Welfare & Institutions code, to drug sales, drug possession or drug use, to robbery and homicide. Most offenders were committed to CYA at ages 16, 17, or 18 and almost all (90.4%) offended again after their first release. Of those that did re-offend after first release, one-third did so within the first six months, 57.6% within the first year, and 75.3% within the first two years.

6.2 Findings: Persistence Issues

As part of the effort to understand topics and issues of persistence, the most commonly studied or seemingly, most important issues in the literature on criminal careers were applied to the data. Most findings were consistent with prior research and some interesting findings resulted.

6.2.1 Onset

The findings of this study were consistent with previous research findings. There was an increase in the number of offenders as age increased from early adolescence to the peak years before tailing off slightly at ages 17 and 18. There was a slight difference found between this study and previous research regarding the peak ages of onset. Prior research indicated peak ages of onset to be the later adolescent years, 17, 18 and 19 years, whereas the youth in this study peaked at age 15 with the next highest levels at ages 14 and 16. The fact that the youth in this study had earlier onset ages obviously had a direct effect on the youth consequently being committed to CYA.

6.2.2 Age-crime curve

The age-crime curve representing the amount of crime in the data was consistent with prior research as well. The findings indicated an increasing amount of crime committed as age increased from early adolescence to late adolescence. After peaking, the age-crime curve illustrates a decreasing amount of crime into adulthood. An interesting phenomenon can be seen in the data (Figure 5.4) however. Consistent with previous research, the age-crime curve increases in adolescence but only until age 16 at which time there is a three year decrease followed by another three year increase prior to a decrease in offending into and through adulthood. The existence of two peaks likely can be attributed to some effect of incarceration. Since age at admission peaks in the later adolescent years, the youth in the sample, and therefore the de facto most violent or persistent youth in California by virtue of having been committed to CYA, are incarcerated during those years. When they begin getting released for the first time they begin to offend again and contribute to the increased number of crimes committed at the second peak at age 22.

6.2.3 Career length and desistence

While no consideration is given to calculating actual desistence as would be associated with an offender's death, the study calculates career length nonetheless with the caveat that it is simply a length of time between first arrest record and last arrest record as found in the data. The majority of offenders committed over time spans between 9 and 16 years. Two youth offended over the longest calculated length of time, 29 years.

6.2.4 Specialization and versatility

The prior research on specialization indicated mixed findings, some found that offenders tended to specialize, some found offenders did not specialize but were versatile, and some research found that offenders neither specialized nor were they versatile. Probably the most interesting finding in this study concerning the topics within the criminal career research, was the finding regarding specialization, or rather, lack thereof.

The analysis on specialization found that when examining arrest charge codes, not only do offenders tend not to specialize in one or a few offences, but rather, the more crime they commit, the more types of crimes they commit. For offenders with only two different arrest incidents, over one-third had two different arrest charge codes (crime types). For offenders with only three arrest incidents, the majority had more than one single arrest charge code. The analysis revealed a positive relationship between number of arrest charges and number of arrest charge codes; the higher the number of arrests, the higher the number of different arrest charge codes. This would suggest that in studying persistence, it would be an error to focus on any single type of offence such as vehicle theft or burglary. This finding may in fact provide the first piece of evidence that persistent offenders, by not concentrating on single or very few types of crimes, will commit any crime given an opportunity to offend. Given that, it follows that upon finding an opportunity, the persistent offender will offend. The discussion of opportunity then, becomes a very important topic within the study of persistent offending.

6.3 Findings: Definition Testing

The findings were consistent with suggestions in earlier research that multiple definitions of persistence, applied to the same dataset would result in different samples of

offenders identified as persistent. There was a wide range in the number of offenders and the number of arrest charges identified by the seven definitions. Wolfgang et al.'s (1972) groundbreaking study actually identified the fewest offenders (33.9%) and accounted for the fewest arrest charges (42.2%) from the sample. Two definitions identified both the highest number of offenders, 15,380 (87%), and the highest number of offences 242,453 (95.3%). These two definitions used identical criteria in defining persistence.

Haapanen (1990) and Moffit (1993), with regard to Moffit's LCP group, used the exact same characteristics to identify offenders as persistent. To fit the definition of persistence developed by these two authors, offenders had to offend as both adolescents and adults. This definition, while identifying the most offenders and offences, focuses on persistent offending over an extended time.

6.4 Findings: Prolific Offenders

The idea that a small percent of offenders commit a majority, or some large percentage of crime has been consistently found to be true by previous research. These findings also gain pragmatic credibility through the comments of criminal justice system practitioners such as police, prosecutors, correctional officers and parole agents, who time and time again relate that a small group of offenders commit most of the crime. This author has repeatedly heard such comments from persons working as police officers, correctional officers, and parole agents. This study found that within each definition applied to the data, a small group of offenders did in fact account for a larger percent of the total crime committed by the respective group of offenders identified by each definition.

6.5 Comments on Definitions of Persistence and Prolific Offenders

With regard for defining persistence and for consideration of the busier, prolific offenders, research seldom makes any differentiation for the pattern of offending during adolescence and adulthood. A few possible patterns do exist however. Prior research on persistence does not account for the fact that there may be differing *types* of persistence but rather, research and researchers consider the term persistence as an all-encompassing, generic term. The existence of multiple definitions however, serves as evidence that there is in fact no generic agreement on any single definition of persistence.

Given that multiple definitions exist, combined with the fact that when persistent criminal behaviour is studied over an extended time, there are several types of persistence, the term persistence becomes a categorical descriptor of criminal behaviour rather than a type of behaviour. As a category of criminal behaviour, the term persistence is similar to a category of theory or crime such as violent crime, which describes a category of crime having several types. Persistence as a term may better be used to describe a category of criminal behaviour with the following possible types of behaviours categorized as persistent. First, low frequency long-term persistence would describe offenders who offend at a low frequency but consistently over an extended time period. A second type, high frequency long-term persistence would describe more active offenders who commit more crime over an extended period. Third, high frequency short-term persistence would describe offenders who offend at a high frequency but for a shorter time period and who do not commit again in the future. A fourth type of persistence, high frequency short-term cyclical persistence, would describe offenders who commit crime at a high frequency for a short period followed by a period of no, or

lower frequency offending, followed again by a period of high frequency offending before returning to a period of lower offending, as a continued cycle over time.

The above types of persistence by no means comprise an exhaustive list of possible types of persistence. Whatever types found to exist by future research may even incorporate consideration for age such as the adolescent and adult ages and even life-course persistent types which would carry over from adolescence into adulthood. Whatever types of persistence are ultimately realized, the fact remains the term persistence, as criminologists now use it, should be considered a category of crime or dropped entirely in favour of more specific types of persistence.

A second comment on defining persistence is that all definitions developed to date consider data retroactively. In order for research on persistence to be usable to the criminal justice system, especially to the police, there needs to exist some method or process for identifying behaviours or offenders as persistent in a manner entirely different from the retrospective, extended time periods commonly used by criminologists. The police then, need a method to identify behaviours as persistent in a much shorter time period than the lengthy number of years used in research. As such, criminologists need to develop an ability to predict persistence early on.

There are many problems associated with attempting to predict persistence however. For example, there is concern over what data should be used. Police agencies themselves have multiple types of data that could be considered such as contacts, arrests and even the intelligence gathered by police personnel. There may even be consideration for whether the behaviour would be continued or whether it is short-term and that which would not occur again. Criminologists, criminal justice agencies and law-makers must

also consider a multitude of sanctions for persistent behaviour. As one can imagine, many issues need to be included in any consideration of whether predicting persistence is viable as a law enforcement tool.

The reader is cautioned that there are ethical concerns surrounding the application of prediction models and processes. Obviously, no offender should be arrested, convicted or sentenced on a *prediction* that they will offend in the future. Much grey area surrounds the use of prediction and as such, it's application must be ethical and follow both legal and civil laws and rights. Any action by the criminal justice system toward an individual who meets a definition of persistence, should be based on historical offence patterns and not on the assumption that the predicted behaviour will in fact occur.

The study of persistence must continue to be important to criminal justice agencies attempting to reduce crime. If a small percent of offenders commit a large percent of crime, targeting that small group would indeed have an effect on reducing crime. With ever declining resources, criminal justice agencies must reorganize or reinvent themselves to best utilize those resources to have the greatest effect. In the near future, there may well be a trend for criminal justice agencies to target persistent offenders. Research on defining and predicting persistence must be at the forefront of that effort to provide information to law enforcement and other criminal justice agencies to enable them to make evidence-based decisions rather than rely mainly or solely on officer obtained intelligence.

6.6 Persistent Offenders and Resistance

Persistence is continued offending over time. Since all of the definitions included in this study are applied retroactively and based on historical data, the fact remains that researchers do not identify offenders as persistent early in their careers. Labels are applied only after an offender has demonstrated some pattern of offending over time. As mentioned above, in order to offer pragmatic solutions to the criminal justice system, researchers are faced with a need to predict persistence. Another factor however, that confounds predicting a career of persistent offending is that some offenders, while perhaps persistent early on, cease offending at some later point.

This fact elicits the idea that consideration of the cessation or continuance of offending may hold some merit in the development of a predictive model of persistent offending. Following from that thought is the realization that persistent offenders continue to offend regardless of the sanctions imposed on them. While many offenders may cease offending when early interventions are applied, persistent offenders continue offending even while the severity of the sanctions imposed on them are ever increasing. Young offenders may first receive informal reprimands or suspensions from school while subsequent sanctions may move toward including family and social peers. Resistance, and therefore unsuccessful sanctions or controls will result in continued offending perhaps until sanctions increase to where police become involved, youth are removed from their homes and so on until ultimately, offenders are committed to correctional institutions. In California for instance, youth who persistently offend may receive informal sanctions followed by formal sanctions on a continuum from less to more severe including group homes, arrests, formal charges and placement in juvenile facilities.

Regardless of sanctions imposed, persistent offenders continue to offend; they are simply resistant to controls and the more those offenders resist, the more they offend (Haapanen, Britton & Croisdale, 2007). The existence of persistence and especially the continuance of persistence, suggests that there exists a place for a criminological theory based on resistance to controls. Under such theory, offending would be studied with consideration of an offender's resistance to responses to crime. As such, a resistance theory would proceed under the tenants of the rational, environmental criminology theories combined with life-course and social control theories and could be included in a strategy of studying persistence with an ultimate goal being crime reduction. Resistance, rationality and opportunity would be central themes. The pragmatic suggestions of environmental criminology would be applied to the study of persistence with consideration for resistance. Crime prevention, target hardening, crime mapping, etceteras would continue as important and pragmatic initiatives in crime reduction efforts. Obviously, with offenders who strongly and continuously resist controls, the idea of blocking opportunities holds much promise as a strategy for reducing crime. At the same time however, developing methods of decreasing resistance itself may also serve to reduce crime.

6.7 Persistent Offenders and Crime Opportunity

Quite likely, persistent offenders will offend again. They will resist sanctions, they will come across an opportunity and they will offend. Numerous sanctions can be imposed in an effort to abate offending however, as has been suggested, persistent offenders persistently resist sanctions and controls.

Assuming some factors cause offenders to begin offending, some of the same or additional factors will cause offenders to continue offending. After years of research, criminologists continue to find a common list of variables that contribute to crime causation. Resources have been focused on altering offenders' levels of these criminogenic factors for decades yet those factors remain the same. Seemingly then, the popular strategy of attempting to alter the propensity to offend has relied on increasing self-control. Despite the efforts forwarded under this strategy, the fact that offenders, and especially persistent offenders, continue to offend is evidence that offenders continue to exhibit low self-control. Perhaps resources applied to affecting criminogenic factors are better utilized as part of an effort to reduce opportunities to offend, especially in areas where more opportunities to offend exist.

6.8 Persistent Offenders and the Criminal Justice System

The findings of this study and any future studies investigating persistence that proceed with a comprehensive understanding of persistence are of benefit to the criminal justice system. In providing a comprehensive understanding of persistence, this study also contributes to the body of knowledge in criminology and provides a base for future research. The study lays the groundwork for future research which can benefit criminal justice systems and their respective agencies. Most importantly perhaps, this study illustrates the difficulty in defining persistence and suggests that any definition of persistence should include consideration for the realities existing in the respective jurisdiction for which the definition would be applied.

It is not only the findings of this study that are important to criminal justice agencies however. The topic of persistence itself is important. Understanding

persistence is important to police agencies in order for those agencies to better understand how to police persistence, how to better utilize patrol officers, and how to prevent future offending. Given the amount of data routinely collected by police agencies, a better understanding of persistence can lead to better data analysis and better resource allocation based on the findings of the analyses conducted on their own data.

Understanding persistence is important to courts as well. Court systems could create their own definitions of persistence or incorporate the definitions developed by police agencies. Understanding that a persistent offender, even those who perhaps commit only nuisance crime, will continue to offend, may cause a court system to take a more serious view of prosecuting and processing persistence.

Compared to the police and courts where any persistent 'labels' are actively applied, correctional systems simply house persistent offenders. The benefit to understanding persistence for correctional staff then is not to determine persistence but to control the characteristic resistance to sanctions, and future offending (persistence) within a secure environment. Such an effort may include structuring the environment of persistent offenders to reduce opportunities to offend within the institution as well as preparing the persistent offender for release.

An understanding of persistence may lead to the development of new policies and laws aimed at combating persistence. Alternatively, current policies or laws may gain renewed support as public opinion changes to support crime reduction initiatives stemming from or supported by research on persistence.

6.9 Limitations of the Study

As with a number of studies investigating persistence, this study utilized arrest data. With the use of that type of data comes the usual limitations associated with not including consideration for all crime but rather only crime reported to the police and for which the police make an arrest. Associated with that data is a bias toward persons who are arrested. Offenders arrested on numerous occasions become known to law enforcement personnel and therefore may be arrested more often. Higher numbers of arrests will lead to more charges, possibly convictions and ultimately commitment to CYA facilities and inclusion in this dataset.

This study is limited also by the fact that most offenders in the data are indeed persistent offenders and therefore, the findings of the examination of several definitions are restricted by and to that type of population. Naturally then, any definition developed using such data would not apply to offenders or offending in general.

Furthering the above thoughts, another limitation of the study is that the analysis is conducted on a specific population. As such, the findings cannot be generalized to youth in general or to offenders in jurisdictions outside of California. This does not impose a severe limitation on the study however. Since the analysis was conducted on data for all offenders in California committed to the CYA and released in California, the findings are applicable to all of California and its population of almost 34 million people, with nearly nine million youth, and therefore, to the reality of persistence in that state (U.S. Census Bureau, 2007).

The analysis of the criminal career length included in the section on persistence issue is limited by the number of years covered by the data. If arrest charge data were

available for more years, the finding may well have shown longer career lengths for some offenders.

6.10 Future Research

By providing a comprehensive understanding of topics in criminal career research and persistence, this study should serve as a catalyst for further research. For this author, the understanding of persistence will enable further research into areas touched on in this study and for which a desire exists to further investigate. The following topics are considered for future work.

Initially, this study was to be conducted using data from an entirely different jurisdiction. Nonetheless, data was provided by the CYA and this study was still able to provide a framework for investigating persistence under a computational criminology model incorporating theory and method. Such an analysis could be conducted in alternative jurisdictions to better understand the reality of persistence and persistent offenders within and across other jurisdictions. Such investigations may reveal findings similar to those in this study or, alternatively, result in the creation of definitions of persistence that are jurisdiction specific.

The suggestion that persistence should be considered not only in general terms but that there may exist numerous types of persistence provides an interesting topic for future investigation. In criminology, persistence is a commonly used term with a generic meaning of continued offending. This study suggests that offenders may actually offend through patterns of behaviour that reveal differing types of persistence including low frequency long-term offending, high frequency long-term offending, high frequency

short-term offending, and high frequency short-term cyclical offending. Future examination of the existence of types of persistence may result in the term persistence being dropped in a general sense in favour of adopting terms describing specific types of persistence. The arrest data used for this study for example, enables continued analysis to examine the existence of differing types of persistence.

This study found that offenders actually offend more often following their first release from CYA than they do prior to their first admission to CYA. Haapanen (1990) reports however, that offenders committed to CYA actually offend at a lower rate following release from custody than offenders who are never incarcerated, suggesting that there is a positive effect of incarceration over non-incarceration. Future research on the effect of incarceration could provide additional findings on this topic. Additionally, the topic of incarceration effect would be an interesting one to compare across jurisdictions to investigate whether incarceration has differing effects in different jurisdictions within states, nationally and internationally.

Since this study considers a variety of theoretical backgrounds, it would be desirable to incorporate the analyses associated with those theories in future investigations. For instance, analyses associated with crime pattern theory such as spatial analysis, distance to crime, nodal analysis, and other analyses involving physical (including urban) and social landscapes would help to understand the behaviour of persistent offenders as they engage in crime. The crime analysis techniques conceptualized by crime pattern theorists, coupled with the capabilities of modern computer systems benefit the analysis of persistence and crime reduction efforts by providing visual representations of persistence, by contributing to the understanding of

persistent offenders, and by fostering new ideas and methods for effectively reducing crime.

Another area for potential future work is the continued development of a control resistance theory. The suggestion of Haapanen, Britton & Croisdale (2007) that persistent offenders continuously resist both formal and informal controls provides an intriguing area of investigation for future research and theory development.

This study provides a comprehensive understanding of persistent offending through the application of a variety of theories and methods. As such, it presents a starting point for the development of an interdisciplinary model for studying persistence. The model could be expanded and refined through future work while incorporating theory, methods and crime analysis techniques. Through the presentation and incorporation of multiple criminological theories, this study revealed that persistence can be studied from a variety of perspectives, including a multi-theoretical perspective drawing from rational choice, life-course and social control theories. A variety of methodological techniques and types of analyses can also be applied to the study of persistence. In keeping with the principles of computational criminology, this study considered and incorporated both crime theory and data analysis capabilities enabled by advances in computing. Further study of persistence based on multiple theoretical viewpoints and using computational criminology should enable positive contributions to criminology and to criminal justice jurisdictions desiring to reduce crime.

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